ABSTRACTS

EXPERIMENTAL TUMORS; SPONTANEOUS ANIMAL TUMORS


This is an extremely interesting and detailed review of the literature of experimental cancer. The author has covered a wide field, and has certainly missed very little of the important literature. The sections on tar cancer, filtrable fowl tumors, and the experimental leukemias are particularly sound and include the findings of recent workers on these subjects. There are twenty-five illustrations.

F. Cavers


The author denies that the investigation of transplantable tumors is useless, though it is often said to be so because these can be cured by a variety of agents. He has tried on the Ehrlich mouse carcinoma, however, all those mentioned in the available literature without having been able to affect its growth in the slightest.

Still, some familiarity with propagable neoplasms is necessary if they are to be employed to the best advantage. Thus an investigator cognizant of their tendency to spontaneous cure will employ an adequate number of treated animals and sufficient untreated controls in testing a therapeutic agent. If it seems to be effective it should be subjected to several more trials with the same tumor strain, then tested on other transplantable growths, and finally on tar or spontaneous tumors.

The success of transplantation depends not only upon the growth vigor of the tumor cell but also upon the resistance of the host. Natural resistance to homologous tumors was broken down by repeated (50) tarring, and the Jensen rat sarcoma has even been made to grow for months in tarred mice. Preliminary treatment with x-rays increased the yield of tar tumors [presumably in mice, though this is not definitely stated].

Resistance to transplantation can be elicited in rats and mice by non-specific agents (latent paratyphus infection, sarcosporidiosis).

Homologous tissues exhibited a definite specificity. Thus injections of the Ehrlich carcinoma too small to produce a tumor elicited a much higher immunity to this growth than treatment with blood or other normal tissues.

It is often said that transplantable tumors do not metastasize freely and therefore are not comparable with the neoplasms of man. The objection fails, however, in the case of the Brown-Pearce rabbit carcinoma, which produces secondary growths in practically every organ. Even with this extremely virulent tumor it was possible to demonstrate a highly specific immunity, for introduction of a fragment into the serotum (not the testis) protected against subsequent inoculation, whereas bits of normal tissue did not.

The paper closes with a discussion on the possibility of ultimately working out an immunological treatment applicable to the human patient and an expression of the firm conviction that systematic investigation of the transplantable tumor will produce results of the highest value.

Wm. H. Woglom


Following a study of the sterilizing effect on male germ cells of deprivation of vitamin E, Juhász-Schäffer (Virchows Arch. f. path. Anat. 281: 35, 1931) found that this vitamin
strongly stimulated the growth of fowl embryo tissues cultured in vitro. This result stimulated Zagami and Marchesi, as well as Engel (see Abst. in Am. J. Cancer 19: 405, 1933), to investigate the influence of diets poor and rich in vitamin E on the growth of animal tumors. The three authors mentioned agree in finding no evidence that vitamin E either increases or diminishes the percentage of takes, or influences the growth of established tumors one way or the other. Their reports also agree in the smallness of the number of animals used for dietetic experiments.

Zagami used 52 rats, of which 24 were given a normal diet including vitamins A, B, C, and D, to which wheat oil rich in vitamin E was added, while the remaining 28 were deprived of vitamin E. After four to eight months the animals were inoculated with Jensen sarcoma, and the tumors were removed twenty-four to twenty-seven days later. A table is given showing the number of takes, the weights of the animals and tumors, and the ratios between the two. The two series showed no sensible differences in these respects. A good bibliography is given.

Marchesi, working in the same laboratory, reports similar negative results. He varied Zagami’s method by using for his vitamin E-free series 7 rats the offspring of normal fathers and of mothers which had been kept in a state of E avitaminosis but had not become completely sterile, though littering scantily. He kept 7 rats on a normal diet and 7 on a diet enriched by additional carbohydrates and vitamin B, and noticed that the latter seemed to increase the growth of the sarcoma, though he admits that these numbers are far too small to justify any conclusion. There are two illustrations.

F. Cavers


The belief, so often expressed, that human neoplasms of extragenital origin grow more rapidly during pregnancy, is still unproved and additional information has frequently been sought, therefore, in animal tumors. Here investigators agree, with but few exceptions, either that pregnancy has no influence on tumor growth, or retards it.

The authors of the present paper did not find that the growth rate of a transplantable mammary adenofibroma of the white rat, or of a transplantable fibroma derived from it, was materially altered by pregnancy. These tumors, however, underwent cytologic changes similar in every way to those of the lactating breast, presumably as a result of hormonal influences since nerve fibers had never been observed in these growths.

Wm. H. Wogolom


Splenectomy one week before tumor inoculation had no effect on the growth of the Honda rat sarcoma. Where extirpation of the spleen was carried out one month before inoculation, the tumors in the splenectomized animals receded after having grown well for two weeks. The author concludes that the spleen is not concerned in the growth of the Honda rat sarcoma. The regressions in the second experiment are referred to a possible increase in the activity of the reticulo-endothelial system. [Neither the number of animals nor the proportion of receding tumors is given.] Wm. H. Wogolom


Thyroidectomy inhibited the growth of the Honda rat sarcoma. This conclusion is based upon observations on 12 animals—6 without thyroids and 6 normal controls. Wm. H. Wogolom
Sarcomatous Change in Mammary Fibro-adenoma of Rats, Following Injection of Folliculin, A. Picco. Trasformazione del fibroadenoma mammario trapiantabile dei ratti in sarcoma mediante iniezioni di follicolina, Cancro 4: 293–304, 1933.

In view of the well known action of folliculin in promoting hypertrophy and lactation in the breast, the author gave small daily injections of this substance to three adult virgin rats bearing a transplantable fibro-adenoma of the breast, then in the fifth generation. The three animals died within three to four months after the beginning of treatment, and in each case a more or less considerable portion of the tumor showed replacement of epithelial by sarcomatous structure, in which some giant cells were present. The author notes that a precisely similar change was reported by Heiman (Am. J. Cancer 17: 165, 1933), but thinks that in his own experiments the folliculin played a part, since he had never observed sarcomatous change in untreated animals [number not stated]. There are six good illustrations.


A mouse sarcoma obtained by injection of a dibenzanthracene compound (1 : 2 : 5 : 6-dibenzanthracene-9 : 10-endo-aβ-succinate) was grafted successfully and had reached its 20th generation. It was found to be associated, in most of the grafted mice, with a leukemia which was observed when the blood was first examined, in the fourth generation, and had been transmitted with the tumor grafts. Mice from the various generations showed leukocyte counts of 90,000 to 400,000. The leukemia increased with the growth of the tumor, the highest counts being obtained in the last few days before death, and was often accompanied by anemia with occasional normoblasts when the erythrocyte count was particularly low. Smears from the spleen showed myeloid changes and the presence of numerous myeloblasts and myelocytes, with diminution of the lymphoid tissue. The bone marrow was largely replaced by yellow pus-like material consisting of polymorphonuclears, myeloblasts, and hemohistioblasts. The two latter types showed active nuclear division. There are fifteen good illustrations.


Following a preliminary account of the results here reported (see Abst. in Am. J. Cancer 21: 864, 1934), the authors give a detailed description of their experiments. The technic used was in the main that described by the senior author in a previous paper (Am. J. Cancer 15: 563, 1931), but the following points are emphasized. The original fragment of Jensen rat sarcoma, from which cells have migrated into the culture medium, should be removed before the addition to the culture of the immunizing serum which is to be tested. A drop of such serum contains a limited number of antibodies, which combine with the killed tumor cells and are absorbed in this process. Even if they kill all the migrated cells on the surface of a tumor fragment, after a time living cells from the depths of the fragment migrate into the absorbed and now harmless antiserum, replacing the killed cells and so giving a negative result. The authors state that those who have attempted to disprove the existence of anticancer bodies have persisted in using this fallacious method or in setting up a culture ab initio in immune serum.

It is essential for the repetition of these experiments to use only sera from active young cultures of the Jensen sarcoma. In these cultures there were seen sarcoma cells of two types, with every intermediate stage between them: (1) translucent, pointed, often bipolar cells containing very few but brilliantly refractile granules and a large nucleus with reticular chromatin and well marked nucleoli; (2) more granular polymorphic cells with similar nuclei, which take up vital dyes more readily than the younger translucent cells and are phagocytic. The authors believe that cells of type 2 have been mistaken by Ludford (see Abst. in Am. J. Cancer 23: 364, 1935) and some other writers for normal macrophages or polyblasts, to which they have some superficial resemblance. These cells are much more resistant to anticancer bodies than the translucent cells of type 1 which should be used in testing the titre of these bodies in immune sera. The authors
agree that on vitally staining a culture of Jensen sarcoma the cells vary in the amount of stain taken up, but they deny that these variations can be regarded as a criterion by which normal and malignant cells can be differentiated.

In every one of forty-one rats immunized against Jensen sarcoma a high titre of anticancer bodies was demonstrable in the serum within one week of the last immunizing inoculation. Such antibodies were absent from the sera of 68 controls (47 normal animals and 21 with progressively growing sarcoma). They destroyed cancer cells alone, and were harmless to the various migrating cells in cultures of normal tissues (rat heart, kidney, and spleen). The sera of rats immunized against Jensen rat sarcoma were as toxic to cultures of mouse carcinoma as to those of Jensen rat sarcoma.

The diurnal determinations of the antibody titre (percentage of migrating cells killed) are given in a series of tables, with corresponding charts. In two of the four charted series the highest average titre (89, 68) occurred on the third day after the last immunizing inoculation, with two secondary lower waves of toxicity reaching their peaks on the 10th and 16th, and the 8th and 10th days respectively. In the third and fourth series the average titre rose on the third day (65, 64), but the maximal rise (76 and 70) occurred on the eighth day. These four tables include the results obtained with the sera of 27 immunized rats. In a fifth table the authors give the titre of anticancer bodies in the remaining 14 rats on the third day after the last of a small number (3 or 4) of immunizing injections; the average titre was 62 per cent, the range 25 to 95. Two further tables show the fall in titre of immune sera after these had been kept for various periods, and the low titre when a long interval (twenty-six to thirty-two days) was allowed to elapse between the penultimate and final immunizing injection of sarcoma. There are eight photomicrographs.

F. CAVERS


The author showed many years ago that the agent of the Rous sarcoma is present in the erythrocytes of affected fowls, for they will elicit tumors even after repeated washing. The question was taken up again later for experimental analysis (Ztschr. f. Krebsforsch. 40: 166, 1934. Abst. in Am J. Cancer 21: 113, 1934), and it was then shown that the etiological principle is present also in the plasma, though unequally distributed between it and the red blood cells. Usually the plasma contains more, but instances have been encountered where all the agent was in the erythrocytes. It is now necessary to inquire which constituent of the red blood cell holds the agent—stroma or hemoglobin—and what alterations this imposes upon the portion with which it is associated.

Erythrocytes from fowls with large tumors were washed at least three times (or until the saline gave no protein reaction) to remove all their adherent plasma. The mass was then divided into two parts, one of which was injected (with kieselguhr) while the other was laked in distilled water. Stroma and hemoglobin were separated by centrifugation, and the former was washed several times. It was never possible to remove all the hemoglobin by this method, however, for the stroma always retained a slightly pinkish tint, yet no other means were available because the agent would have been injured. The stroma with its nuclei, and the hemoglobin solution, were separately mixed with kieselguhr and injected. The stroma, in 23 experiments, gave 50.3 per cent positive results, the hemoglobin 82.6 per cent. It is very likely that the stroma held even less of the agent than these figures would indicate, for it always retained some hemoglobin; in any case, there was no instance in which the agent appeared to be bound by stroma and not by hemoglobin.

The tumors produced by either stroma or hemoglobin alone were much smaller than those following the injection of fresh untreated red blood cells or of plasma, very likely because a large proportion of the agent was lost during separation of the cell bodies from their contents.

To answer the second half of his question—what alterations are imposed by the agent—the author had recourse to spectrographic analysis. The three principal hemoglobin bands, all belonging to hematin, were found unaltered. Differences were discovered, however, in the globin, and when it is recollected that the affinity for oxygen
depends upon this constituent it appears possible that the rapid cachexia of tumor-bearing fowls, inexplicable by anatomical findings and therefore ascribed in the past to general intoxication, may be caused by a reduction in the power of hemoglobin to fix oxygen.

WM. H. WOGLOM


One hundred and thirty-three mice were treated with less than the customary amount of tar, either by shortening the period of application from the usual six months to three, two, and one-and-a-half months, or by tarring a smaller number of times (once or twice weekly, or once every two weeks) throughout a normal six-month period. After two months of tarring there were no tumors at the irritated site but in remote regions of the skin (sebaceous gland adenomas) and in internal organs tumors (adenoma or carcinoma of the lung, multiple papillomas and keratinizing cyst of the stomach) were as frequent as in mice tarred for six months. Descendants of tarred mice developed new growths more readily, both at the tarred area and at distant sites, than those of untreated ancestors. The author suggests that this increased susceptibility is to be referred to transmission of the carcinogenic agent by the mother rather than to genetic factors.

In tumors of the internal organs (e.g., adenoma of the lung) endogenous factors would appear to play an important etiological role.

The spindle-cell tumors so commonly elicited by tar are regarded by the author as pure carcinomas rather than carcinosarcomas.

WM. H. WOGLOM

Does the Daily Ingestion of Small Quantities of Aluminum Favor Carcinogenesis?


Tar was applied to 48 rabbits in the customary manner, while 68 were painted and given daily doses (except on Sundays) of 20 mg. of aluminum sulphate per kg. body weight. In the first group, 78 per cent of the 14 that survived more than forty days developed cancer. In the second, carcinoma arose in 50 per cent of the 12 that lived forty days or more. Thus if the aluminum had any effect at all, it inhibited rather than favored carcinogenesis.

The aluminum, which was given by stomach tube in watery solution, produced no visible lesions of the gastro-intestinal tract. Other experiments showed that the rabbit will tolerate much larger amounts of the metal than were administered in this experiment, and accordingly there is no basis for the suspicion that the small amounts introduced into the diet from cooking utensils may be toxic to man.

WM. H. WOGLOM


The author discusses the toxicity of aluminum and its possible relation to cancer. He concludes that food dissolves little aluminum from cooking utensils, that aluminum salts in doses far in excess of the amounts naturally occurring in food are non-toxic when taken by mouth, and that there is no significant evidence to show that there is any connection between aluminum and cancer.

H. Q. WOODARD


The authors’ experiments were undertaken in the hope that they might lead to an improved technic for the treatment of generalized malignant processes. Mice were placed in a metal cage in the center of which radium was held in a fixed container. Healthy animals exposed continuously to gamma rays from 1.0 to 7.5 mg. of radium lived from sixty-six to a hundred and ninety days. Smaller doses had no effect. With the heaviest doses the leukocyte count quickly fell from 12,000 to 3000. Exposures to
0.3 mg. resulted in a depressed leukocyte level, although the animal’s life was not appreciably shortened. In no case was there any increase in the number of leukocytes. Another series of mice, inoculated with lymphatic leukemia, were irradiated as soon as the spleen and lymph nodes became enlarged. Exposures to 1.0 or 2.0 mg. of radium resulted in a prolongation of life (twenty-eight days as against sixteen days for the leukemic controls). Larger doses were not effective. The malignancy was not destroyed by this treatment.

In a third series the mice were irradiated immediately after inoculation. This treatment increased their susceptibility to the inoculation, for the number of takes was greater than in the non-radiated controls.


The authors discuss in a general way the treatment of inoperable spontaneous malignant animal tumors (mammary carcinoma in a dog, sarcoma of the neck in a fowl) by means of “negativation.” While it is not pretended that any of these neoplasms were cured, they were at least rendered more mobile and became, as the authors express it, pedunculated, and therefore operable. For a complete discussion of this method, introduced by Laville, they refer to a book by Aubourg, Laville, and Le Go: La négativation électrique. Théorie. Premiers résultats cliniques, Masson, Paris, 1934.

WM. H. Wogлом


The author points out that the injection of 1 : 2 : 5 : 6-dibenzanthracene into the breast muscle of a fowl may be followed by (1) localization of the substance in the muscle or deposition in connective tissue or phagocytic cells, (2) active or passive removal from the site of injection, (3) chemical change. In investigating these possibilities he estimated spectrographically the quantity of dibenzanthracene present in the pectoral muscle. The amount was found to diminish rapidly, falling in a few days to less than 10 per cent of the original quantity. Evidently the bulk of the injected substance is transferred or undergoes chemical change. No trace of it was found in the liver.

Examination of the excreta to detect its elimination as such was attempted, but the tests were unsatisfactory and will be repeated.

F. Cavers


The authors prepared a Berkefeld filtrate from a 25 per cent Rous chicken sarcoma extract. To this a 2 per cent solution of zinc chloride was added. The supernatant fluid and the precipitate were injected into the pectoral muscles of normal chickens. The former gave no tumor growth, while the latter produced tumors but considerably smaller than those from untreated filtrate. The zinc chloride precipitate was then dissolved in dilute ammonium citrate and the zinc precipitated with freshly prepared ammonium sulphide. The supernatant solution gave rise to tumors, but showed a marked reduction in the activity of the filterable agent. The causative agent was not lost through dialysis. It is evident from these experiments that the filterable agent of Rous chicken sarcoma behaves essentially like bacterial toxins and bacteriophage and not like vaccine virus, since the latter is not purifiable by this method (Hosoya et al.: Compt. rend. Soc. de biol. 99: 773, 1297, 1465, 1928; 100: 8, 1929; Japanese J. Exper. Med. 10: 101, 1932).

K. Sugiura

During more than four years the authors have maintained in their laboratory a strain of mice with a marked tendency to develop mammary carcinoma. All were derived from a pair of descendants of mice furnished by Dr. B. J. Simpson and belonging to the Lathrop-Loeb stock. Tables are given showing the age incidence and frequency distribution of tumors in groups, for 168 tumor-bearing females. The authors intend to furnish evidence relating to heredity of mammary tumors in mice in a later paper.

F. Cavers


A fat-soluble substance stable to acids, alkalis, and heat to 78° C. was extracted from spontaneous mouse adenocarcinomas. When injected into castrated female rats it produced nucleated and cornified cells in the vaginal smear; in young female rats it caused premature opening of the vagina. Only 5 test animals are mentioned.

H. Q. Woodard


In the course of detailed studies of the histologic changes in the mammary gland of the rabbit during growth and sexual cycles, certain changes similar to chronic mastitis in man were observed. Thus in more than 90 per cent of resting breasts (old or young male breasts, virgin female breasts, and the resting post-lactation breast) cyst formation, epithelial hyperplasia and metaplasia, cell infiltration, loss of epithelium, or scarring of the stroma were found alone or in combination.

The relationship between hormone activity and the histologic picture in the breasts of female rabbits is exactly the reverse of that between hormone activity and chronic cystic mastitis in women, for in the rabbit estrus erases the lesions, whereas in the human female the premenstrual period intensifies the clinical picture.

These observations suggest that there is a growth tendency present in the mammary epithelium, the cells of which require a hormone for orderly development, and that when this is absent the cells develop irregularly. Under this conception the changes in the stroma may be secondary to those in the epithelium.

Wm. H. WogloM

A Spontaneous Renal Tumor in a Rabbit, M. F. Bonnel. Sur un cas de tumeur rénale spontanée chez le lapin, Rev. de path. comparée 34: 470-471, 1934.

The author reports an adenoma of the renal cortex in a male rabbit found incidentally at autopsy. The age of the animal is not stated, except that it had been in his possession for more than a year.

[For a recent review of the 73 tumors of the rabbit previously recorded see Fardeau: abst. Am. J. Cancer 23: 845, 1935].

Wm. H. WogloM


The method used by the authors is simple. The surface of the tissue is scraped with a knife onto a slide to form a film, which is fixed with Schaudinn’s fluid; Mayer’s hemalum was found to give the most constant results as a nuclear stain. The authors state that “the malignant cells were often isolated or in small clusters, but they differed so markedly from normal cells that the diagnosis could be made with certainty.” They do not suggest that a solitary cell could be pronounced malignant “on its own merits” but state that in a field where benign cells are present for comparison the diagnosis is not
difficult. The chief features suggestive of malignancy are as follows. The nucleus stains more deeply with hemalum. The nuclei vary in size and shape, they are larger than normal, and their position relative to the surrounding cytoplasm is in no way constant. The nuclear chromatin is arranged in thick, irregular, deeply staining bundles, and the fine reticular arrangement as in normal cells is rarely seen. The nucleoli are much larger than normal and are sometimes multiple. Mitosis is more frequent in malignant cells, and the latter do not stick together in regular formations; such plaques are the exception, and when they are found the cell boundaries are obscure, so that the appearance is that of a syncytium.

The authors state that in 39 cases carcinoma was demonstrated in apparently normal tissue which had not yet reacted to its presence; also that in 8 cases a diagnosis of malignancy was made from the film, and, although this was not demonstrated by the sections made at the time, the fate of the patients confirmed the wet film diagnosis. In rodent ulcers (basal-cell carcinomas) "the characteristics of the film histology are intermediate between those of a carcinoma and a simple tumour." There are six illustrations from camera lucida drawings.


The author has carried on an extensive series of extremely laborious investigations on the biology of x-rays for four years. During this time some 3000 tissue cultures have been made and tested, which implies the ultimate making of about 40,000 to carry on the standardized growths. Fibroblasts from bits of chicken heart muscle of eight-day embryos were used as a standard material, and grown with the standard techniques in chicken plasma with embryonal extract. The radiation was carried out first at room temperature and later at 38° C. The measurements of the x-rays were made with a Küstner standard apparatus. The voltages employed varied from 65 to 160 kv.

Extensive observations were made to determine what might be considered the standard rate of growth, and it was found that the size of the original graft of chicken heart tissue determined, during the first four days at least, the area of the growth. By careful investigation a linear relationship was demonstrated between the size of the original particle and the size of the untreated culture. The measurements were made by projecting the cultures at a low magnification and making sketches. Slight variations were found from day to day in different cultures. Part of this is due to the impossibility of obtaining a perfectly standard culture medium, variations in the feeding media, and slight temperature fluctuations in the incubator, but it was finally found that tissues showed a sufficiently constant growth in Carrel flasks so that six days after the explanation they could safely be used as indicators.

It was observable, as others have shown, that after radiation there is a latent period which amounts to about one day in the conditions given. A dose of 1200 r was fatal to the cultures, but an instantaneous effect could not be obtained even with 6400 r given as a single dose. Below 1200 r the inhibiting action of the roentgen rays was practically proportional to the dose. The wavelength as modified by voltage and filtration was without influence upon the growth of the cultures, the total amount administered in r units being the only factor. Table 25 (page 69), for example, shows that the dimensions of three cultures exposed to 800 r radiation, of 0.09 half-value in copper, 0.3 half-value in copper, and 1.18 mm. of copper, respectively, progressed parallel with each other.

In his citations from the literature the author has made a few slight errors. Holthusen and Zweifel (Strahlentherapie 43: 249, 1932), whom he quotes, could not have compared x-rays and gamma rays in roentgen units for they used Ascarius eggs. Also, Duffy, McNattin, Copeland and Quimby (Am. J. Roentgenol. 29: 343, 1933) used the skin erythema as a unit of measurement and the time factor was not equal in all cases, so that they can scarcely be said to have made very accurate measurements. As a matter of fact, Wood (Am. J. Roentgenol. 12: 474, 1924) was the first to show, with mouse tumor cells as an indicator, that the effects were independent of the wavelength, and shortly afterwards Packard, working under Wood’s direction, demonstrated the same fact with Drosophila eggs (J. Cancer Research 11: 1, 1927).
The author points out quite properly in another section on the subject of fractional exposures that while with tissue cultures, *Drosophila* eggs, bacteria, and yeasts the Bunsen-Roscoe law may express the results obtained, this has nothing to do with the exceedingly complicated relationships which exist when, for example, a tumor is exposed *in situ*. Here the effects may be entirely different because the destruction of the tumor may depend partly or entirely upon direct action, partly upon vascular injury, and partly upon preservation of the vascular supply, which gives the tissues sufficient food to permit the cells to divide rapidly and hence be radiosensitive. Thus the law governing the destruction of the single cell is different from that for a cell in which larger or smaller restitution effects are possible. The author also finds, in contradistinction to others, that the sensitivity of growing tissue to radiation is not dependent upon the conditions of proliferative activity at the time.

A bibliography of 140 names is appended. The whole forms an excellent study of the various biological phases of the action of x-ray on growing tissues, but it must be remembered that the growing tissues used are fibroblasts from chicken heart muscle, and it would be well not to generalize beyond this point. The work should be repeated with human tissues, as is now perfectly possible.


In his study of tissue cultures of Jensen rat sarcoma the author used a mixed silver and osmium method in addition to vital staining with neutral red. The Golgi apparatus was extensive in the tumor cells, its surface area being equal to that of the adjacent nucleus. There are ten fine photomicrographs.

F. Cavers


Komuro states that staining with eosin-methylene blue is suitable for determining only the alkaline or acid reaction of cytoplasm and nuclei, but is not useful for determination of the different constituents of the nuclei. Congo red, which undergoes a faint change of color in a slightly acid medium (pH 5–6), was used for determining the acid character of the cytoplasm.

K. Sugiura

Regeneration is independent of the destructive lesion which precedes it, but takes place solely from the normal tissues remaining. Hence it is not a pathological but a biological process—a repetition of the formation of normal tissue by normal tissue—whose goal is the restitution of healthy structure and function.

Of late years the conception of regeneration has been broadened in an erroneous way. It is now repeatedly said that chronic stimulation causes tissue injuries which the regenerative tendency continually strives to repair, until finally the production of new cells oversteps the physiological limits and becomes neoplastic growth. Thus Fischer-
Wasels constantly employs the term "regeneration tumors" and v. Balogh speaks of the "regenerative capacity of carcinoma" after injury by x-rays, assuming thereby that a neoplasm reacts in the same way as normal tissue. But as the cells of malignant tumors are independent both of the normal body cells and of each other and cannot take part, therefore, in a purposeful formation of tissue, they cannot be said to regenerate. As for the relationship between regeneration and neoplasia, there is only one form of regeneration and this is always directed along normal channels. There exists no abnormal regeneration, no hyperregeneration, no malignant regeneration, and no regeneration tumor. For regeneration can supply only differentiated cells, and in neoplasia the very factors which direct this process are no longer operative. Thus it is actually the gradual suppression of regeneration that determines the birth of a tumor.

In reply to Follmann's criticism, v. Balogh writes that he was considering principally regenerative processes in the blood-vessels of neoplasms, and had no intention of comparing the proliferation of tumor cells with the regeneration of normal tissues.


Every normal cell of the body is under the direct control of the vegetative nervous system. Though such a view may appear fantastic at first sight, it must be remembered that within the past few years there has been demonstrated in the vegetative nervous system a terminal reticulum, composed of the most delicate fibrils, which penetrates and connects every single cell. Furthermore, it appears increasingly probable with each passing year that all intracellular activities are governed by nervous influences.

As the metabolism of the tumor cell is a matter of the greatest interest, the author has undertaken an investigation of the terminal reticulum in neoplasms. The prevailing view that new growths contain no nerves must be revised, for it was formulated at a time when the present accurate histological technic was not yet available and before the terminal reticulum had been discovered.

The inquiry has been limited so far to the skin and two of its neoplasms, the nevus and the carcinoma. The former proved to be extraordinarily well supplied with a terminal reticulum, which appeared to have increased in company with the nevus cells. Thus these elements must certainly have proliferated under nervous or, better, neurovegetative influences. These findings confirm the views of Soldan and his followers in respect to the presence of nerves in nevi.

In contrast with the benign mole, the epithelioma contained no reticulum. There was definite evidence of fibrillar degeneration in direct proportion to the age of the neoplasm, though whether this was primary or secondary the author has so far been unable to decide. So much, however, is clear; every epithelial cell is normally under constant neurotrophic control by a delicate and extensive vegetative terminal reticulum that exerts a continuous regulatory supervision over all its activities. This influence is absent in the case of the cancer cell, which accordingly is no longer neurotrophically directed. The degeneration is not an artefact due to any vagaries of the method employed, for the deeper portions of the sections contained reticulum in all its perfection. The author thus agrees entirely with those who see some connection between neoplasia and the vegetative nervous system, or "sympathetic hormonal" apparatus.

Between the extreme possibilities of too much or too little direction there lies a whole scale of unbalanced influences affecting the metabolism of every cell, though it should be obvious that such an explanation cannot solve the entire problem of carcinogenesis. While a series of coordinated factors is no doubt involved, it is probable, nevertheless, that the vegetative nervous system is implicated.


As a tumor is the product of abnormal multiplication of cells, its cause must be sought where normal division is supervised. This site is not the nucleus, which corre-
sponds to the sexual apparatus of the cell, but the centrosome, which represents its vegetative nervous system. In multicellular organisms, however, karyokinesis is no longer under the sole influence of the centrosome, being subject rather to the administration of the central vegetative nervous system, which connects all the cells of the various organs. Unfortunately, it is difficult to demonstrate this relationship during cell division, for histological methods which will bring out the nerves well are unsuitable for the centrosome, and vice versa. Still, the fact that the centrosome appears during division at the very spot formerly occupied by the nucleolus confers on the termination of nerve fibrils in this latter structure a considerable significance for karyokinesis.

It has not yet been possible to trace back the nerves of tumors, but it may be that the connection has been broken and that the control of the vegetative nervous system has thus been removed, permitting autonomous growth to set in.

The various centers of the hypothalamus were so distinctly atrophied in all 33 cancer patients examined as to leave no doubt that its vegetative nervous centers are deeply concerned in the initiation of malignant disease. No special one could be implicated, however, for any particular type of cancer.

W. H. Woglon


The author's theme is that the time has come for the abandonment of the hitherto almost universally accepted explanation, put forward by Virchow, that every cancer cell is formed by the growth and division of a pre-existent cancer cell. The alternative explanation advocated by the author is that a cancer cell has the power to induce malignancy in the presumably normal cells which are in contact with it. There is no need to invoke the intervention of an ultramicroscopic carcinogenic agent, infective or humoral. Part of the cytoplasm of the cancer cell simply migrates into the neighbor cell via the intercellular bridges or the fibrillar tissue, which can be demonstrated by special silver and other impregnation and staining methods to exist as a delicate reticular stroma uniting the cytoplasmic bodies of the cells into what is practically a syncytium. The author is concerned here only with epithelium and the malignant tumors arising from epithelial cells, and he terms the intercellular structures the epithelial fibers. This method of tumor growth is termed "assimilatory" because the "infected" cell assimilates the malignant characters of the "infecting" cell.

This theory is coupled with the rejection of the view that the cancer cell can be distinguished from a normal cell by cytologic or karyologic characters. A histologic diagnosis of malignancy is impossible until the assimilatory process here hypothesized has spread to a considerable number of cells and these have assumed the disorderly autonomous growth which is the actual criterion of malignancy.

The arguments used in this attempt to displace Virchow's view of the mode of growth of a malignant (or benign) tumor are very unconvincing. The author, as stated, confines his attention to malignant epithelial tumors, but it is highly improbable that these grow in a manner differing from that of malignant tumors arising in non-epithelial tissues. He says that when the problem of the mode of growth of an established tumor has been solved, the problem of the origin of tumors will simultaneously find its solution. This is not a logical conclusion, but a mere guess.

There are five illustrations from squamous-cell carcinomas in which the "epithelial fibers" were demonstrated; these structures are clear in the two diagrammatic drawings, but are not visible in the three photomicrographs given.

F. Cavers


Cultivation in vitro was attempted with genital carcinomas, most of them from the cervix uteri. In spite of an occasional mitotic figure it is doubtful whether actual growth took place; survival would perhaps be a more accurate term to employ. As the tumor lived longer when mixed with normal tissue from homologous or heterologous
embryos than when put up alone, normal cells appear to exert some sort of protective action. While extensive invasion did not take place, because the carcinoma cells did not adhere to form one sheet, single elements did penetrate the connective tissue.

The results of this investigation are carried over to the tumor growing in vivo, and the suggestion is made that the connective tissue in the neighborhood of a neoplasm, often regarded as a defense, may actually offer an easy path for invasion. This conception explains the better results following radical operation for cervical carcinoma in comparison with local extirpation; in the former case the connective tissue which would promote the growth of any cells left behind is removed with the tumor.

[It seems to the reviewer hazardous to base any conclusions whatsoever upon dying cancer cells in contact with alien connective tissue. It is true that homologous tissue is mentioned in the text, but the cultures chosen for illustration were all mixtures with embryonal mouse or chick heart.]

WM. H. WOGLOM


This is a theoretical discussion of the trephons and inhibitory substances of Carrel, the former of which are related to the globulins while the latter appear to be lipoids. These two antagonists are in equilibrium in the normal adult.

The difference between cicatrization and cancerization is one of degree only. Cicatrization may be defined as a transient and controlled hypertrehopho cytosis, cancerization as an established uncontrollable hypertrehophocytosis.

WM. H. WOGLOM

Origin and Biology of Malignant Tumors, F. BLUMENTHAL. Consideraciones generales sobre el origen y la biología de los tumores malignos, Ars med., Barcelona 10: 370–400, 1934.

Unimportant paper containing nothing new.


The author states that "a cancerous condition may be created by (a) protracted enzymatic inhibition (dietary and culinary enzyme deficiency, adverse industrial conditions, etc.) leading to abnormal glycolysis and resulting in the production of carcinogenic bodies,—hence cancerous cell proliferation—and (b) introduction of carcinogenic substances with consequent enzyme inhibition inducing an anomalous metabolic course favouring malignant growth." Most of the paper is written in this style. It contains no new observations, and apparently is meant to advocate the ingestion of yeast, and of methylene blue and other sulphur-containing substances.

F. CAVERS

Origin of Cancer and Other Tumours, from a Biological Point of View, C. M. MOULLIN. Med. Press & Circ. 189: 36–38, 1934.

This contains no new observations or theories.

F. CAVERS


Report of an admirable lecture read before a mixed medical and lay audience. The author sticks to ascertained facts and indulges in no theorizing.

F. CAVERS


This is a general discussion of various environmental factors which have been incriminated as being concerned in the etiology of cancer. It contains nothing new.

F. CAVERS


The author expresses doubt whether certain limited statistics have really proved that smoking and the drinking of alcoholic beverages play any part in the etiology of cancer. In fact, his answer to the question he raises is in the negative, apart from certain occupations in which definitely carcinogenic substances are handled or inhaled.

F. CAVERS
GENERAL CLINICAL AND LABORATORY OBSERVATIONS


The author points out that the term precancer can be strictly applied to a phase in the development of malignant disease in which the cell has already undergone irreversible deviations from the normal but has not yet begun to manifest the property of autonomous growth which is characteristic of malignant cells. There is at present no known specific morphological character by which a single malignant cell can be distinguished from a normal cell, and a fortiori we have no morphological criterion of a precancerous state. The latter term can be used only in a retrospective sense, just as one may speak in retrospect of a pre-war period of strained relationships between nations, which may but do not by any means always end in actual warfare. The term precancerous is rather loosely applied to a great variety of lesions simply because in a certain proportion of such lesions, often extremely small, cancer arises after a longer or shorter interval. Were reliable statistics available, one could draw up a long list of lesions to which this term has been applied, in the sense that cancer has arisen on the basis of such lesions with frequencies of from perhaps 10 per cent down to a small fraction of 1 per cent. We know now that it is as irrational to term chronic mastitis, for example, a precancerous state as to speak of every form of nephritis as pre-uremic.

If every lesion that has been known to become the site of carcinoma must be prophylactically treated, then gastrectomy must be done not only for all peptic ulcers but also for every form of gastritis, and surgical intervention is indicated for hepatic cirrhosis. Without carrying prophylaxis to these logical extremes, however, it is certainly better to err on the safe side and to treat as thoroughly as possible every kind of superficial and readily accessible lesion which has been known, even though in a small percentage of cases only, to become later the site of malignant disease.

F. Cavers


The author's argument runs thus. The mortality from tuberculosis (by which phthisis is meant) has for some years past been decreasing; the mortality from cancer has shown a rapid and considerable increase, not accounted for by increased average longevity or improved diagnosis; therefore the increase in deaths from cancer and the decrease in deaths from phthisis are definitely related to each other. Yes, but how? The author's answer is that "cancer is in most cases caused indirectly by the tubercle bacillus and directly by the consequent lymphocytic reaction." He claims that by inoculating mice with minute doses of virulent tubercle bacilli he has produced "leukämic conditions, neoplasms and ulcers near the pylorus," and that these lesions were "associated with an intense lymphocytic infiltration, parts of which appear to offer suitable conditions for the exhibition of Warburg's phenomenon of oxygen starvation and the development of malignancy." [The first sentence here cited represents the "recent work on the causation of cancer" to which the author refers in the title of his paper; the second is simply incoherent nonsense.]

F. Cavers

Gastric Acidity in Patients with Cancer (Excluding Gastric Cancer), B. Dahl. L'acidité gastrique chez les cancéreux (les cancers de l'estomac exclus), Acta med. Scand. nav. 81: 565-570, 1934.

Reding and a few other writers have stated that the blood of cancer patients is slightly more alkaline than that of normal persons. A reduction in acidity of the gastric secretion might therefore be expected to occur in cancer patients. In studying this question it must be borne in mind that lowered gastric acidity occurs in normal persons, with advancing years. The author determined the total acidity and the amount of free hydrochloric acid in 27 men and 73 women with carcinoma of various sites, excluding the stomach. On comparing the results with those published by writers who have investigated gastric acidity in thousands of normal persons, the author finds that in each age group there is no appreciable difference in this respect between cancer patients and normal patients.

F. Cavers

The author briefly reviews some of the various theories of the nature and genesis of teratomas, and points out that progress in the knowledge of these tumors would be hastened by the avoidance of hypothesis and by closer study of their actual structure and mode of growth. He emphasizes the need for thorough examination of the topographic distribution of tissue throughout the entire teratoma. He has examined 14 of these tumors by serial section, the study entailing the scrutiny of more than 2000 sections cut from 373 paraffin blocks. He has found the identification of many of the tissues a difficult matter, necessitating control comparisons with normal tissues, both adult and fetal at different ages, much tedious tracing of tissue relationships over wide areas through series of sections, and the employment of a variety of special staining methods. In two cases he found definite renal elements, as in a case recently reported by Nicholson (Guy's Hosp. Reports 84: 140, 1934. Abst. in Am. J. Cancer 23: 138, 1934). He agrees with that writer in denying emphatically that a teratoma can be interpreted as representing a distorted fetus. Teratomas show no signs whatever of axiation, metameric segmentation, or delimitation of germ layers. They possess no organs or true somatic regions, and they are characterized by multiplicity of certain constituents, anomalous absence of particular tissues, and abnormal tissue relationships and mixtures. Unless accompanied by hair follicles or cutaneous glands, stratified epithelium cannot be identified as epidermal, since squamous metaplasia frequently occurs in the glandular components of teratomas. More than forty excellent illustrations, mostly from photomicrographs, accompany the paper.

F. Cavers


The author describes 42 cases of fibrosarcoma of the extremities collected from three New York hospitals and from the recent literature. There were 36 fibrosarcomas, 3 fibromyxosarcomas, and 3 myofibrosarcomas. The tumors involved the lower extremity in 27 cases and the upper in 15. Recurrence after surgical treatment was noted in 19 or 45 per cent of the cases, but the rate may be considerably higher, as the follow-up data are incomplete. Recurrences may be local and manifest themselves first by a rapid enlargement at the site of the primary tumor or they may appear in another area of the same extremity. In the latter case the recurrence is always proximal to the original lesion. Almost invariably histologic study of a recurrent growth when compared to the primary gives evidence of an increased grade of malignancy. Often a primary tumor diagnosed as a benign fibroma presents an active malignant cellular structure when a local or adjacent recurrence is examined.

Simple excision of the tumor was performed in 20 cases, while in 5 excision and irradiation were employed. The author is of the opinion that the most favorable therapeutic method at present available consists of preoperative irradiation, excision, which must be wide and thorough, and postoperative irradiation of sufficient intensity and duration. The end-results secured in the treatment of this group of patients are not given. Analyses of the 42 cases are included in tabular form. There are no illustrations.

Benjamin R. Shore


Three cases of chordoma are reported in which the nature of the tumor was histologically established.

(1) A man of thirty-three had increasing hoarseness for six months and dysphagia for three months. The soft palate was drawn up and deviated to the left, the tongue deviated to the left on protrusion, and there was dropping of the left shoulder with wasting of the trapezius and sternomastoid muscles. At operation a firm encapsulated tumor was found between the spinal cord and the foramen magnum, compressing the left hypoglossal nerve. The patient died next day; necropsy showed basisphenoid chordoma.

(2) A man of twenty-six had a tumor below and behind the left ear, noticed seven months previously and causing pain on mastication; there was a smaller tumor, similarly situated, on the right side. Biopsy showed chordoma. X-ray examination was negative, but it is assumed that the tumor arose in the basisphenoid region, or in the upper
cervical spine, and extended forwards. X-ray treatment had been started at the time of reporting.

(3) A man of sixty, with nasal obstruction and dyspnea, had a large retropharyngeal tumor. This was incised and its contents removed piecemeal; here also the tumor appeared to have arisen in the clivus region and extended into the pharynx. There are no illustrations.

F. Cavers


A woman of forty had numerous angiomata on the face, in the oral cavity, and on the legs. Multiple hemorrhages resulted in secondary anemia, ulceration, and sepsis with a fatal termination. At autopsy similar angiomata were found in the intestines, liver, urethra and bladder. No family history was recorded.

A man of thirty-eight had had repeated nosebleeds since childhood. Examination showed angiomata of the nasal mucous membranes, mouth, and cheeks. A careful family history suggested that the disease was hereditary, apparently a Mendelian dominant but not sex-linked.

A fifty-one year old woman had suffered for several months from nosebleeds. She showed many angiomata about the mouth and on the finger tips, and a marked secondary anemia. She died from "anemia, ascites, and anasarca." Again the family history was suggestive of a dominant non-sex-linked hereditary tendency to angiomata.

These three cases were probably examples of multiple hereditary angiomata as described by Osler and usually classified under the name of Rendu-Osler-Weber's disease.

Gray H. Twombly


This is a general discussion of the histologic grading of malignant tumors and the part that such grading plays in prognosis. The author reviews the well known facts that undifferentiated and radiosensitive tumors may be extremely malignant, metastasize early, and cause death. The presence or absence of metastases in the regional lymph nodes and other parts of the body is of far greater importance in the prognosis of tumors than is the histologic grading. The article is without illustrations.

Benjamin R. Shore


In 60 cancer patients who were treated by x-rays the author found that the average urinary pH before treatment was 5.65, and that after treatment it shifted to the acid side and averaged 5.6, the figure obtained for normal persons being 5.56. Analysis of the author's tables shows that the result of treatment was to raise the proportion of determinations giving values between pH 5 and 6 from 72.41 to 75.57 per cent. Expressed in another way, the algebraic index of the variations was -0.08. Allowing for this, the urinary pH remained unchanged in 42.17 per cent of cancer cases following x-ray treatment, was lowered in 38.55 per cent, and was raised in 19.28 per cent. That is, the determination of urinary pH of cancer patients is quite valueless for prognosis following irradiation. The author's results are in general agreement with those of Dupont and Dallongeville and of Cayla et al. (see absts. in Am. J. Cancer 18: 418, 1933; 21: 878, 1934).

F. Cavers


Observations on 45 individuals with cancer showed in general that the plasma chloride was low, probably owing to the poor general condition of the patients. While the cell
chloride and the ratio of cell chloride to plasma chloride were high. Observations on 8 cases during radiation therapy showed a decrease in plasma chloride and cell chloride, marked hypochloruria, and fixation of chloride in the irradiated tissues.

H. Q. Woodward

Changes in Vessels of a Sarcoma after X-Ray Irradiation as Shown by Arteriography, 

The blood vessels of a sarcoma examined by arteriography show that the nutrient arteries of the tumor are always formed from the normal nutrient vessels of the host.

A man fifty-four years of age had a large sarcoma in the left thoracic wall. The tumor was irradiated twice in two weeks, but by the end of the fifth week had not distinctly decreased in size. At this time arteriography showed that the nutrient artery was formed by the thoracic branches of the thoraco-acromial artery, the lateral thoracic artery, and the thoraco-dorsal artery. The acromial branch of the thoraco-acromial artery, the posterior circumflex humeral artery, and the profunda brachii were not involved in the nourishment of the sarcoma, although they were as well developed as the nutrient arteries. Two weeks after the first arteriogram the tumor showed a decided decrease in size. A second arteriogram revealed a distinct decrease both in the nutrient arteries of the tumor and in those arteries which were not involved in the nourishment of the sarcoma. Four days later the patient died. Sections of the tumor showed a polymorphous-cell sarcoma. The change in the vessel-picture after x-ray irradiation is identical with the condition existing after the operative removal of a sarcoma.

K. Sugira

Significance of Giant Cells in Tumors, M. Bastos, J. d’Harcourt and L. Mazo.
Significación de las células gigantes en los tumores y morfología de los tumores de células gigantes, Arch. esp. de onc. 3: 431-472, 1933.

The authors have made an extensive histologic and cytologic study of the giant cells occurring in various tumors and granulomas. Their main conclusion is that giant-cell neoplasms are not histogenetically related, since giant cells may arise in many different ways in lesions of many different types. Forty-four good photomicrographs accompany the text.

F. Cavers


The author discusses in a general way some of the syndromes produced respectively by hyperfunction and hypofunction of the pituitary, suprarenal, and sex glands.

F. Cavers

DIAGNOSIS AND TREATMENT


The author emphasizes that in diseases of parasitic etiology the demonstration of the parasite or a positive result of an absolutely specific reaction in the infected organism furnishes a diagnosis comparable with a mathematical or logical conclusion based on sound premises. Many other diseases are definable by deduction, not from a demonstrable etiologic agent but from more or less reliable though empirical observation over a long period of time; to this group belongs malignant disease. It is hardly exaggerating to say that clinical, experimental, and biochemical investigation of malignant disease has not yet resulted in any real advance on the simple empiric definition of the nature and growth of tumors given by Virchow some seventy years ago. We have still no absolute criterion, morphological, biochemical, or physicochemical, for the diagnosis of cancer in its very earliest stages. It has not yet been established that a cancer cell differs from a normal cell in staining capacity, form and size of the nucleus, nucleolus,
or cytoplasm. Setting aside the undoubted fact that some tumors are clinically benign though histologically malignant, and vice versa, the author states that any of these so-called cytologic criteria of malignancy can be matched in normal cells. For instance, a megakaryocyte from a normal tissue is indistinguishable from a carcinoma cell according to the criteria of MacCarty, while plasma cells show cytoplasmic structures corresponding to the stegosomes which Lipschütz believed to be peculiar to cancer cells. On the other hand, the author considers that while cancer cannot be diagnosed from cytologic characters alone, it is easily recognized by the signs of autonomous growth which may be present in an extremely small commencing carcinoma, for instance in the vaginal portion of the uterine cervix. He claims, moreover, that it is possible to detect early carcinoma, at any rate in this site, at a stage when the growth is superficial and the tumor cells have not yet begun to invade the deep tissues. [It is interesting to note that in several points the author has changed the position regarding the cytologic diagnosis of small carcinomas which he has maintained until recently (see Abst. Am. J. Cancer 23: 674, 1935). No mention is made in this paper of the iodine test for glycogen, which has been made much of in the author's previous publications.]

F. CAVERS


The primary value of punch biopsy as compared with formal surgical biopsy lies in the elimination of an operative procedure with its concomitant dissemination of tumor cells. Punch biopsy is particularly valuable in the diagnosis of tumors of the breast and bones, but it should not replace surgical biopsy in breast tumors made in the operating room with preparation for a radical mastectomy if the specimen proves malignant. In some cases, however, the patient will not consent to surgical biopsy, and in these the punch method offers a means of diagnosis which is usually accepted and is far superior to aspiration biopsy. Friedman reports his results with the method in 68 cases of suspected tumors in various locations. For comparison these are tabulated as follows:

<table>
<thead>
<tr>
<th>Location</th>
<th>Number of Cases</th>
<th>Positive results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bone tumors</td>
<td>17</td>
<td>14 (82 per cent)</td>
</tr>
<tr>
<td>Metastatic carcinoma of bone</td>
<td>8</td>
<td>7 (87 per cent)</td>
</tr>
<tr>
<td>Tumors of the breast</td>
<td>14</td>
<td>11 (78 per cent)</td>
</tr>
<tr>
<td>Cervical nodes</td>
<td>14</td>
<td>9 (64 per cent)</td>
</tr>
<tr>
<td>Miscellaneous tumors</td>
<td>15</td>
<td>13 (86 per cent)</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>68</strong></td>
<td><strong>54 (80 per cent)</strong></td>
</tr>
</tbody>
</table>

As will be gathered from these figures, the diagnosis of enlarged cervical nodes is less successful than of other lesions. For this reason the author advises the surgical removal of an entire node when the diagnosis of Hodgkin's disease or other lymphadenopathy is in question.

The technic is described and illustrated by a diagram of the apparatus. There are seven other illustrations, a number of which compare the histological appearance of the tumor with the roentgenographic findings. A short bibliography is included.

THEODORE S. RAIFFORD


In a study of 70 cases of malignant disease, acceleration of the sedimentation time and the persistence in the blood stream of the usual number of normally segmented leukocytes appeared to be constant findings. It is suggested that these criteria may be useful in the diagnosis of cancer.

BENJAMIN R. SHORE


This paper includes an excellent resume of the recent literature pertaining to the serological study of malignant growth, including mainly the work on antigens and anti-
bodies, and the relation of the reticulo-endothelial system to cancer. Most of the work has been carried out upon experimental animals with few observations upon human beings. There are no illustrations. 

Theodore S. Raiford


The first of these papers contains nothing new. The author classifies various serologic tests, according to the different blood changes that have been found to occur in proved cancer, but the classification is clumsy and overlapping, and nothing is said to indicate that every one of these serum changes has been demonstrated in diseases other than cancer.

In the second paper, coming from the same institute, the authors select for study the well established increase in the globulin-albumin ratio which has been found in the sera of cancer patients (and also in those suffering from various non-malignant chronic diseases, and at times in normal persons). They used three methods of precipitation—Wigand’s (tannic acid), Lange’s (silver nitrate), and Botelho’s (nitric acid)—first separately and then in combination, on 60 cancer patients and 46 normal persons. Each of these methods they “improved” by the simple devices of adjusting all the sera to the same small serum protein content and by reducing the number of indicator tubes to three for each serum tested. All doubtful results were thus eliminated, and in every case the reaction is said to have been absolutely positive or absolutely negative! Correct results are claimed in 95 per cent of the cases.

[This paper is a severe satire on the serodiagnosis of cancer. Equally high successes have been claimed for the most refined methods of serum protein precipitation, depending on a series of shades of turbidity or coloration in a long row of indicator tubes. Apparently all that the authors have done is to reduce the series to the middle shades, just those in which the reaction would by unbiased observers be interpreted as doubtful, feebly positive, or feebly negative, and therefore of no practical value. That is, the crudest and the most refined methods give serodiagnostic results of the same order of reliability.]

F. Caverra

A Modified Lipoid Flocculation Test for the Serodiagnosis of Cancer, R. Ibañez. Estudios sobre serología del cáncer. I. Fundamentos y primeros resultados de una nueva reacción para el serodiagnóstico del cáncer, Arch. españo. de oncol. 3: 245-256, 1933.

The author uses as antigens petrol extracts of serum of patients with cancer and other disease and of healthy persons. To these extracts cholesterol is added as a sensitizer. Untreated sera from cancer and non-cancer patients and normal persons are added in turn to these three extracts. Three degrees of positivity are tabulated, ranging from slight turbidity to dense flocculation. Cancer sera gave flocculation, in a high (unstated) percentage of cases, with all three extracts, and also with similar extracts of normal rabbit serum; as a rule the flocculation was more intense with the non-cancer extracts. In a lower percentage of cases the serum of cancer patients gave flocculation with extracts of their own serum. Normal sera, on the other hand, very rarely gave flocculation with any of the extracts. [Although this is said to be a preliminary paper, the results reported do not support the author’s claim that his method is likely to prove valuable in the diagnosis of early cancer.]

F. Caverra


Using an interferometric modification of Abderhalden’s reaction, the author tested the blood of 20 cancer patients and 20 other individuals, mostly normal. The results were correct in 32 cases, incorrect in 7, and doubtful in one, being accurate, therefore, in 81 per cent.

F. Caverra
DIAGNOSIS AND TREATMENT


The author reports a series of 8 treated cases in which the Bendien test as modified by him was made at fairly frequent intervals for at least two years. In four cases the malignancy reaction became increasingly positive after operation, and ultimately recurrence or metastasis took place. In two interesting cases the positive reaction curve fell for a time after operation and then rose again, though at the time of reporting there were no clinical signs of malignancy. "The serum findings in these two cases suggest that if there is any way of re-establishing a normal serum lipid content and an associated normal lipolytic enzyme activity of the serum, the prognosis in these cases would be infinitely better." In the two remaining cases, one treated by operation and one by radium, the clinical condition was satisfactory, and in both the positive serum reaction had become negative; in one case the reaction was actually lower than normal. The results are clearly set forth in a series of graphs.

F. Cavers


The diagnostic method here described depends on the observation that cancer serum albumin is fixed by an antibody present in normal guinea-pig serum, with the formation of an alcohol-soluble decomposition product which can be detected by means of ninhydrin. The normal component is inactivated by heating to 63°C, but the cancer component is not. The test is somewhat similar to the Freund-Kaminer reaction. The method is simple, and gave correct results in 66 out of 94 cancer sera (70 per cent), and in 296 out of 321 normal sera (92 per cent).

H. Q. Woodard


It has been shown in recent years that the injection of hormone from the anterior hypophyseal lobe stimulates the thyroid gland, and the serum of pregnancy is said to elicit a similar epithelial proliferation and polymorphism of the follicles.

There is another method, besides histological examination, of demonstrating overactivity of the thyroid. This is the Reid Hunt test—increased tolerance of mice to acetonitril following the injection of blood from patients with hyperthyroidism. Serum from pregnant women has been found by some investigators to afford such protection, while others deny that it will do so. In view of these discrepant reports the author has repeated this characteristic test with serum from normal pregnant women and patients with eclampsia or genital carcinoma, as well as with extracts of the urine of pregnancy. His results definitely showed the presence of the thyroid-stimulating component of the anterior hypophyseal hormone in all but the patients with cancer. Wm. H. Woglow


Radical operation and postoperative irradiation are recommended for all operable carcinomas, while primary irradiation is to be reserved for those tumors which are mechanically inoperable. This outline of treatment is based upon a study of 2321 patients with cancer seen during the past twenty-three years at the University Surgical Clinic in Greifswald.

Benjamin R. Shore


Ninety-five patients with carcinomas were interviewed in an effort to elicit the factors causing delay in surgical treatment. The series included 41 carcinomas of the
female breast, 19 of the rectum, 10 of the sigmoid colon or splenic flexure, 8 of the stomach, 6 of the cecum, 5 of the oral cavity, and 6 miscellaneous tumors. The time lost between the onset of symptoms and adequate treatment varied from four days in one case to seven years in another. Where the time between the onset of symptoms and admission to the hospital was two weeks or less, it seems fair to assume that no real delay occurred. There were only four such cases in this group. In two other patients the duration of symptoms was only three weeks and in two more only four weeks. The average duration of symptoms for the whole group was 11.6 months.

The responsibility for the delay was attributable to the patient, to the physician, or to both in 70 cases, or approximately 74 per cent of the whole group. It would seem, therefore, that cancer propaganda for the lay public must be made much more effective if patients are to be expected to seek medical advice at an earlier date. On the other hand, this will be of no avail unless even more strenuous propaganda be carried out in the medical profession in order to get the general practitioner to suspect cancer more frequently and to refer the suspected case to a surgeon or a hospital qualified to diagnose and treat the disease. Detailed analyses of the various types of tumors and their sites of origin are included.

Benjamin R. Shore


The author, who is on the staff of the Röntgeninstitut of the University of Zurich, under Professor H. R. Schinz, has had a long experience in the therapy of tumors of the upper air passages. His technique involves diminishing the rate of giving the radiation to about 2 to 3 r per minute. This is accomplished by the use of 2 mm. copper filter and an increase in the focal skin distance to 75 cm. as a maximum. The total dose at a sitting is from 90 to 180 r, given twice a day, with the exception of Saturday, when one treatment is given, and Sunday, when no treatments are given. The exposures are continued until a sharp reaction is obtained on the skin and the mucous membranes.

This general technic, however, may require considerable modification. In the first place, there are carcinomata which will respond to almost any radiation technic, but the statistics of Coutard, Holthusen, Schinz, and Zuppinger have shown that the method of prolonging the radiation by reduction of the rate per minute and repeated daily exposures gives far better results not only in the sensitive tumors but in those which do not respond to the ordinary rapid technics. However, experience indicates that it is necessary to produce the correct mucous membrane reaction and to sustain this reaction over a given time in order to get permanent results.

While for a long period the skin tolerance dose was regarded as the maximum permissible with the type of treatment under consideration, this is no longer the case, for it has been shown that a single skin field may bear 8000 r measured on the skin or 14½ skin doses. In general, however, skin fields do not have to be exposed to this extent because, as a rule, two or more fields can be used, thus diminishing the amount received by each. Such heavy doses, however, are obtainable only by the choice of a suitable rhythm in the treatment, and the application of a treatment to one patient because it produced a satisfactory result in another is not permissible. For example, there are great variations in the skin sensitivity. Emaciated patients are less sensitive than fat ones, and the latter frequently show early reactions, a disadvantage which is demonstrated especially in those who are very full-blooded. The sensitivity of the mucous membrane, furthermore, may vary from that of the skin. It is almost impossible to predict the time of appearance and the course of a radio-epithelitis. Many patients who show a marked mucous membrane reaction have a minimal skin reaction. On the other hand, cases are often seen in which no mucous membrane reaction is observed, but in which severe skin damage appears later.

The author has found that there is a certain degree of parallelism between the sensitivity of the mucous membrane and that of the tumor. Most of the neoplasms which are sensitive arise from the mucous membrane or the submucous layer which exhibits an early reaction. In cases of lymphosarcoma an early and fair mucous membrane reaction has frequently been observed while the skin showed no change. These
relations are not so striking in the case of carcinomata, but it has been noted that the cauliflower-like carcinomata which usually show a fair degree of sensitivity may also exhibit early and extensive mucous membrane reactions and under these circumstances the skin reaction may remain minimum. Inversely, examples of infiltrating carcinomata, especially when this infiltration has extended into the muscle, have a late mucous membrane reaction and the tumor shows a correspondingly low sensitivity to radiation.

The question has been asked whether the mucous membrane reaction is essential for the cure of a tumor, and for a long time the answer was in the affirmative, but Sarasin believes that this is not absolutely essential, for he has obtained permanent disappearance of the tumor with minimal mucous membrane reaction and nothing abnormal on the skin, even though the dose was $8080 \text{r}$ measured in air given in thirty-three days. The lesion of the mucous membrane begins commonly with a necrotic coating on the tumor itself. This extends first in the immediate neighborhood of the growth, then to the neighboring mucous membrane, and finally to the whole irradiated area. The reaction begins as a false membrane of a grayish-green color and should not be very thick, but it is very important that the different areas ultimately fuse with each other. It is a disadvantage to have too strong a reaction, because this interferes with the swallowing mechanism. The general condition of the patient goes somewhat parallel with the intensity and persistence of the mucous membrane reaction. When this is too severe, the patient shows a rapid loss of weight, often amounting to several kilos per week.

The skin reactions as a rule appear later, generally thirty to thirty-five days after the beginning of the treatment, vary considerably in their depth, but are often no clue to the proper carrying out of the dosage, which depends far more on the mucous membrane appearances. The skin will stand very large exposures; $7000 \text{r}$ measured in air can be given without an exudative reaction, and the regeneration of the epithelium rarely takes more than ten to twenty days. Some edema may remain for several weeks, but this is probably due to improper rhythm of the treatments. Late results in the skin are very rarely observed. It may be somewhat atrophic and dry; a slight pigmentation is not infrequent. Telangiectasia is not produced, and late injuries of a severe degree have not been seen in ten years' experience with the method.

While the author's experience leads him to agree with Coutard, that the reactions of the skin and mucous membrane are of the greatest importance in the treatment, it is absolutely true, as Coutard says, that the chronology of the radiation must be adapted to the tumor and to the normal tissues about the tumor. In fact, Coutard lays great stress on the importance of sustaining the normal tissues as much as possible, in order that they may bring nutrition to the tumor and keep it radiosensitive by the multiplication of the cells during radiation.

Sarasin further discusses some of the objectionable features of this type of treatment. While it yields results which no other method has given so far, the prolongation of the time of treatment is a heavy economic burden on the patient and also a burden on the personnel and necessitates, if many patients are to be treated, a very much larger equipment than is required for the old-fashioned rapid exposures of a few minutes. On the other hand, such prolonged treatments do not cause as much damage to the patient's general condition as the more rapid method, and the total duration of the disease until the patient becomes capable of work again is not greatly prolonged. In addition, the danger of late injuries and other complications is greatly reduced by the dilution of the dose. The skin reactions are a considerable burden, but these are incidental to any complete radiation therapy. Damage to the salivary glands is often extremely annoying. The author thinks that the skin injury may be diminished and the tumor favorably affected by the application of short waves, and he has also found that the skin reaction may be diminished in severity by the application of infra-red rays given for five to fifteen minutes per day over the irradiated area. These infra-red rays do not penetrate the tissues and therefore do not influence the tumor. Illustrative cases are cited and four photographs of patients show the various stages of the skin lesions.
High-voltage (200 kv.) versus Super-voltage (700 kv.) X-ray Treatment of Carcinoma,

The chief arguments in favor of very high voltages in radiotherapy are that the shorter wavelengths generated by them have a greater differential effect on tissues than the longer waves, and that they make possible greater depth doses. In regard to the first point the author cites his own observations, and those of others, to demonstrate that the clinical effects are not different from those produced by ordinary voltages. Secondly, the advantage of the greater depth doses is very slight. With 200 kv. x-rays with high filtration, the 10 cm. depth dose can be greatly increased merely by increasing the focal distance. When this is done the intensity is much reduced, an advantage when the Coutard method is employed. It may be increased by using oil-cooled tubes running at 30 ma. Thus the 200 kv. machines, when properly used, have practically all of the advantages claimed for super-voltage x-rays.

Charles Packard


Six pages (138–143) of this monograph are devoted to the effect of short waves on tumors. In man they have so far proved ineffectual or even deleterious, the favorable results sometimes attained with the transplantable tumors of mice and rats not yet having been duplicated. However, all the possibilities have not been exhausted. Investigations on propagable animal tumors suggest that the most favorable wavelength lies between 3.3 and 3.7 meters, a region which appears to exert a specific effect and in which a change of so little as 10 per cent of the wavelength will alter the biological result. Waves of this length strongly inhibited anaerobic glycolysis in animal tumors and in the one human carcinoma tested. Thus their effect is exactly opposite to that of x-rays and radium, for while these first damage the cell and only secondarily interfere with its metabolism, the ultra-short waves seem to inhibit metabolism immediately and to damage the cell secondarily.

It is possible that waves of this length may prove to be of value in the treatment of human patients.

Wm. H. Woolom


The author believes that the superficial or intra-epidermal carcinomas, including the so-called benign epitheliomas, are not precancerous lesions, but differ from the more usual carcinomas of the skin only in that their intra-epidermal growth is prolonged, and that, although they may at the same time proliferate within the cutis, leading to tumor formation, they may never do so, or they may undergo partial or complete atrophy, that is spontaneous regression. Ordinary cutaneous carcinomas originate intra-epidermally, but proliferation within the cutis with tumor formation so rapidly supervenes that their lateral intra-epidermal spread is soon obliterated, though this process can be detected if they are examined at an early stage. Paget’s disease, Queyrat’s erythroplasia, and Bowen’s dermatosis are variants of one and the same condition, for which the author proposes the term psoriasiform carcinoma because the lesions so frequently simulate clinically a psoriatic plaque. The histologic picture is that of a variable degree of hyperplasia of the epidermis, especially of the rete, with increase in length, and often also in breadth, of the interpapillary processes, which may result in obliteration of the papilla, though the basal layer usually remains well defined throughout.

The author reports 11 cases, to illustrate the fact that the superficial carcinoma may be either intra-epidermal or intra-epithelial; in the former case the neoplasia affects the epidermis alone, in the latter there is neoplastic proliferation within the sweat ducts and glands. Paget’s disease of the nipple is usually an intra-epithelial carcinoma affecting the mammary ducts as well as the skin of the nipple, but it may occur as a purely
intra-epidermal form. Extramammary Paget's disease is usually intra-epidermal, but in the rarer cases it involves sweat glands and ducts, becoming intra-epithelial and corresponding to the usual mammary type. The histologic evidence seems to suggest that these carcinomas may spread by a process of cancerous metaplasia, not merely by permeation of tumor cells into the surrounding healthy epidermis. There are ten good illustrations.

F. CAYERS


This paper is based upon 1,713 epitheliomas of the skin treated during the past thirty-four years, with only 17 deaths from cancer. The authors advocate the early removal of the so-called precancerous lesions, moles, warts, abnormal crusts, fissures and chronic ulcers. Individual epitheliomas are treated first by electrodesiccation, and a biopsy is done, followed by a full erythema dose of x-rays or surface application of radium. If the biopsy shows squamous-cell carcinoma, the neighboring lymph nodes are treated by filtered radiation and, according to the location, by high-voltage x-rays, not less than 200 per cent of an erythema dose being given in divided doses. Multiple epitheliomas, or Bowen's disease, may sometimes present an astonishing number of lesions. One case is cited in which excision of 98 lesions was followed by complete recovery. Basal-cell epitheliomas may be papillomatous or of the rodent ulcer type. Although metastases are rare, occasional involvement of underlying bone or cartilage imparts a resistance to treatment not usually observed in the superficial growths. Some of these cases react well to irradiation alone, while in other instances it is advisable to destroy the lesion by electrodesiccation and resection. The use of x-rays and radium must be adapted to each individual case according to the conditions present. In general, however, it is better to administer the entire dose within a few days or weeks, as failure is apt to follow prolonged treatment or insufficient dosage. There are eight illustrations, each of which depicts a typical lesion before and after treatment.

THEODORE S. RAIFORD


The authors discuss the treatment of skin lesions under two headings: congenital anomalies and acquired conditions. In the former group are the vascular and fleshy nevi. Nevus vascu-losus responds particularly well to radium and carbon dioxide snow, and the slight scarring that results is usually not objectionable. Radium may be applied in the form of a glazed plaque or in tubes of the element or radon, the surrounding skin being protected by a screen of lead foil. In the treatment of cavernous hemangiomas radium is the method of choice. To prevent undue scarring, a 0.5 mm. brass filter is used or radon seeds are implanted directly into the tumor. It is better to lean toward insufficient radiation, since the treatment may be repeated if necessary. For fleshy nevi radiation is contraindicated, as their destruction requires a dosage sufficient to cause dangerous post-irradiation effects.

Among the acquired conditions, keloids are perhaps the most common. Radiotherapy either alone or in conjunction with excision is the treatment of choice. Ver-rucae of all types are often treated by radium but are better managed by other means. Among the few suitable for radiation are plantar warts and those occurring under and close to the finger nails. These are most conveniently treated with a 5 milligram plaque for an hour. The synovial cysts occurring near the joints in people exhibiting manifestations of hypertrophic arthritis are best treated by excision and evacuation followed by a single exposure of radiation, which usually suffices to prevent their recurrence. In these cases the roentgen ray is just as effective as radium. Epulis responds better to electrothermic surgery than to radiation, with the exception of the vascular type which may occur between the teeth. In these the radium plaque may give more satisfactory results.

There are no illustrations and no bibliography.

The author emphasizes the importance of early treatment of every pigmented or hairy nevus, since some of these lesions may give rise to malignant melanomas. To destroy the hairs he uses diathermy, claiming that this is more rapid and effective than electrolysis and requires fewer sittings. For the destruction of the pigmented cells he prefers electrodesiccation. Photographs are given of a patient treated by diathermy twenty-seven years previously for a facial nevus, with a perfect cure.


The authors report 8 cases of carcinoma (7 squamous-cell, one transitional-cell) arising on lupus erythematosus. The lupus had been treated by heliotherapy combined with solid carbon dioxide and in one case with thorium X, and in a second with x-rays. The supervening carcinomas was treated by the following methods: (1) x-rays (Pfahler technic), followed by radium; (2) x-rays, (Pfahler), solid carbon dioxide, and galvano-cautery; (3) thorium X, then x-rays (Coutard technic); (4–7) contact radium; (8) x-rays (Coutard). In every case the treatment was followed by good immediate results, but the carcinomas recurred and was retreated in several cases. The interval between the first appearance of the lupus and the recognition of cancer varied from one to thirty-five years.

The authors give a table of 107 case reports from the literature, to emphasize the point that the supervention of carcinoma on lupus erythematosus does not apparently depend on the method of treatment of the lupus, since the proportion of cases was equally high among treated and untreated cases. In the cases in which the lesion was histologically examined, there were only 4 basal-cell carcinomas, the other being squamous. Metastases to lymph nodes are extremely rare. Of 85 cases in which the sex is stated, 51 were in men and 34 in women.


The authors report the case of a sixty-year-old woman in whom a prickle-cell epithelioma developed after roentgen therapy of unstated amount for lupus erythematoses of the left cheek. The patient has remained well for one year after excision of this lesion. One photograph of the gross lesion is included.


The author reports two cases of multiple tumors arising on chronic atrophic acrodermatitis of the extremities. In the first case the growths were diagnosed as sarcoma (no histologic description); they had first been noticed seven years previously. In the second they were squamous-cell carcinomas, and were of several years' duration. In each case the tumors were widely excised. There are six illustrations, but none of them shows the microscopic characters of the tumors.


A woman of forty had for many years been taking bromides regularly for epilepsy. A few years before being seen by the author she noticed small red "pimples" which grew larger and spread over the greater part of the body. Each had soon become covered by a gradually thickening crust. Below the crusts were erosions and slight infiltrations, histologically diagnosed as Bowen's carcinoma. The larger, earlier lesions responded to x-ray treatment; the innumerable small psoriasiform lesions were being destroyed by carbon dioxide snow. The author, replying to a question on this point, said that he had not ascertained whether the bromide mixture contained arsenic.

Microscopic examination of a condyloma removed from the vulva of a twenty-year-old woman demonstrated atypical changes in the arrangement and character of the epithelial cells. The basal cells were larger than normal and irregular in shape, and the nuclei were large and round. Mitotic figures were frequent. These changes were interpreted as indicative of early carcinomatous change in the previously benign condyloma. There are five illustrations and a short bibliography.

Theodore S. Raiford


A man of seventy-five had had his right index finger amputated four years previously for ulcerated squamous-cell carcinoma, and had recently noticed a lump in the right axilla. Biopsy showed this to be squamous-cell cancer. Radon seeds were inserted into the nodes, but nothing is said about the result.


The authors report the case of a nineteen-year-old patient from whom a malignant melanoma of the left scapular region and metastatic tumor in the cervical nodes were removed in 1929. An unstated amount of roentgen irradiation was given after operation. The patient has remained well and without evidence of recurrence for four and one-half years after operation. The article is illustrated with photographs and a photomicrograph.

Benjamin R. Shore


A man of unstated age had for about five years had a small red patch on the site of what was now a tumor the size of a pigeon’s egg, occupying the groove between the nose and the right cheek. The tumor had recently grown rapidly, causing difficulty in speech and mastication owing to its pressure on the upper lip. It was ulcerated, bled easily, and was covered with blackish crusts. Botryomycoma was suspected, but biopsy revealed melanocarcinoma, which was treated by electrocoagulation followed by x-rays. The result is not stated. There is one illustration.

F. Cavers


A man of seventy-nine stated that at the age of nineteen he sustained an injury to the left side of his face in front of the ear. The scar did not heal, and a slightly raised scaly reddened area gradually spread around it. The attending physician said that for several years this area had increased about 4 mm. in diameter each year. The lesion was now oval, 7 x 5 cm., and occupied the parotid region. There were slight infiltration and punctate ulceration, but no adenopathy. Biopsy confirmed the diagnosis of basal-cell carcinoma. Nothing is said about treatment.

As the author points out, this flat or cicatricial type of basal-cell carcinoma is practically benign, often growing slowly for twenty years or more before the onset of marked infiltration or ulceration, but he thinks this case can probably claim the record in respect of indolent growth. There is one illustration.

F. Cavers


In a patient, now aged twenty-six, an ulcer had appeared on the forehead seven years previously. It was treated with radium and x-rays, but had never completely...
healed. About eighteen months before the present report the patient received a knock on the head, followed by rapid spread of the lesion. The entire area was excised and the wound repaired by rotation of the scalp. The microscopic diagnosis was basal-cell carcinoma. At the time of reporting there had been no recurrence. F. Cavers


A woman of fifty-six had multiple skin lesions of varied appearance—papules, patches of flat or serpiginous form, patches studded with vesicles, crinkled lesions resembling verruca senilis, nevi, etc.—of which ten were histologically examined and all found to be basal-cell carcinomas. These extremely polymorphic lesions had first appeared about fifteen years previously. When about fifteen years old the patient had taken arsenic (Fowler’s solution) for about eighteen months. The hands and feet showed no keratoses. Examination of normal skin and the lesions for arsenic by a modified Osborne technic was negative. No so-called precancerous changes were seen in the histologically examined lesions; all were definitely carcinomatous. Soon after the lesions had appeared the patient complained of hematuria, and the bladder now showed multiple papillomas. Treatment consisted in general measures for the anemia, x-rays and radium on the lesions of the face, excision of a papilloma on the back, and silicon dioxide for the bladder papillomas. Six months later the patient still had occasional hematuria; some of the lesions on the trunk and all of those on the thigh had healed spontaneously, and the large lesions treated by x-rays or radium showed atrophy. Because of the definite tendency to spontaneous cure in many of the lesions it was proposed to treat the remainder with the patient’s serum. There is one illustration, and a short but well selected bibliography is appended. F. Cavers


Under the term naevus syringo-cystadenomatous papilliferus, the author describes a multiple lesion of the skin in a girl of eighteen years. He discusses, also, the histogenesis of various benign epithelial tumors of the skin, the terminology of which has been much confused, and points out that adenomas of the sweat glands are rather rare tumors, apparently belonging to a large and varied group of skin tumors which agree in being derived from basal cells—syringocystoma, epithelioma adenoides (Brooke), epitheliomatosis of Ormsby (buttock epitheliomas of Jadassohn), etc. All these tumors, in turn, are embraced in the wider group of nevi, being essentially of congenital origin and including vascular and pigmented varieties. Five good photomicrographs accompany the text. F. Cavers


The author reports the case of a thirty-seven-year-old man whose right leg was amputated in 1926, for a sarcoma of unstated histologic structure. In 1930 extensive tumors thought to be metastases from the leg were present in the skin and subcutaneous tissues of the scalp and in the lungs. Histologic study of a biopsy specimen from the scalp showed the tumor to be a myxosarcoma. One photograph and two photomicrographs illustrate the article. Benjamin R. Shore


The patient showing the unusual combination of multiple lesions described in the title was a man of sixty-nine. Both the myomas and the acanthotic lesions were small and were scattered over the lower half of the right shin, ankle, and foot. Though showing signs of histologic malignancy, these small leiomyosarcomas of the skin are usually benign clinically. The patient declined operation and was treated by injections of arsenic and by x-rays. He was lost sight of after a few months. There are three good photomicrographs. F. Cavers

A woman of thirty had for about three years noticed small red lumps on the left side of the forehead. These had increased in number and encroached on the scalp; they were painful and tender, especially on exposure to cold. They followed the distribution of the supraorbital nerve, and were subcutaneous myomas. F. Cavers


A woman of thirty-three had seventeen years previously had a slowly growing fibromatous tumor removed from her left shoulder. Similar tumors had recurred in the scar and been repeatedly excised. The last but one of these recurrent tumors was histologically diagnosed as fibrosarcoma. Excision had been followed by x-ray treatment and implantation of mesothorium needles. When the patient attended the author's clinic there was a further recurrence of the tumor on the shoulder, and this was widely excised. The author says the tumor had the general appearance of a spindle-cell sarcoma, but he could find no atypical cells or nuclei. No illustrations are given. F. Cavers


A woman of thirty-eight had three months previously noticed a smooth, pink swelling at the angle of the right lower jaw, and soon after this a similar plaque on the right temple. The latter had grown rapidly and was hard and lobulated, with overlying telangiectases. Numerous smaller plaques were found in other parts of the face and neck. The epidermis and upper part of the corium were normal, but below this level there was a dense mass of cells mostly in irregular arrangement but in some places grouped round the blood vessels. The cells were for the most part large and undifferentiated, with a marked tendency to vacuolation. Although most of the tumors formerly reported as multiple cutaneous endotheliomas have been shown to be of basal-cell origin, the author believes that in this case the tumors were of vascular origin. There are no illustrations.

F. Cavers


Of 82 cases of unilateral exophthalmos 24 were the result of malignant tumors and 10 were due to benign tumors. There were 9 primary and metastatic carcinomas, 8 sarcomas, and 7 cases of neoplastic disease of the hematopoietic system. Among the benign tumors there were 4 meningiomas, and one case each of glioma of the optic nerve, adamantinoma, chondromyxoma, cavernous hemangioma, neurofibroma, and granuloma. Several photographs of patients illustrate the article.

Benjamin R. Shore


A youth of sixteen years complained of almost total blindness of the left eye. Examination revealed two red cystic retinal hemangiomas, also detachment of the retina. Four months later the detachment of the left retina had become complete and retinal tumors had appeared in the right eye. As the history included attacks of headache and vomiting, a cerebellar tumor was suspected, and the suspicion was confirmed at operation, when a hemangioma, the size of a walnut, was removed from the lateral side of the left cerebellar lobe. The patient's sister had had one kidney removed for polycystic disease, but she showed nothing abnormal on ophthalmoscopic examination.

F. Cavers

A woman of forty-nine had been operated upon for a cyst of the left iris. Ablation of the anterior cyst wall was done, with recurrence six months later. The pupil was considerably deformed and vision was much reduced (6/18). Following a similar operation, recurrence again took place. There was no history of trauma. The author now proposed to do an iridectomy, because, as he said, it was possible to see through the cyst that the pigment of the iris formed its back wall. In the discussion a similar case was reported by T. Harrison Butler.

F. Cavers


A cyst of the sclera, apparently without trauma, is reported in a child of two years. It had gradually enlarged and was encroaching on the cornea and splitting its layers. The cyst was tapped, and since there was no connection between it and the interior of the globe the author excised the outer wall. In discussing this case, E. Wolff pointed out that implantation cysts of the conjunctiva can usually be dissected out easily except at the point where the implantation occurs. If only the anterior wall is removed, the cyst later recurs because some epithelium has been left behind. The author said he would adopt this suggestion and attempt complete excision of the cyst.

F. Cavers


This is a report of a non-pigmented nevus arising in the lacrimal caruncle. The patient, a forty-six-year-old woman, had some twelve months before observed a nodule, the size of a pea, in the right eye. It was removed surgically and histologic examination revealed its true nature. There had been no recurrence at the time of the report, a month later. A bibliography is included, and there is a photomicrograph of the tumor.

W. S. MacComb


A general discussion of tumors of the optic nerve with a report of a tumor of this structure in a girl seventeen years of age. Microscopic examination showed spongiophilastic glioma.

W. S. MacComb


The author gives summaries of 12 cases of orbital teratomas found in the available literature. These tumors are congenital and grow very rapidly, the child usually dying in the first few weeks of life. His own patient was a female Bengali infant brought to hospital a week after birth with a large red mass protruding from the left orbit. In the middle of this tumor the anterior half of the eyeball was seen, the posterior half being buried in the growth, and the upper and lower lids were greatly distorted. Exenteration was done. The tumor included a cyst, but was mainly solid. Serial sections revealed tissue derived from the three germinal layers—cartilage, nerves, lymphoid tissue, fat, smooth and cardiac muscle, skin, hair follicles, melanoblasts, small intestine, liver, and parathyroid tissue. The tumor had evidently arisen relatively late in fetal life, since the eyeball and the optic nerve were more or less normally developed. The child was alive and well twenty months after operation. There are eight illustrations.

F. Cavers


Xanthomatosis occurs in the form of Gaucher’s disease, Niemann-Pick’s disease, or the Hand-Christian-Schüller syndrome, and is seen, also, in conjunction with diabetes, liver disease, and pregnancy, or as a simple metabolic disturbance in old people, resulting in yellow cutaneous plaques. The various manifestations are all related and depend on an infiltration of the reticulo-endothelial cell with lipoids, chiefly cholesterol and its esters, which are existent in excess in the body fluids and are not properly excreted.
If the degeneration is slow, nodules are produced, if rapid a diffuse infiltration results. The neoplasm has three essential elements; (a) the foamy lipoid cell, the specific cell that contains the lipoid substance; (b) the inflammatory cellular exudate, the reaction of the tissue to the lipoid material; (c) connective-tissue proliferation. The etiology is unknown; but the condition may be due to excess of albumin and lipoid-producing foods. X-ray therapy is the only measure which has proved of the slightest benefit.

A case is reported of a xanthoma of the orbit in a thirty-seven-year-old female, and photographs and a photomicrograph are included. The enlargement of the eyelid in this case had first been noticed during the patient's last pregnancy, five months before. X-ray examination of the skull showed no evidence of bony change, although there was enlargement of the sella turcica. A biopsy showed xanthoma. The cholesterin value of whole blood was 342 mg. X-ray therapy was given, but little improvement resulted.

W. S. MacCombe


The author reports a case almost precisely similar to one previously described by Cushing (Surg., Gynec. & Obst. 44: 728, 1927) as follows: "Huge intracranial pneumatocele of unexplained origin exposed and emptied at operation; recurrence of pneumatocele; second operation, revealing a minute pneumatic sinus alongside an orbito-ethmoidal osteoma; closure by fascial stump; recovery." Bell's patient, a man of twenty-eight, had seven years previously sustained an injury to the forehead while playing football. About a year later the left extremities became "useless" and blurring of vision and headache occurred. During the past four years the patient had repeated jacksonian convulsions, and there was now left facial paresis with spastic paralysis of the left extremities. X-rays showed an osteoma arising from the orbital plate of the right frontal bone close to the midline and encroaching on the frontal sinus, also extensive right pneumocephalus with displacement of the falx and compression of the brain substance, the air apparently lying in the subdural space. A right frontal osteoplastic flap was turned down, revealing a tense dura. Air escaped on incising the dura, which was stripped downwards until the osteoma was reached and was chiselled off the orbito-ethmoidal junction. There are six good roentgenograms. F. Cavers


Generally speaking, radium irradiation is the best treatment for epitheliomas of the eyelid, although lesions near the center of the lid can be successfully treated with x-rays. The advantages of radium are especially seen in the treatment of tumors situated at the lid margins and those involving the canthi. Radium offers a greater margin of safety and facilitates the concentration of the treatment at the diseased area. The technic used by the author is described. Photographs of nine patients before and after treatment are included.

Benjamin R. Shore


Two cases are reported in which basal-cell cancer of the eyelid had been present for several years. In the first, in which several doses of x-rays had been given without result, 4 radon seeds of 1.2 mc. were inserted, and a year later there was no sign of disease. Three similar seeds were inserted in the second case and the patient was free from disease six months later.

F. Cavers


A general account of the pathogenesis of mastoiditis and of aural cholesteatomas, with examples to show that radiography gives valuable indications of the site and extent
of the cholesteatomatous deposits in cases where these points cannot be readily determined clinically.

F. Cavers


A sixty-nine-year-old woman had a primary prickle-cell epithelioma of the left auditory canal and involvement of the facial nerve in the tympanum. A left radical mastoidectomy was performed and the nerve was freed from the necrotic carcinomatous tissue. No improvement in the facial paralysis was observed after operation. The end result is not known. The article is not illustrated.

Benjamin R. Shore


A thirty-two-year-old woman died with the clinical signs and symptoms of mitral valve disease. Autopsy showed relatively normal valve leaflets, but a smooth, lobulated, yellowish-purple tumor which almost completely filled the left atrium. This tumor was attached by a very small pedicle to the wall of the atrium in the region of the fossa ovalis. Histologic study of the growth showed it to be a fibromyxoma.

A short account is also included, of a forty-nine-year-old man in whom a small symptomless fibromyxoma of the left auricle was an incidental finding at autopsy. The article is illustrated with photographs of the two gross specimens and a photomicrograph.

Benjamin R. Shore

THE NECK


Two cases of parotid tumor are presented. In one the diagnosis was mixed tumor, in the other myxochondrocarcinoma. Operative removal was carried out in each case, but no mention is made of the ultimate results. The necessity of first isolating the branches of the facial nerve before removing the tumor is pointed out. For a complete discussion of the newer aspects of parotid gland tumors the reader is referred to the work of McFarland (Surg., Gynec. and Obst. 57: 104, 1933. Abst. in Am. J. Cancer 20: 917, 1934). There are no illustrations.

Theodore S. Raiford


The author gives a partial account of a case in which he removed from a man of sixty-four a large, hard tumor occupying the left side of the neck and extending from the angle of the jaw to the clavicle. The period of follow-up is not stated, the tumor is not described histologically, and there are no illustrations. No evidence is adduced to show that the tumor was of branchiogenic nature.

F. Cavers


The author reports two cases of cervical fistulae and one of cervical cyst, all appearing in early life. Lipiodol radiography aided in the diagnosis, and proved almost conclusively that these lesions were of branchial origin; the two fistulas arose in the tonsillar region, the cyst close to this, behind the angle of the mandible. The most interesting case reported is the fourth, which occurred in a young bitch that had gone off her food, lost interest in life, and vomited purulent material. A lump was felt in the parotid region, which at operation proved to be unconnected with the parotid but to have a fistulous prolongation which penetrated the mandible to reach the floor of the mouth. The bone was resected and the tumor removed. The latter was an infected dermoid cyst, consisting of epidermis, sebaceous glands and hair follicles, besides cholesterol and much pus. The author gives twelve good illustrations, and a well selected international bibliography of branchial cysts and fistulae. He calls special attention to the memoir by Carp and Stout (Ann. Surg. 87: 186, 1928) as an important contribution which has escaped the notice of most European writers on branchial cysts and fistulae.

F. Cavers

A child of four years with a large mass in the left cervical region, present since birth and growing rather rapidly, was operated upon, and a multilocular cyst containing clear fluid was removed. The diagnosis was lymphangioma.

The diagnosis, symptoms, pathology, and treatment of these lesions are discussed. A photograph of the lesion in the case reported is presented. There is no bibliography.

C. R. Mullins

THE CAROTID BODY


A woman of sixty gave a history of trauma to the left cervical region twenty-seven years previously. A tumor had appeared shortly afterwards and had remained asymptomatic and unchanged in size until a few years before the present admission, when it had suddenly started to grow. A loud systolic bruit led to the diagnosis of arteriovenous aneurysm. Excision was carried out and it was only when the specimen was examined that it was recognized as a carotid body tumor. The immediate recovery was uncomplicated, but no note is made as to the ultimate result. There are two illustrations.

Theodore S. Raiford

THE THYROID AND PARATHYROIDs


Four cases of thyroid carcinoma are reported in women of seventeen, fifty-four, forty-three, and fifty-six years. The histologic diagnoses were respectively carcinoma, papillary adenocarcinoma arising in toxic goiter, carcinoma, and alveolar carcinoma partly adenomatous and partly scirrhous. In the first two cases there were marked signs of hyperthyroidism. The first patient died shortly after operation; no metastases were found at necropsy. The fourth patient also died, with metastases scattered throughout the thorax and abdomen and in the lumbar vertebrae. The remaining two patients had been operated upon quite recently. There are two illustrations.

F. Cavers


A man of twenty-three had for about six weeks noticed increasing enlargement of the neck and dyspnea on exertion. There were enlarged veins on the chest wall. The lateral lobes of the thyroid were enlarged, and in the isthmus was a hard mass which could be traced downwards behind the sternum. The left supraclavicular nodes were enlarged and hard. There were no signs or symptoms of Basedow’s disease. The patient died during the administration of the anesthetic. Necropsy showed that the hard retrosternal mass filled the anterior mediastinum and extended to the diaphragm, surrounding and compressing the trachea and larynx and invading the prevertebral tissue, sternal periosteum, pleura, and hilum of the left lung. No metastases were found except in the supraclavicular nodes. The entire tumor weighed four and a half pounds, and was diagnosed as thyroid adenocarcinoma. There is an illustration of the gross tumor.

F. Cavers


Relationship Between Riedel’s Struma and Struma Lymphomatosa (Hashimoto), D. Eisen. Ibid. 31: 147–150, 1934.

In 4 of the 7 cases reported in the first paper the lesion was diagnosed as Riedel’s struma and in 3 as Hashimoto’s lymphomatous struma. There are four illustrations.
In the second paper the author compares these two forms of struma. That first described by Riedel in 1896 clinically simulates malignancy, owing to its large size, induration, and extensive adhesions to the large blood vessels of the neck. Histologically it shows marked fibrosis and round-cell infiltration. Hashimoto (1912) reported four cases which resembled Riedel’s struma but showed in addition extensive proliferation of lymph follicles. Since Ewing (1922) suggested that the Hashimoto type represented an earlier stage of the Riedel struma, several cases of both types have been reported, and there has been considerable divergence of opinion regarding the relationship between these lesions. From his own studies and a review of the literature, the author suggests that the two types are different morphological manifestations of the same disease process, and that neither type necessarily precedes or follows the other. Since only about 80 cases appear to have been reported, statistical studies are at present of limited value. There are four illustrations, and a bibliography is appended.

F. Cavers


A calcified and a non-calcified thyroid adenoma were removed from a woman of forty-eight. She had first noticed swelling in the neck five years previously, and had during the past six months had persistent cough, besides some mild symptoms of hyperthyroidism.

F. Cavers


A woman of forty-seven had three years previously noticed swelling of the right arm, which later extended to the right side of the neck. Over the latter and the upper right hemithorax there were dilated veins. X-rays showed an ovoid tumor in the upper lobe of the right lung. This was easily enucleated from the lung tissue after resection of the posterior portions of the first four ribs, but the patient died suddenly from pulmonary embolism on the third day. The tumor was a colloid struma. There are five illustrations.

F. Cavers


A forty-six-year-old man had a malignant adenoma of the parathyroid gland which recurred after surgical removal. Tumor cells were found in the small veins and lymphatics and the muscles of the neck, and a metastatic nodule was observed in the infrahyoid muscles of the side opposite the main tumor. The patient has remained well for eighteen months following the second operation.

Eighteen cases of malignant parathyroid tumors, including the one here reported, have been collected from the literature and are reviewed in tabular form. Ten of the 18 patients were fifty years of age or over, while only two patients were under forty. Eleven of the tumors were 8 cm. in diameter or larger. While over 50 per cent of benign neoplastic growths of the parathyroid glands are accompanied by changes in the skeleton, in only one of the 18 cases of malignant adenomas were bone changes found. Four photomicrographs illustrate the article.

Benjamin R. Shore


This is a report of multiple parathyroid tumors occurring in a fifty-year-old white male. Progressive swelling of the neck and “sore throat” had been present, but for only four days before admission to the hospital, although there had been some complaint of weakness for five weeks. On the day before admission a “bruised” area was noticed on the anterior aspect of the right chest and neck, though there was no history of trauma.

The patient showed moderate respiratory distress, was very nervous, and complained of double vision. The skin of the face and neck was of an unusual reddish-blue color, as in congestion. Slight edema of the face was present, the lips were cyanosed, and the conjunctivae were moderately injected. The pharynx, soft palate, and tonsillar regions
were of a reddish-purple color due to multiple minute hemorrhages and to congestion with blood. In the retropharyngeal region was a marked swelling which appeared to be due to a large hematoma. The neck, especially anteriorly, was diffusely enlarged, although no lymph nodes or distinct masses could be located. There was, however, an indefinite firmness in the midline, extending beneath the sternum. There were only slight tenderness and slight pitting over the tumor mass, without pulsation. A large ecchymotic area which pitted moderately on pressure was present over the right upper chest anteriorly, extending down to the nipple. Percussion showed increased retrosternal dullness, especially to the right, also posteriorly over both lung apices. The liver edge was palpable 3 cm. below the costal border. The laboratory examinations showed no definite abnormalities. Roentgen-ray examinations of the chest showed a tumor mass in the superior mediastinum. This was thought to be consistent with a diagnosis of aneurysm or mediastinal tumor.

The patient died in an attack of delirium tremens on the fourth day after admission to the hospital. At autopsy it was found that all the anterior thoracic muscles and the anterior mediastinum around the base of the heart were infiltrated with blood. On each side of the trachea, at the level of the clavicle, a nodule was found. That on the right measured 7 x 3.5 x 2.1 cm., weighed 22 gms. and was filled with blood. From this point blood could be traced to all the subcutaneous and mediastinal hemorrhagic areas. The mass on the left was similar in shape and was also of soft consistency. It measured 2.4 x 3.5 x 2.1 cm. and weighed 13.6 gms. The thyroid was normal and no normal parathyroids were seen grossly.

The anatomical diagnosis was parathyroid adenomata, hemorrhage into one tumor with suffusion of mediastinal tissues and muscles of the neck and thorax. Microscopic examination of the tissue from the parathyroid tumors showed masses of medium-sized cells with clear cytoplasm, small round or oval, dark-staining nuclei, and well-defined cell margins separated by connective-tissue trabeculations. During the microscopic examination a small parathyroid gland was discovered in the tissues of the neck. The cells were of the same type as those composing the two tumors. The microscopic diagnosis was hyperplasia of the parathyroids and hemosiderosis of the spleen, liver, adrenals, and bone marrow. Unfortunately no studies of blood chemistry had been made. Post-mortem roentgen-ray examination of the entire skeleton revealed no evidence of either decalcification or cysts.

The author agrees with Albright and his co-workers (Arch. Int. Med. 54: 315, 1934. Abst. in Am. J. Cancer 23: 867, 1935) that there is a distinct difference between the microscopic picture of single and of multiple parathyroid tumors. The reported case presents a histological picture identical with those of Albright et al. An excellent photomicrograph accompanies the article.

W. S. MACCOMB

THE BREAST


On the basis of 1054 tumors of the breast of all types personally observed, the author discusses these lesions primarily from the point of view of diagnosis and treatment. While benign tumors may cause no symptoms or inconvenience to the patient, their presence offers a potential source of malignant development. The use of x-rays and radium in the treatment of breast lesions, especially those of malignant nature, has caused reductions of size to the point where tumors previously regarded as inoperable have become removable. In view of this, radiotherapy is advocated in every case until proved of no avail. Furthermore, although lesions may seem to be entirely removed surgically, postoperative irradiation should not be neglected. This mode of treatment is especially valuable in the presence of late metastases. Equally important is the thoroughness with which radical masteectomy is carried out. Only by the intelligent combination of surgery and irradiation is the mortality to be lowered. There are no illustrations.

THEODORE S. RAIFORD

Considering the difficulty of making a clinical diagnosis of every mammary tumor, the author urges that every doubtful breast condition be subjected to exploratory exposure. If the tumor is encapsulated it will almost certainly be a fibro-adenoma, requiring excision and thorough histologic investigation, though there is practically no evidence that such tumors undergo malignant change. The latter statement applies also to the various forms of local or general fibrocystic disease, but it is possible that such lesions, especially when diffuse, may mask an early carcinoma. The author has used the frozen section method of interoperative diagnosis, but points out that this throws a very grave responsibility on the pathologist and should never be used unless the latter has had considerable experience in the interpretation of such sections. In the presence of fibrocystic disease, it is better to perform wide excision if the lesion is small or nodular, and to amputate the breast if the lesion is large or diffuse. Paget's disease is so frequently associated with duct carcinoma that the only safe line of action is amputation of the nipple with exploration and histologic examination of the underlying breast tissue, followed if necessary by radical operation. The same indications apply to duct papillomas, often associated with bleeding from the nipple, on the ground that these tumors if not already carcinomatous are prone to undergo malignant change. Between pathologist and surgeon, there must be the closest collaboration.

F. Cavens


In this paper, devoted almost exclusively to the treatment of operable cases of breast cancer, the author has covered a fairly wide field in the collection of statistics of end-results of treatment by surgery, by irradiation, and by a combination of these measures. The end-results analyzed fall under three heads:

1. **Surgery Alone:** Hintze collected 4952 cases with an average five-year survival of 31.7 per cent. Other more or less extensive series are cited, giving five-year cures varying from 20 to 70 per cent. On the whole, the author considers that a fair average figure for five-year survival in operable and borderline cases after operation alone would be about 35 per cent.

2. **Irradiation Alone:** Since in a certain number of locally inoperable cases irradiation alone, whether by x-rays or radium, may cause apparently entire disappearance of the tumor, the same result would be expected in a considerable percentage of operable cases. Wintz has reported 50 per cent cure of operable cases treated by x-rays alone. In a similarly treated series of 229 cases in the French literature the average five-year cure rate was 35 per cent. Allowing for the small number of cases available for assessment, as compared with the enormous surgical statistics, it would appear that the end-results of irradiation treatment of operable breast cancer are sensibly the same as those for operation.

3. **Combined Operation and Irradiation:** The majority of radiologists agree that operable breast cancers should be radically operated, and that postoperative irradiation should be as thorough as though it were the sole treatment, that is, sufficiently intensive to destroy cancer cells in the bed of the tumor and its surroundings. Many radiotherapists would confine this irradiation to the actual field of operation and the axillary and supraclavicular nodes, but some have advocated prophylactic irradiation also of the lungs, mediastinum, and vertebral column, on the ground that metastases occur more frequently in these regions than do recurrences in the operative wound and the adjacent structures.

The author comes to the tentative conclusion that the ideal treatment of operable breast cancer consists in radical extirpation, followed by surface mould radium to the axilla, radium implantation in the internal mammary lymph drainage region, and x-rays by a protracted divided dosage technic to the tumor bed, supraclavicular fossa, thorax, and spinal column.

F. Cavens

The author deals with breast cancers which have invaded the thoracic wall, and divides these into cases of primary and of secondary (recurrent) invasion. Of the former he has operated in 8 cases. The first 5 were treated by electrocoagulation (2 cases), curettage (2 cases) and partial resection. The patients died after six months, fifteen months, five years, five years, and fifteen months respectively. In three further cases more radical operation was attempted, thoracotomy with pleural resection in 2 cases, resection of practically the whole of three invaded ribs in the third case, with survivals of eleven, sixteen and three months. The author also operated in four cases with recurrences invading the thoracic wall. In one case, radically operated upon four months previously, he resected three ribs and a large pleural surface. This patient was well and free from recurrence when seen a year later. In the second case a recurrence extending into the lung was resected, but further recurrence took place three months later. In the two remaining cases the recurrence was treated by electrocoagulation. In one case this was combined with resection of four ribs, and the patient was free from recurrence at the time of reporting, two and a half years later. In the last case there was necrosis of the exposed ribs, with sequestration and secondary infection; yet following electrocoagulation the patient was recurrence-free after more than two years. In each of the cases reported postoperative x-ray irradiation was given.


This report is based on the experience of the Pondville Hospital, Massachusetts, and a small number of private cases treated elsewhere. The treatment of choice for operable carcinomas of the breast has been radical surgery. Analysis of the cases treated with radium establishes the fact that in the majority of cases the disease was inoperable, either by virtue of its local extent or the presence of distant metastases. At the same time the primary growth was superficial enough or localized enough to call for a more intensive concentrated irradiation than that which can be achieved by roentgen therapy alone. The primary growth was usually movable on the chest wall, but often so extensive as to involve most of the breast, and occasionally presenting nodules with skin involvement or ulceration. Axillary metastases were present in most cases, and in many there was supraclavicular node involvement. Thus, in the main, radium treatment was essentially palliative and was used as part of a general plan of radiation therapy, most of which was delivered in the form of roentgen rays.

Nuclei containing 2 or 3 mg. of radium were used, with 0.5 mm. platinum filtration. The 2-mg. needles were 3.2 cm. and the 3-mg. needles 4.8 cm. long. The breast and axilla were prepared as for a surgical operation and nitrous-oxide-oxygen anesthesia was ordinarily used. The needles were inserted so as to give as concentrated a dose as possible directly into the tumor mass. The axilla was irradiated in a similar fashion. The duration of the treatments, as a rule, was a week, although it varied from a few days to ten or more, depending on the number of needles used and the size of the growth. When patients are treated in this way, the dose per needle ranges from about 300 mg. hours for the 2-mg. needles to about 500 mg. hours for the 3-mg. needles. Thus the total dose varies from about 5,000 to about 20,000 mg. hours, depending on the number of needles and the duration of application. Repetition of treatment is not usual.

Biopsies were secured in all cases when this was possible. Punch biopsies were attempted but were found unsatisfactory. In most of the cases, however, the diagnosis could readily be made without histologic study of a biopsy specimen.

Most of the patients treated with radium also received intensive roentgen therapy. In about half of the cases some roentgen treatment preceded the application of radium. About 300 r was given at a treatment for a total of 1200 r in a series. Many patients received several such series.

Of the 40 patients studied in detail for this report, 19 are dead. In two instances there had been very favorable regressions of the lesions and the patients died of other causes five months and two years respectively after radium treatment. One lesion was
proved by histologic study to be a gumma rather than a carcinoma. Of the 20 remaining patients, 8 were treated within six months, which is too recent to permit judgment of the effect of treatment. Of the other 12, one was subjected to radical operation six months after the radium treatment and now shows no evidence of the disease one year after operation. All of the remaining 11 patients present evidence of uncontrolled metastatic cancer.

As regards the immediate effect of the radium treatment, regression of the primary breast lesion was observed in 37 cases and an apparently permanent arrest was secured in 24 cases. Three patients showed no regression of the local process after radium treatment and death followed rather rapidly. It is noteworthy that when specimens for histologic examination have been obtained from these breasts which apparently show no active malignancy, the specimen in all but one case has shown microscopic evidence of cancer. Axillary metastases showed regression after radium treatment in 14 cases. In 6 patients chronic ulcerations developed which seemed reasonably attributable to the radiation. In one of these instances simple mastectomy was carried out. Histologic evidence of carcinoma could not be found in the specimen, although the patient has definite lymph node involvement in both supraclavicular regions.

From this study it is concluded that radium implantation is a useful form of palliative treatment for inoperable carcinomas of the breast when it is used as a part of a general program of irradiation. It is unjustifiable to treat operable tumors with radium unless operation is definitely contraindicated by the condition of the patient.

**Benjamin R. Shore**

**Relative Value of Surgery, Radium and Roentgen Therapy in Carcinoma of the Breast,**


In view of the small percentage of five-year cures secured by the surgical treatment of breast cancers, it seems advisable not to differentiate too rigidly between radical and palliative surgery. On the other hand, the indications for surgery should be widened. The surgical treatment of breast cancers should not be considered the only form of therapy but rather as an indispensable adjuvant to radiotherapy. The latter is the nearest to a specific remedy possible in the treatment of cancer and is from this standpoint superior to surgery and has a wider applicability.

**Benjamin R. Shore**

**Two Cases of Carcinomatous Degeneration of Papillary Cystadenomas of the Breast,**


The author reports the histories of two patients in whom carcinomatous degeneration of papillary cystadenomas of the breast occurred. A radical mastectomy was done in each case and the patients have remained well for one and five years after operation respectively. The axillary lymph nodes in both cases were free of tumor. The article is illustrated with photographs of the gross specimens.

**Benjamin R. Shore**

**Carcinomatous Metastasis to the Brachial Plexus Manifested by the Syndromes of Klumpke-Déjerine and Claude Bernard-Horner,**


A woman of forty-five years had, some three years previously, undergone a radical mastectomy for carcinoma. Metastases appeared in the scar, followed later by pain and mild sensory changes in the arm on that side, motor weakness, and severe pain in the shoulder. Still later the patient lost weight, there was hypesthesia of the face on the same side, the left palpebral fissure became narrowed, and the pupil of that eye became smaller. A left enophthalmos became apparent. Atrophy of the hand and arm muscles of the left side developed with considerable loss of power and limitation of motion. Periosteal and tendon reflexes were abolished, and a progressive loss of sensation in the limb followed.

**Edwin M. Deery**

The author states that although the normal perithelium exists only as a discontinuous layer in the peripheral walls of blood vessels, usually in the form of stellate cells, there are tumors which appear to arise from these perithelial cells and which may be interpreted as true peritheliomas. These tumors are probably rare, and are difficult to distinguish from those carcinomas in which the cells show a similar perivascular arrangement.

A woman of fifty-two stated that ten years previously her baby had bitten the left nipple, and that some time afterwards she noticed a small swelling in the upper outer quadrant of the breast. During the past nine years this had grown rather slowly, but latterly had increased more rapidly in size. It was now some 13 cm. in diameter, was irregularly nodular, and extended into the axilla. X-ray examination showed nodular shadows scattered in both lungs but more densely aggregated in the right hilar region, suggesting metastasis. Radical operation was done, but no further history is given.

In the central more vascular portion of the tumor the cells were shortly spindle-shaped and set at right angles to the long axis of the vessels. In the outer less vascular zone the cells were rounded. Both cell types showed numerous mitoses, some of them atypical. There are two illustrations.

THE ORAL CAVITY AND UPPER RESPIRATORY TRACT

Cancer of the Mouth, P. P. Chase. Rhode Island M. J. 17: 130, 1934.

This is a general discussion concerning the diagnosis and treatment of cancer of the mouth. No new material is included.


During the years 1924–1926, 109 cases of carcinoma of the buccal mucosa were observed at the Massachusetts General Hospital. These are reviewed by Taylor and the types and results of treatment are discussed. Of 83 patients for whom follow-up data were available, 66 were operated upon, and 21 of these, or 32 per cent, lived five years or more, free from disease. While radiation is of definite palliative value, it is felt that it contributed little to the cures in this series. No definite correlation between the grade of malignancy and the prognosis could be demonstrated. There are no illustrations. The statistical data are set forth in seven tables.


After citing the results published by several writers for surgery, irradiation, and combined treatment for lip cancer, the author briefly reports 157 cases treated at the Radium Institute, Aarhus, between 1923 and 1932. The histologic diagnoses were: squamous-cell cancer 151, basal-cell cancer 4, adenocarcinoma 1, "diffuse" cancer 1. Of these cases, 113 (71.3 per cent) were considered operable, and were operated upon and given postoperative radium; 90 (80 per cent) were alive and well three years after the beginning of treatment. Five-year results are not mentioned. Of the 44 inoperable patients treated by radium, 30 were alive after one year; no further details are given concerning this group.


During the past thirty-six years there have been reported from the two otolaryngologic clinics of Basle only three cases of primary melanomas of the upper food and air passages—one each in the nose, alveolar process of the lower jaw, and the tonsil. In the available literature the author found only 59 reported cases of this kind (42 in the buccal cavity, 38 in the nose and paranasal sinuses, 4 in the esophagus, 3 in the pharynx, 2 in the

F. Cavert
tonsil). The great majority of these cases ran a rapidly fatal course, and apparently there was no survival for as long as five years after treatment. Surgery seems to be almost hopeless, and other methods of treatment little better. F. Cavers


The remains of the embryological epithelial union between the palate and nasal epithelium may give rise in later life to epithelial cysts of the hard palate. These are situated in the midline and either contain mucous or epithelial débris. The article is well illustrated with photographs and photomicrographs. F. Cavers


The author reports two cases of multiple papulosquamous hyperkeratotic buccal lesions, with the characteristic histologic picture of Bowen's disease [not described or illustrated]. One patient was a man of fifty-six, who had been repeatedly treated by diathermy, with frequent recurrences, often in a different part of the mouth or pharynx. The second patient, a man of sixty, first noticed the lesions three years previously and had been under observation for six months but had received no treatment. F. H. Diggle, commenting on these cases, said it was difficult to decide when this disease passed from precancer to cancer; in case 2 there was a hard cervical lymph node, and the slides showed in places typical squamous-cell carcinoma. D. H. Paterson had seen two clinically similar cases in which the disease began on the inside of the cheek, fauces, and soft palate and was confined there for a long time, but despite repeated excisions recurred and extended; specimens were examined from time to time by a pathologist, but only in the later stages did the latter consider the lesions to be malignant. L. Powell had recently seen a woman whom he had treated with diathermy nine years previously for a large ulcer of the palate involving the left antrum. Though the pathologist said the lesion was inflammatory, the patient returned two years later with recurrence reported as squamous-cell carcinoma; radium was applied in the antrum and diathermy to the palate, but a year ago the patient again returned with nodules in the palate and subcutaneous lumps in the cheek. F. Cavers


A woman of forty-two was first seen in 1927 with a basal-cell carcinoma of the palate. At that time 25 mg. radium was inserted into the growth for twenty-four hours. Seven years later the patient returned with recurrence, and seven 0.5 mg. needles were inserted for seven days. At the time of reporting, eighteen months later, there was a further slight recurrence. F. Cavers


Papillomas involving the maxillary sinus with perforation into the nasal cavity are rare, only 8 cases having been reported in the literature. The author reports the case of a sixty-two-year-old patient in whom multiple benign papillomas of the right maxillary sinus were removed by a radical surgical operation. No follow-up is given. One photograph of the gross specimen is included. F. Cavers


The author reports the case of a fifty-seven-year-old man from whom a tumor involving the right maxillary antrum, internal orbital plate, and ethmoid bone was surgically removed by Mr. Eric Steeler in London. Radium therapy of an unstated amount was given after operation. Histologic study of the tumor showed it to be an infected epithelioma. The patient shows no evidence of recurrence three months after operation. The article is without illustrations. F. Cavers

In a man of thirty-three complaining of nasal obstruction, first noticed a year previously, posterior rhinoscopy showed an expansion of the posterior edge of the vomer by what appeared to be a chondroma almost filling the right posterior choana and to a less degree the left. X-ray examination showed an indefinite shadow in the position of the tumor. Biopsy is not mentioned. F. Cavers


The author reports in detail the histories and autopsy findings in 7 cases of carcinoma of the epipharynx observed in 3600 autopsies. Four of the tumors were primary and 3 were secondary. The article is well illustrated with photographs of gross specimens and photomicrographs. Benjamin R. Shore


The author reports the case of a twenty-eight-year-old man from whom a pharyngeal tumor measuring 7 by 5 by 5 cm. and weighing 105 grams was surgically removed. This growth arose from the right pharyngeal wall and occupied the greater part of the pharynx. Histologic study showed it to be composed of glandular tissue, cartilage, connective tissue, and small areas of myxomatous tissue. The diagnosis of mixed tumor of the pharynx was made. One photograph of the gross specimen is included. Benjamin R. Shore


A man of fifty-five had for more than two years had dysphagia, but had not lost weight. On radiography the first spoonful of the opaque meal was held up at the level of the top of the sternum and appeared as a smooth, rounded mass, while the next spoonful passed easily down the esophagus, flowing past the upper portion of the first swallow. At operation the pharyngeal pouch, very thin and consisting only of mucous membrane, was sutured, pushed upwards and attached to the fatty tissue at the lower pole of the left parotid gland. Five years later the patient returned with dysphagia. The skin of the left side of the neck was red, thickened, indurated, and puckered. In the folds the openings of six sinuses were seen, and these on probing seemed to converge on one opening into the esophagus. The sinuses were opened and most of the thickened skin cut away. Histologically the skin contained squamous-cell carcinoma in large indurated masses, with little keratinization and few mitoses. Radium was inserted into the wound (dosage 6200 mg. hours); healing was good, but two months later the patient died suddenly in an asphyxial attack. There are no illustrations. F. Cavers


The author describes three examples of carcinoma of the pharyngeal tonsil which, unlike the usual neoplasm of their class, produced no symptoms and therefore escaped discovery until accidentally encountered at autopsy. Wm. H. Woglom


The authors report the case of a sixty-seven-year-old man in whom a metastatic tumor of the right tonsil appeared two years after removal of the left kidney for a hypernephroma. Histologic study of the tonsillar tumor showed it to be a typical hypernephroma. A series of radiation was administered by the method of Coutard, but the end-result is not given. Two photomicrographs of the metastatic tumor are included. Benjamin R. Shore

Of 117 patients with laryngeal cancer seen in the author’s clinic, 6 were coal miners. In 5 of the latter pneumoconiosis was demonstrated roentgenographically; in the sixth the case report and roentgenogram were not available. The ages of these miners ranged from thirty-nine to fifty-nine, and they had worked in coal mines for fifteen years or longer. The author concludes that the occurrence of laryngeal cancer in these patients was probably coincidental.

F. Cavers


The author reports a laryngeal chordoma in a woman of fifty-two, diagnosed by the attending physician as an inoperable carcinoma. There had been two attacks of severe dyspnea. The tumor was a translucent, bluish, lobulated mass in which small yellow opaque calcified areas were seen. It lay beyond the vocal cords, which moved naturally and freely. Permanent low tracheotomy was done, removal of the large tumor being considered inadvisable. There is a good roentgenogram.

F. Cavers


It is probable that an attempt at an exact duplication of Coutard’s treatment factors and his technic is neither necessary nor advisable, since identical equipment is seldom available. The universal employment of the divided dose method has undoubtedly been hindered by such attempts and disregard of the logical application of the more important general principles.

During the years 1931 and 1932, 140 patients with malignant tumors of the tonsil, larynx, nasopharynx, pharynx and soft palate, base of the tongue, and anterior portion of the floor of the mouth were treated at the Memorial Hospital in New York by the fractional or divided dose method of external irradiation. Thirty of these patients, or 21 per cent, are well and free of disease for periods varying from eighteen months to three and one-half years. The technic used is described in detail. Photographs of patients before and after treatment, photographs of various types of apparatus, and drawings illustrate the article.

Benjamin R. Shore


The author reports the end-results secured after the radiologic treatment of 6 patients with laryngeal carcinomas. There were three intrinsic and three extrinsic epitheliomas, all of the squamous type. The actual treatment in each case extended over a period of three to four weeks, a total of about 8,000 r units being given. Five of the patients have remained well for over two years and two for over three years.

Benjamin R. Shore


The author discusses the radium treatment of malignant tumors of the upper air passages based on a study of his 61 cases. These included 6 carcinomas and 2 sarcomas of the nasal cavities, 3 carcinomas of the epipharynx, 5 situated at the angle between the palate and base of the tongue, 13 of the soft palate, 9 of the base of the tongue, 9 carcinomas and 3 sarcomas of the tonsil, and 11 epitheliomas of the larynx. Twenty of these sixty-one patients have remained well after radium treatment, for periods varying from one to five years. Detailed analyses of the sites and character of the tumors and the amount of radiation given in each case are included in tabular form.

Benjamin R. Shore

The author describes the lymph drainage from the tongue, floor of the mouth, and tonsil, giving as illustrations three woodcuts from rather old textbooks of anatomy. He discusses the question whether cervical node metastases from carcinoma in these sites should be treated by irradiation or by surgery, and concludes that at present surgical extirpation holds the field.


Although exceptionally good results have been obtained in some cases of neck metastases by implantation of radon seeds, the State Institute has largely discarded this method in favor of x-ray radiation and the radium pack, since it is felt that results equally as good can be obtained without some of the undesirable effects of implantation. In all malignant lesions of the lip, tongue, mouth, pharynx, or larynx both sides of the neck are radiated regardless of the presence or absence of perceptible metastases. The details of technique and dosage are described briefly, and cases reacting favorably to each method of treatment are cited. There are no illustrations. Theodore S. Raiford


A white woman aged twenty-seven complained of pain in the left shoulder for ten months, radiating to the left breast. Examination revealed a small painful nodule on the posterior aspect of the seventh rib. Roentgenograms of the chest showed a mass measuring approximately 7 by 8 cm. which projected intrathoracically from the chest wall in the region of the involved rib. After a pneumothorax had been established thoracoscopic examination disclosed a globular, highly vascular mass arising from the seventh rib but attached also to the adjacent ribs. Both lobes of the lung were attached to the mass by adhesions and in the adhesion to the lower lobe there could be made out evidences of beginning infiltration. Biopsy sections were taken through the thoracoscope, revealing an osteogenic sarcoma.

Preparatory to operation the mediastinum was stiffened by creating a circumscribed pleuritis by injection of oil of gomenol. Next the area between the mass and the pulmonary attachments was electrocoagulated and the vascular channels obliterated. To remove the tumor at the major operation it was necessary to resect sections of all three involved ribs. The portions of the lung to which the adhesions were attached were removed by clamping and coagulation. The patient survived this procedure and when last seen, fifteen months after operation, was symptom-free except for some pain in the region of the operative site. Pathological study of the removed specimen confirmed the diagnosis.

This valuable contribution demonstrates three important features of surgical procedures on thoracic lesions: (1) preliminary thoracoscopic examination, making possible an accurate diagnosis before operation and enabling the operator to orient himself before attempting the major procedure; (2) the use of oil of gomenol, eliminating the customary mediastinal flutter and minimizing shock; (3) coagulation of the vascular adhesions through the thoracoscope, simplifying the final operation to a great extent.

Ten illustrations depict the x-ray appearance of the chest before and after operation, the thoracoscopic visualization of the lesion, the steps of the procedure, and the gross specimen. A short bibliography is appended and the differential diagnosis of bony wall tumors is briefly discussed. For a more lengthy description of the pathological aspects of such lesions the reader is referred to the comprehensive paper of Hedblom (Ann. Surg. 98: 528, 1933. Abst. in Am. J. Cancer 21: 161, 1934). Theodore S. Raiford

Eggers reports the histories of two patients with intrathoracic tumors. One was a forty-eight-year-old man with either an angio-endothelioma or sarcoma of the pleura and the other was a fifty-eight-year-old man with a spindle-cell sarcoma of the mediastinum. Both patients died following attempts at surgical removal of the tumors. The article is illustrated with five roentgenograms.

Benjamin R. Shore


In 1920 a man of forty-nine, complaining of cough and dyspnea, showed on laryngoscopy a subglottic tumor, which was removed by a snare and diagnosed histologically as an endothelioma. He returned two years later with a tumor on the posterior wall of the trachea, which on removal was diagnosed by another pathologist as a benign mixed tumor, mainly endotheliomatous and chondromatous. In 1931 a recurrent tumor was removed from the old tracheotomy scar, and diagnosed as a benign basal-cell cylindroma. In 1933 the patient again returned, complaining of severe dyspnea and looking very ill. The tracheal tumor had again recurred, but this time had infiltrated the tracheal wall and almost blocked its lumen; there were also two tumor nodules near the scar and two smaller tumors were found below the large stenosing intratracheal growth. The patient died on the eleventh day with symptoms of bronchopneumonia. Necropsy revealed an extension from the tracheal tumor invading and almost destroying the left lobe of the thyroid gland, and multiple small metastases in both lungs. The stenosing tumor and its extensions and metastases consisted of squamous-cell carcinoma. The author believes the tumor was originally a basal-cell carcinoma, which had undergone squamous metaplasia. This might explain the slow development of the disease over a period of about fifteen years. The only illustration is a photograph of the gross necropsy specimen.

F. Cavers


In two coal miners, aged forty-eight and forty-nine, the association of anthracosis of both lungs and bronchial carcinoma in one lung was demonstrated at necropsy. The author points out that very few cases of primary lung cancer have been observed among hundreds of Pennsylvanian coal miners who have presented definite x-ray evidence of pneumoconiosis, suggesting that the incidence of lung malignancy is probably no higher among workers exposed to dusts than among the general population.

F. Cavers


The author reports the case of a thirty-six-year-old man with an interlobar empyema, suppurative pneumonitis and bronchiectasis, and carcinoma of the bronchus. The patient made a good recovery following partial lobectomy. The tumor in this case was a squamous-cell carcinoma situated in the left lower lobe bronchus about one inch away from the upper lobe branch. Three roentgenograms illustrate the article.

Benjamin R. Shore


With the exception of radio-active dust, there are few, if any, tangible factors that can be accused of causing cancer of the lung. Various other diseases and irritants such as tuberculosis, syphilis, chronic lung infections, pneumonia, and particularly influenza, seem to precede the onset of the disease in such a manner that a relationship is suggested. These conditions perhaps cause a change in the basal layers of the mucous membrane which is followed by regeneration and malignancy. The article is illustrated with four photomicrographs.

Benjamin R. Shore

The resistance of malignant pulmonary neoplasms to radiation is well recognized, but in cases in which the diagnosis rests solely on the clinical and roentgenographic findings, radiotherapy is not to be rejected since one may be dealing with an intrathoracic tumor of the Hodgkin's type, a lymphosarcoma, or a leukemic lesion, any of which may clinically and roentgenographically resemble carcinoma. A case is reported by the author in which marked regression followed the use of x-ray therapy, thereby ruling out, in his opinion, the diagnosis of carcinoma. Since no biopsy section was available for histological diagnosis, the true nature of the lesion has not been determined, but the fact that the patient has been kept relatively symptom-free and the roentgenographic shadow has decreased in size strongly suggests a tumor of lymphoid nature. There are five x-ray reproductions of the chest films showing the size of the lesion at different intervals.

Theodore S. Raiford


A woman of seventy-seven was admitted to the hospital with symptoms of chronic nephritis. She also complained of pain in the right half of the chest, which had begun several years previously, and of increasing dyspnea. Radiography showed a rounded shadow in the right lung. The patient became increasingly dyspneic and cachectic, and died a few weeks later. At necropsy the supposed cancer of the lung was found to be a thin-walled serous cyst.

F. Cavers


In a boy of two and a half years, with a history of cough and nocturnal dyspnea, x-ray examination showed a large, opaque, oval mass with a well defined rounded margin, extending from the posterior mediastinum into the right field. The esophagus, trachea, and bronchial tree were normal. Tuberculin tests were negative. J. L. Livingstone thought the following points were against the diagnosis of a dermoid: the mediastinal shadow was oval, was situated too far posteriorly, and could be seen on the left of the aortic arch. He diagnosed enlarged lymph nodes, probably inflammatory. There are two x-ray illustrations, both taken in the frontal position.

F. Cavers


A fifty-year-old woman was brought into the hospital in an unconscious state and died a few hours later. At autopsy the heart was found to be markedly hypertrophied and in the left auricle was a large myxoma which partially protruded through the mitral valve. Examination of the brain demonstrated emboli from the tumor in the left anterior and posterior cerebral arteries and both middle cerebral arteries. These emboli varied in size from 3 mm. to 2.5 cm. in length and were not adherent to the intima of the vessels. The brain substance showed a moderate degree of cerebral anemia, and the location of the emboli coincided with the neurological signs before death. There is one illustration.

Theodore S. Raiford


The authors present the case of a fifty-year-old colored female who died in the hospital without the diagnosis of carcinoma having been made. Autopsy revealed a primary carcinoma of the esophagus with widespread metastases, involving the mediastinal nodes, lungs, liver, and mesenteric lymph nodes. There was also a massive bronchopneumonia. Microscopically the tumor was of the typical squamous epithelial variety with much keratin.
A brief discussion of the general aspects of the disease is presented, photographs of the gross and microscopic pathology are included, and there is a short bibliography.

C. R. Mullins


Four cases are briefly reported. In three the blood Wassermann reaction was positive; in a fourth it was negative but there was clinical evidence of arteritis. The author has collected 49 other recent French case reports of esophageal cancer, in 32 of which syphilis was admitted by the patient. In 15 patients of this series in whom a Wassermann reaction was done 12, or 80 per cent, were positive.

[The belief that lues is the sole causative factor in the great majority of cases of malignant disease is a sort of King Charles' head obsession of the author. Still, he is doing good service in emphasizing the undoubted fact that many cases of syphilis do not receive early and sufficient treatment, and in urging that blood tests and search for evidence of heredo-syphilis be routinely practised in every patient attending hospital for any reason. One point which he does not mention is the poor result of treatment of cancer in syphilitics. The esophagus is obviously not a good example, but cancer of the tongue, in which ordinarily a fair proportion of cures may be expected, is known to give very bad surgical results, and after radium puncture huge sloughs of the lingual tissues are not infrequent.]

In the discussion, Gougerot said that he could confirm the high incidence of syphilis in cancer of the esophagus.

F. Cavers


Lahey considers that the frequency of late diagnosis of gastric cancer is due to the absence of significant symptoms and signs in the early stages. The number of early diagnoses can be increased by the application of gastric analyses, and by x-ray studies and other diagnostic aids in patients exhibiting vague digestive abnormalities. The differentiation of carcinomas developing upon ulcers from chronic benign ulcers is of paramount importance, since in the former group early surgical intervention offers the best chance of cure. Disappearance of all symptoms, of occult blood from the stools, and of x-ray evidence of the ulcer, with restoration of normal peristaltic waves over a normally flexible gastric wall, is regarded as presumptive evidence of a non-malignant lesion. When any of these conditions persist, however, the patient is to be regarded as a cancer suspect and surgery is indicated.

In the author's experience gastro-enterostomy for inoperable advanced carcinoma has proved disappointing, and he believes that terminal care without this procedure is to be preferred. Total gastrectomy is feasible in some instances, especially in so-called limitis plastica or "leather-bottle stomach." There are no illustrations.

Theodore S. Raiford


This is a general discussion concerning the diagnosis and treatment of cancer of the stomach.

Benjamin R. Shore


A general account, containing nothing new.

F. Cavers


More significant than the causal relation between ulcer and cancer of the stomach is the frequent confusing mimicry by early ulcerating cancers of benign ulcers. The real problem is not how many ulcers become cancers but how, if at all, can the early ulcerating adenocarcinoma of the stomach be differentiated from the benign chronic ulcer. With our present clinical and laboratory armamentarium, not excepting the x-ray, the author is convinced that every ulcerating lesion of the stomach should be considered
suspicious of malignancy until proved innocent, and that its innocence should not be assumed until its insidious progress reveals its true character as cancer. It is well to bear in mind that the suspicion or even the possibility of cancer is often justification for measures which, though seeming radical to some, often prove to be the acme of conservatism.

The chief interest should not be in the number of patients upon whom only an exploratory or at best a palliative operation, usually unsatisfactory, is possible, but in the effort to increase the percentage of those patients observed early enough to permit a radical extirpation of the growth. The death rate from cancer will not be lowered until there is a more general appreciation of those symptoms or clinical signs which suggest the possibility of malignancy as well as recognition of the fact that positive clinical diagnosis of cancer of the stomach is possible only late in the course of the disease, when the chances for its successful removal are most remote. From June 1923 to June 1933, 309 patients with carcinoma of the stomach were admitted to the Western Pennsylvania Hospital in Pittsburgh. One hundred and sixty-three of these 309 patients were operated on; in only 39, or 12 per cent, was partial or subtotal gastrectomy possible.


Cheney studied 43 cases of gastric cancer from the point of view of the associated anemia, its cause and response to specific therapy. The anemia is of the secondary type and there is a tendency toward macrocytosis of the erythrocytes. The color index is not infrequently as low as 0.5. Although several factors may contribute to the etiology, the fact that improvement may occur and that bone marrow studies in six of the cases revealed a tendency toward erythropoietic hyperplasia rather than hypoplasia leads the author to consider a nutritional deficiency rather than a toxic depression as the causative agent. Treatment with a secondary anemia liver fraction and iron was followed by improvement in the erythrocyte count and the hemoglobin content as well as an increased reticulocyte count and improvement in the general well-being of the patient.

Three charts, three statistical tables and a short but comprehensive bibliography accompany the article. Brief data on illustrative cases are cited.


Friedmann reports a carcinoma of the stomach in which resection followed by deep x-ray therapy sufficed to keep the patient alive and in good health for four years before he succumbed to carcinoma of the liver. The four-year survival is attributed to the radiotherapy, but this would seem to be open to question, since it is not stated whether or not the regional lymph nodes were involved at the time of operation, and apparent cures for even longer periods of time are not especially rare after surgery alone. The technic of gastric irradiation is briefly discussed and there are five illustrations.


The authors report the case of a forty-year-old man in whom a total gastrectomy with retrocolic esophagojejunostomy and jejunojejunostomy was performed for a carcinoma involving the greater curvature of the stomach. Examination one year after operation showed an almost normal blood picture, aside from a slight anemia. Absorption food tests showed that the loss of protein was 32 per cent, fat 30.14 per cent, and carbohydrates 1 per cent. The loss of protein and fats is slightly greater than is to be expected in normal individuals.

A man of unstated age complained of pain in the right hypochondrium which was taken for renal colic. Radiographs and other investigations showed no renal pathology. At laparotomy there was found a large ulcer of the first part of the duodenum, and gastrojejunostomy was done. Two years later the patient returned in an anemic and emaciated condition and died a few days later. At necropsy the duodenum showed a non-ulcerated diverticulum, while the lesser curvature was occupied by a large ulcerated carcinoma. The authors conclude that the diverticulum and the carcinoma were both present but escaped notice at the time of operation, owing to their smallness.

F. Cavert


A man of sixty-seven complained of pain in the right hypochondrium, having the character of "angina of effort." There were no symptoms referable directly to the stomach, but an epigastric tumor was felt, and radiography showed a filling defect in the pyloric region. Gastrectomy was done. Metastases were found in the lymph nodes along both curvatures.

F. Cavert


1) In a woman of thirty-eight, who gave a history of dyspepsia since childhood, an epigastric tumor was palpable, and x-rays showed a filling defect in the antral region but no pyloric stenosis. Partial gastrectomy was done because the distal half of the stomach showed considerable thickening. Histologically there was diffuse inflammatory hyperplasia of all the coats, especially the mucosa, with scattered groups of carcinomatous cells.

2) A man of sixty-seven had no digestive troubles until about seven months before attending hospital, when he began to have vague abdominal pain, with vomiting. There was considerable abdominal enlargement, due mainly to ascites, and a tumor was palpated at the hepatic flexure of the colon. X-rays showed extreme narrowing of the stomach and almost complete intestinal obstruction from the ileum down to the sigmoid colon. At laparotomy the stomach, and also the entire colon, were found to be thickened and nodular. The last loop of the ileum was brought through the abdominal wall to form a temporary anus. Purulent parotitis set in, and death occurred a month after ileostomy. At necropsy the characteristic structure of carcinomatous linitis plastica was found in the stomach and the entire intestinal tract (except the rectum), and there was a metastasis occupying the greater part of the pancreas.

The author states that in the first case the picture was that of a chronic inflammatory process in which carcinoma had arisen secondarily. In the second case the carcinomatous process appeared to be primary and multifocal, and the hypertrophic and sclerotic connective tissue in this case showed extensive degeneration. There are four illustrations, but unfortunately these do not include photomicrographs.

F. Cavert


The authors report the surgical removal of a spindle-cell sarcoma of the stomach from a fifty-four-year-old man, with recovery and freedom from symptoms for a period of fifteen months. One illustration shows the roentgenological appearance of the stomach. There is a short bibliography.

Theodore S. Raiford


The author reports the case of a forty-four-year-old man in whom an extensive endothelioma originating on the greater curvature of the stomach and involving the
gastrocolic ligament was removed surgically. Hematemesis and the presence of a palpable tumor were the presenting symptoms. The patient made a good postoperative recovery and was discharged from the hospital well. No follow-up is given. Histologic study of the tumor showed it to be composed of large translucent cells, not unlike fat cells or those of a hypernephroma. However, nowhere within or without the cells could any lipoid or mucous deposit be detected. A well defined capsule was present except at one point close to the stomach wall where the tumor had penetrated the muscle layer; this was thought to mark the point of origin of the growth. The diagnosis of benign endothelioma of the stomach was made.

Twelve cases of endothelioma of the stomach, including the one here reported, have been collected from the literature. These tumors arose from the pyloric region in 6 cases, from the greater curvature in 3 cases, and from the anterior wall of the stomach, posterior wall of the stomach, and the cardiac end in one case each. No metastases were found in the six patients operated on. From a study of these cases it would appear that the preoperative diagnosis of endothelioma of the stomach cannot be made.

The article is illustrated with roentgenograms, photographs of the gross specimen, and photomicrographs.


Dudley describes a rare condition occurring in the small intestine of a fifty-six-year-old male. Epigastric pain which was partially relieved by food, weakness, dizziness and loss of weight, occult blood in the stools, and a pronounced and progressive anemia led to the tentative diagnosis of peptic ulcer. Radiography, however, failed to demonstrate any lesion and exploration was carried out. The entire small intestine exhibited multiple dark blue and purple masses varying from 0.1 to 0.5 cm. in diameter. By moderate pressure these lesions could be made to disappear. They were regarded as varices related to intestinal hemangiomas. No attempt at removal of the lesions was made, but the division of old adhesions in the ileocecal region associated with a previous appendicectomy was followed by marked improvement and disappearance of all symptoms referable to the abdomen. The literature on vascular intestinal tumors is briefly reviewed. There is one illustration depicting the gross appearance of the lesions.

Theodore S. Raiford


Nine lipomas of the gastro-intestinal tract were found in a series of 5754 consecutive autopsies performed since 1929 at the Cook County Hospital in Chicago. One of these tumors was in the stomach, 3 were in the jejunum, 3 in the ileum, 2 in the colon. Eight were in the submucosa. In 7 cases the lipoma was merely an incidental finding; in 2 the tumor was of grave significance and was the cause of death. In one of these latter cases the lipoma had become sequestrated and was lodged in the lower ileum, causing obstruction; in the other an intussusception of the lower 8 inches of the ileum into the cecum had been caused by the growth. Peritonitis was present in both of these cases.

Thirty-three benign mesenchymatous tumors of the gastro-intestinal tract were found in 5754 autopsies. These included the 9 lipomas described above, 13 fibromyomas, 5 fibromas, 3 myomas, 2 lymphangiomas, and an adenoma.

Benjamin R. Shore


A man of fifty-two, with a history of abdominal pain and vomiting, was operated upon for acute intestinal obstruction. Under anesthesia a mass was palpated to the right of and below the umbilicus. At laparotomy a large quantity of blood-stained liquid escaped. The mass, an invagination consisting entirely of small bowel, was resected. The tumor causing the invagination was a stalked lipoma about 2 cm. in diameter.

in Am. J. Cancer 15: 1748, 1931), the author collected from the available literature 242 cases of lipoma of the gastro-intestinal tract. The most frequent site was the small intestine (64 cases), next the colon (59). Intussusception was reported in 80 of the intestinal cases, 24 of them occurring in the small bowel and 20 in the colon. There is one illustration.

F. Cavers


Three cases of leiomyoma of the small intestines are reported by the authors. In one instance the tumor was definitely malignant and recurred thirteen years after resection of the primary growth; in another instance it was probably malignant, while in the third case it was probably benign. Too much reliance should not be placed upon the histologic structure of these growths in trying to arrive at their degree of malignancy. X-ray examination of the gastro-intestinal tract is of little value in the diagnosis as the tumor seldom encroaches on the lumen of the bowel. The presence of a movable tumor mass with a history of bleeding from the bowel should suggest the possibility of an intestinal leiomyoma. Early resection of the tumor with the surrounding normal bowel should offer a favorable prognosis. The article is illustrated with photographs of gross specimens and photomicrographs.

Benjamin R. Shore


The author reports the case of a seven-year-old boy from whom a tumor involving the distal third of the ileum was surgically removed. Histologic study of the growth showed it to be a typical lymphosarcoma originating in the wall of the intestine. Postoperative irradiation, amounting to 860 r units, was given over the lower portion of the abdomen; this was repeated a week later. The patient was gaining weight and was in good health one year after operation. The article is illustrated with a photograph of the patient and the tumor, and a photomicrograph.

Benjamin R. Shore


The authors report the case of a fifty-six-year-old woman in whom the diagnosis of a small intestinal obstruction possibly due to malignancy was made by roentgenologic study of the gastro-intestinal tract. At operation a constricting tumor of the jejunum was removed. Histologic study of the growth showed it to be a carcinoma which was infiltrating deeply into the muscle layers. One year after operation the patient returned to the hospital with symptoms of intestinal obstruction due to recurrent tumor. A gastro-enterostomy was performed and death occurred three months later. The article is illustrated with roentgenograms and a photomicrograph.

Benjamin R. Shore


The authors report the unusual coincidence of three different malignant tumors and miliary tuberculosis. The patient was a fifty-three-year-old white woman who complained of a painless abdominal mass of four months' duration. Operation revealed a malignant papillary cystadenoma of the left ovary with peritoneal metastases. The ovarian tumor was removed and a series of postoperative X-ray treatments administered. The patient remained fairly well for four years, and then returned with progressive weakness and abdominal cramps. Death from chronic intestinal obstruction ensued five days after admission. Autopsy demonstrated a torsion of the colon producing intestinal obstruction. In addition there were multiple carcinoid tumors of the small intestine with metastases to the mesenteric lymph nodes, an adenomatous polyp of the colon, a retention cyst of the right kidney and generalized miliary tuberculosis involving the lungs, spleen, adrenals, kidney, myometrium, liver, colon, vertebrae, and lymph nodes. There are no illustrations.

Theodore S. Raiford

Intussusception was present in 7 of 13 patients with tumors of the cecum. The diagnosis of this complication can often be made before operation from the clinical history and roentgenograms of the gastro-intestinal tract. The latter studies should be made during an acute attack because the intussusception may be easily reduced and escape diagnosis. Thirty-four additional cases of intussusception associated with cecal tumors selected from the 132 reported in the literature are reviewed. The article is illustrated with photographs of gross specimens and roentgenograms.

Benjamin R. Shore


Report of a recently operated case. A man of twenty-one had for a few weeks had pain in the right iliac fossa, where a tender lump was felt. X-ray after a barium enema showed a filling defect in the cecum. Despite the patient's age, twenty-one years, the author suspected malignant tumor, and this was verified at operation.

F. Cavers


A case of fibroma of the cecum causing partial intestinal obstruction due to a double intussusception and inflammatory hypertrophy of the regional lymph nodes is described. In spite of x-ray findings which were reported as negative, exploratory celiotomy was performed and the tumor removed. The patient has remained entirely free from any digestive symptoms for eleven years. There are two reproductions of x-rays, demonstrating the fallacy of the first report, and a photograph of the gross specimen.

Theodore S. Raiford


This is a general discussion of carcinoma of the large intestine and its surgical treatment. Aside from six illustrative cases no new material is included.

Benjamin R. Shore


The author reports two cases: (1) a cancer of the cecum treated by ileocecal resection with terminolateral anastomosis; (2) carcinoma of the transverse colon near the right flexure, with one-stage right hemicolectomy. In both cases the tumor was a typical adenocarcinoma, and both patients were well and had gained considerable weight when seen more than a year later. In uncomplicated cases one-stage hemicolectomy is considered the operation of choice. There are seven good roentgenograms.

F. Cavers


Brief note of a case. The x-ray pictured referred to in the title, but not reproduced here, showed practically no abnormality of the colon.

F. Cavers


Summarizing the clinical signs of cancer and diverticulitis of the colon, the authors point out that the differential diagnosis between the two conditions is not always easy. Roentgenographic study offers a valuable aid, the most satisfactory results being obtained when fluoroscopy is done in every position after about one pint of the barium
clyisma has been administered and before the films are taken. Meticulous study of the finer details is essential. Air insufflation of the colon after the barium has been passed is a valuable adjunct. Redoubling of shadows and masking of the lesion may sometimes be eliminated by shifting the position of the patient or, as was practised in one case, filling the bladder with water, thereby lifting the sigmoid into view. It is of importance to have a film of the normal colon before the administration of barium for comparison. The roentgenographic signs of the two diseases are tabulated as follows:

<table>
<thead>
<tr>
<th>Cancer</th>
<th>Diverticulitis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Canalization always present in certain types.</td>
<td>Canalization not present.</td>
</tr>
<tr>
<td>Mucosal pattern destroyed.</td>
<td>Mucosal pattern still incompletely seen.</td>
</tr>
<tr>
<td>Filling defects show as lobulated, cauli-flower masses with irregular ragged lumen and finger print deformity.</td>
<td>Filling defect consists of serrated, irregular, picket fence appearance.</td>
</tr>
<tr>
<td>Deformity of two types, the napkin ring and the massive deformity with crater formation.</td>
<td>Massive involvement only.</td>
</tr>
<tr>
<td>Sharp demarcation between normal and pathological bowel.</td>
<td>No distinct demarcation.</td>
</tr>
<tr>
<td>Haustral markings destroyed.</td>
<td>Haustral markings persist.</td>
</tr>
<tr>
<td>Persistent unilateral deformity in some types.</td>
<td>No unilateral deformity.</td>
</tr>
<tr>
<td>No evidence of diverticula.</td>
<td>Bud-like shadows indicative of diverticula.</td>
</tr>
<tr>
<td>Constant character of deformity.</td>
<td>Changing character of defects.</td>
</tr>
<tr>
<td>Rigidity with fixation.</td>
<td>Maintenance of flexibility.</td>
</tr>
<tr>
<td>No barium outside of gut.</td>
<td>Masses of barium outside lumen from ruptured diverticula.</td>
</tr>
<tr>
<td>Usually intraluminal.</td>
<td>Always extraluminal.</td>
</tr>
<tr>
<td>Patency maintained through canalization and fixation.</td>
<td>Inflammatory swelling and edema frequently cause obstruction.</td>
</tr>
<tr>
<td>Spasm of colon infrequent.</td>
<td>Spasm of colon frequent</td>
</tr>
</tbody>
</table>

There are no illustrations and no bibliography.

THEODORE S. RAIFORD


The advantages of a standardized technic in the treatment of carcinoma of the rectum are well illustrated by Woolf's figures from the University of California Hospital. In a group of 60 cases previously treated by several different surgeons, with various technics, the operative mortality was 60 per cent. Since the organization of the proctological service a few years ago the operative procedures have been standardized and the majority performed by one man, with the result that the mortality in 30 perineal proctectomies was 3.3 per cent, while in five abdominoperineal resections there was but one death.
THE LIVER AND GALLBLADDER

The author has adhered chiefly to two types of operation, abdominoperineal resection and perineal proctectomy. The Kraske type of sacral resection has been largely discarded on account of the unsatisfactory late results both in recurrences and personal discomfort. The abdominoperineal procedure has the advantage of more radical removal of diseased tissues with a lower percentage of recurrences, but is attended by a higher immediate mortality. The merits of the various modifications are discussed, the author personally favoring the resection advocated by Miles. The perineal procedure, on the other hand, is followed by a low mortality rate but a higher percentage of recurrences. The modification of Lockhart-Mummery is preferred. The choice between the two operations is governed by the individual case and depends mainly upon the location and extent of the growth.

The statistics for the various operative procedures published by the British Ministry of Health in 1927 are quoted. These cover 5,240 recorded cases treated by radical operation, and the data are set forth in two tables. There are no illustrations.

THEODORE S. RAIFORD


This is a general article concerning the diagnosis and treatment of carcinoma of the rectum. No new material is included.


Report of a rectal leiomyoma found incidentally at operation for hemorrhoids in a woman of twenty-five. It was a firm encapsulated mass measuring 3 x 2 cm. The author gives a useful series of brief abstracts of 40 cases of rectal leiomyomas and fibromyomas from the available literature.

F. Cavers


In the period from 1919 to 1932, 51 primary anal neoplasms were observed in about 61,000 proctoscopic examinations, there being a total of 2039 malignant lesions observed by proctoscopy in this group. Of the 51 patients, two-thirds were over fifty years of age; 25 were males and 26 females. The average duration of symptoms was eleven months. Bleeding, pain, constipation, sense of fullness, anal discharge, itching, and frequency of defecation were the outstanding complaints.

Biopsy is necessary for diagnosis, since the local lesion has no characteristic appearance. Thirteen patients had been subjected to hemorrhoidectomy and 10 to fistulectomy or drainage of an abscess since the onset of the disease. Pathologically, there were 43 squamous-cell carcinomas, 3 of basal-cell type, 1 melan-epithelioma, and 1 colloid carcinoma thought to have originated in a perianal sweat gland. In 3 cases no microscopic examination was done.

Treatment consisted of a combination of colostomy with radical resection, cautery operation, and extensive treatment with radium and x-rays. Of 42 patients followed, 15 are dead and 14 others have lived less than eighteen months. Only 4 have passed the five-year period.

C. R. Mullins

THE LIVER AND GALLBLADDER


The author reports 8 cases in which carcinoma of liver-cell type was associated with hepatic cirrhosis, as determined at necropsy. Although no histologic description is given, the author interprets this association as representing a definite etiologic sequence, the cirrhosis giving rise to adenoma and this in turn to carcinoma. He cites a series in which cancer of the liver was accompanied by cirrhosis in 80 per cent of cases, and on the other hand a series showing that only about 3 per cent of cases of cirrhosis are associated with cancer. The cases here reported illustrate two points emphasized by other writers,
that when cancer and cirrhosis coexist there is more or less marked enlargement of the spleen, and that the course of the malignant disease is more rapid, in comparison with cases of liver carcinoma without cirrhosis. The clinical features of "carcinomatous cirrhosis," apart from those just mentioned, are the early and rapidly progressive anemia and cachexia, hemorrhagic ascites, hematemesis, and melena. Additional diagnostic characters are leukocytosis, positive Millon and diazo reactions of the urine, and extreme hardness and irregularity of the surface and edge of the liver.

F. Cavers

Primary Carcinoma of the Liver with Spontaneous Rupture and Lethal Haemorrhage,


In the course of 27,000 autopsies performed at the Philadelphia General Hospital a ruptured liver has been seen four times. In two of these instances the rupture was due to trauma, in one it was unexplained, while in the fourth case it was spontaneous and associated with a primary hepatic carcinoma. The liver was about five times the normal size. On the anterior aspect of the right lobe was an ulcerated tumor mass which was thought to be the source of the blood which was found in the peritoneal cavity at autopsy. The article is without illustrations.

Benjamin R. Shore


A man of forty-nine had four months previously noticed enlargement of the abdomen, which had progressed rapidly to an enormous size. Palpation showed that the liver was nodular, hard, painless, and extended from the level of the right nipple to the iliac fossa, occupying the umbilical region and the entire right hypochondrium. The only symptom complained of was slight dyspnea. There was no ascites, but the lower extremities and the scrotum were edematous. There were brown skin patches over the entire body, and five soft nodular subcutaneous tumors in the skin of the lower abdomen. It is not stated for how long the skin pigmentation and nodules had been present. Biopsy of the nodules showed the structure of vascular fibroma (angiobroma); no nerve fibers could be detected. Radiographic investigation of the gastro-intestinal tract showed nothing abnormal, except displacement of the stomach and right colon to the left. About a month after admission the patient's condition suddenly grew worse; he became very dyspneic, ascites and bilateral pulmonary congestion rapidly developed, and death occurred three weeks later. At necropsy the liver was found to be riddled with black nodules, large and small. Nodules were found in the kidneys, lungs, pleura, heart, and testicles; innumerable disseminated knots were seen in the peritoneum, great omentum, cerebral meninges, sternum, ribs, and cranial bones. The liver tumor and the metastases gave the reactions of melanin. The eyes and the suprarenals were normal.

The authors suggest that this case represents a histogenetic entity, which they term in one place neuro-ectodermatosis and in another neurofibromatosis (" in the sense of P. Masson "), combining a visceral form and a cutaneous form, the first being the primary hepatic melanoma and its metastases and the second the pigmented nevi. [It seems less of a strain on the imagination to consider the case one in which the two diseases happened to coexist.] There are no illustrations.

F. Cavers

Biliary Pigmentation in the Metastatic Nodes of a Case of Hepatoma, N. Takizawa.


In a forty-five-year-old patient coming to autopsy the author found a primary parenchymal carcinoma of the liver with metastases to the peritoneum. Histologic examination of the metastatic nodes demonstrated the presence of bile pigment in the reticulo-endothelial cells. This, it is felt, represents a case of extra-hepatic pigment formation, since there was neither clinical nor pathological evidence of biliary stasis and no pigment was found in other normal tissues. There is one illustration and a short bibliography is appended.

Theodore S. Raiford
A man of thirty-five had for four months had edema of the legs, weakness, flatulence, frequency of urination, and jaundice. Fifteen years previously he had amebic dysentery, and he had taken Fowler’s solution ever since, on account of herpetiform dermatitis. He showed typical arsenical pigmentation, ascites, obstructive jaundice, and an enlarged liver.

To the few cases of accessory liver so far recorded the author adds one in which the extra organ was of unusual size and, in addition, was the seat of a carcinoma. Metastases were found in the lungs. The patient was a male, sixty years of age, with a history of chronic alcoholism.

A woman of fifty had, seven weeks before hospital admission, developed aphasia and right hemiplegia, attributed to cerebral thrombosis (verified at necropsy). She had become restless, mentally confused, and cyanosed. Two weeks after admission she had an attack of vomiting which lasted for several days, and death occurred a few days later. Necropsy revealed an apparently primary adenocarcinoma of the wall of the gallbladder, with metastases in practically all the lymph node regions of the body. There are seven good photomicrographs.

In a man of seventy-three complaining of acute abdominal pain radiating to the right shoulder, and of vomiting, but with no symptoms of jaundice, the gallbladder was enlarged and tender. This was removed, and was found to contain about ninety stones and to be the site of squamous-cell carcinoma. When seen later the patient complained of attacks of vomiting and there was a nodular mass in the liver.

The authors report the case of an eighteen-year-old girl who died in a state of typical hypoglycemic coma and convulsions four and one-half months after the onset of symptoms. Exploratory laparotomy three and one-half months after the onset of symptoms disclosed a large tumor of the pancreas and multiple metastatic growths in the liver. Histologic study of one of the liver nodules showed the tumor to have an arrangement which simulated that of the islands of Langerhans in a more embryonic state. So far as is known, this is the youngest patient with a carcinoma of the islands of Langerhans and metastases to the liver associated with hyperinsulinism whose case has been reported in the literature. The course of the disease in this case was the most rapid of any yet recorded. The article is not illustrated.
RETROPERITONEAL AND OMENTAL TUMORS


Six cases are described in detail. These include one case each of perinephric abscess, perinephric hemorrhage, angiosarcoma of unknown origin, a cyst supposedly arising from urogenital remnants, and two cases of carcinoma of the adrenal gland. Pyelography is useful for the differentiation of such lesions. There are 18 illustrations.

Theodore S. Rainford


Brief report of a fibroma of the great omentum removed from a woman of fifty-eight admitted to hospital on account of biliary colic, followed by jaundice. A large stone was removed from the common bile duct. There is one illustration.

F. Cavers

THE SUPRARENAL GLANDS


While undergoing an intensive course of antiluetic treatment, a man of forty-five developed a diffuse eczematous eruption. During their healing the papules and squames became dry and darkly pigmented; they were apparently not examined histologically in any stage of development. There was also bilateral inguinal adenopathy, biopsy of which showed only lymphoid hypertrophy. A tumor was felt in the left hypochondrium, but x-ray investigation of the gastro-intestinal tract showed nothing abnormal. The patient became increasingly weak, with great diminution in arterial pressure, and died in coma a few weeks after admission. At necropsy there was found in the left suprarenal gland a tumor diagnosed as hypernephroma malignum. No histologic description is given.

F. Cavers

Carcinoma of the Suprarenal Cortex with Virilism, Decherf. Epithéliome cortical de la suprâ nale gauche; ablation; mort subite, Lyon chir. 30: 731-732, 1933.

A woman of twenty, whose complaint was continuous headache which had begun about a month previously, said she had had amenorrhea for about eight months and had become increasingly weak. There were signs of virilism, consisting chiefly in general hirsutism and change of voice. Radiography showed a tumor in the left renal region, found at operation to be a greatly enlarged left suprarenal gland, easily removed because it was only slightly attached to the kidney. The patient died suddenly three days after operation; necropsy was not permitted. The tumor was a typical cortical carcinoma; it contained no adrenalin.

F. Cavers


The authors cite a case of hirsutism, rapidly acquired obesity, and hypertension in a nineteen-year-old female, of nine months' duration. Hormonal studies revealed 5,000 mouse units of female sex hormone per liter of urine. Shortly after admission an abscess of the thigh appeared and death occurred a few days later. Autopsy demonstrated a large retroperitoneal tumor just above and pressing downward upon the right kidney. It compressed the vena cava and was firmly attached to the under side of the liver. Cut section showed a lobulated butter-yellow appearance with evidence of old hemorrhage. Microscopically this was thought to be a carcinoma arising from the...
adrenal gland. Serial sections of the pituitary gland demonstrated a small circum-
scribed miliary nodule. This was at first regarded as a pituitary adenoma, but on
differential staining it was found not to conform to the usual type of anterior lobe
basophilic adenoma. While it was, therefore, impossible to arrive at a conclusive histo-
logic diagnosis, it is suggested that this lesion may in part have accounted for the masu-
linization of the patient and was in some way associated with the adrenal tumor. There
are no illustrations. The literature is briefly reviewed and similar cases are cited.

THEODORE S. RAIFORD

Tumors of the Adrenal Gland: A Clinical Report of Two Cases, H. CULVER AND M.

The authors report the histories of two patients with tumors of the adrenal glands.
One was a thirty-five-year-old woman with a malignant hypernephroma and the other
was a three and one-half-year-old child with a malignant ganglioneuroma. Both tumors
were successfully removed surgically. The follow-up in each case is for a period of only
two months after operation. The article is illustrated with roentgenograms, photograph-
graphs of gross specimens, and photomicrographs.

BENJAMIN R. SHORE

Suprarenal Paraganglioma with Paroxysmal Hypertension, J. BAUER AND R. LERICHE.
Zur Klinik und Therapie des Paraganglioms Adrenologene Hochdruckkrisen, Wien.

This paper contains a more detailed account of a case previously published by
Leriche (Lyon chir. 31: 355, 1934. Abst. in Am. J. Cancer 23: 671, 1935), a fuller dis-
cussion of the relation between paroxysmal hypertension and adrenal tumors, and a
more extensive bibliography. Rowntree and Ball collected 29 cases of this kind

F. CAVES


The specimens referred to in the title were obtained at necropsy on children. One
was of the right suprarenal (Hutchison type) in a two-year-old boy, with metastasis in
the right orbit. The other was of the left suprarenal (Pepper type) in a girl of three
months, with a large metastasis in the liver. Both patients had shown malnutrition and
irritability, and the disease had run a rapid course.

F. CAVES

Some Dysfunctions Caused by Neoplasm, Especially of the Adrenal Gland, W. C.

The patient whose case is reported began to show evidences of precocious puberty
before he was one year of age. Rapid growth and precocious sexual development con-
tinued until the boy was eleven years old. At that time he suffered acute abdominal
pain and presented the signs of a ruptured intraabdominal viscus. At operation a
bleeding and partially ruptured retroperitoneal tumor was found. Seventeen days
after this exploratory operation an attempt to remove this tumor through a kidney
incision terminated fatally. Histologic study of the growth showed it to be a malignant
tumor, probably arising from the adrenal cortex. One drawing and one photograph of
the gross specimen are included.

BENJAMIN R. SHORE

THE FEMALE GENITAL TRACT

Surgery or Radiation in the Treatment of Gynecologic Diseases, H. KAMNIKER. Op-
erieren oder Bestrahlen in der Gynäkologie, Wien. klin. Wehnschr. 47: 1573-1578,
1934.

This is a general discussion of the surgical and radiologic treatment of neoplastic and
inflammatory diseases of the female genital tract. No new material is added.

BENJAMIN R. SHORE
Malignant Growths of the Uterus and Ovaries with Special Attention to Treatment, 
This is a general discussion of the diagnosis and treatment of malignant tumors of the 
uterus and ovaries. No new material is added.

Consideration of the Carcinoma Problem as Especially Applied to Carcinoma of the 
This is a general discussion of the present status of cancer from a clinico-pathological 
point of view by an experienced writer, with particular reference to the diagnosis and 
treatment of uterine carcinoma. A plea is made for the use of combined surgery and 
radiation in selected cases of cancer of the cervix instead of routine adherence to radiation 
alone, as is now the practice in many clinics in America. There is no new material.

The author urges immediate examination of every woman complaining of unusual 
uterine hemorrhage, and biopsy excision of suspicious cervical lesions or curettage of the 
uterus.

Effective Attack on Cancer: III. Results of Comparative Colposcopic and Microscopic 
Examinations of the Cervix Uteri, Friedrich Lüne. Wirksame Krebsbekämpfung 
(III. Mitteilung.) (Ergebnisse kolposkopischer und mikroskopischer Untersuchungen 
der Portio uteri und ihr Vergleich), München. med. Wehnschr. 81: 1964-1965,
1934.
Hinselmann found about 450 women, among some 18,000 examined with the colposcopic 
during the past ten years, in whom there were areas of leukoplakia or other abnormalities in the cervical mucosa. Such cervaxes were amputated and cut into from 
12,000 to 20,000 serial sections. Among 500 microscopically examined up to the appearance of a recent paper, the lesion had progressed to what Hinselmann regarded as malignant change in 100 (20 per cent). Yet these cervaxes all appeared normal to the 
naked eye. The women had sought advice for various gynecological complaints and 
in not one had the presence of carcinoma been suspected. The diagnosis could not 
have been made, therefore, without colposcopic examination.

These observations are of such fundamental importance that the author wished to 
verify them. Sections from 87 of these patients were accordingly sent, by agreement 
with Hinselmann, to three pathologists of wide experience (Robert Meyer, Rösse, and 
Schridde), only the name of the patients appearing on the slides, in order that judgment 
might be unprejudiced. After each of these authorities had examined the entire series 
of slides for himself, all met with Hinselmann to discuss them, after which the three 
consultants issued the following report:

"The value of colposcopy can be assessed only after the examination of serial 
sections by expert pathologists. Hinselmann's material is unprecedented in both 
difficulty and extent, but of the 87 slides which he diagnosed as either possible or undoubted carcinoma we consider a half to be as he said. It is to be hoped that his 
method will result in the earlier diagnosis of malignant disease."

The diagnoses of these three investigators differed in only a few instances, and then 
only according to whether clinical considerations or strictly academic criteria prompted 
their opinions. They received the impression that the material to which they were 
accustomed could be more definitely pronounced malignant or non-malignant.

Thus in about 10 per cent of patients with leukoplakia or other apparently benign lesions of the cervix, carcinoma was already present. Even though this is a smaller proportion than Hinselmann gave, it is still large enough to demonstrate the value of 
colposcopy for early diagnosis.

Wm. H. Woogom

In a previous paper (Compt. rend. Soc. d. biol. 115: 605, 1934. Abst. in Am. J. Cancer 21: 722, 1934) two of the authors reported that in 13 out of 25 cases of cervical cancer, the urine gave a positive Aschheim-Zondek reaction for prolan A. They have now examined anew 10 of the patients by an interferometric method, of which they give no details but which they state gave negative results in all the cases, though in 5 of the 10 patients the Aschheim-Zondek reaction was positive.


The first of these reports refers to a case in which a cervical cancer was diagnosed in the seventh month of pregnancy. The authors decided against the use of radium on the ground that the cervix was too hard and the internal os too small to allow insertion of radium tubes without danger of inducing premature labor. They treated the cervix by electrocoagulation, which caused considerable reduction in size of the tumor, and a month later did a cesarean section and total hysterectomy.

Keller reports three cases observed during two years in a total of over 4000 accouchements. The tumors were detected in the 7th, 8th, and 9th months. The first patient refused hysterectomy, and some months after the birth of a healthy child returned in an inoperable condition; she was given radium treatment, but died shortly afterwards. In the second case normal labor occurred before the result of biopsy was reported. In taking the biopsy a rather deep cut was made, causing severe bleeding, and infection ensued; hysterectomy was done, but the patient died from septic peritonitis a few days later. In the third case the cancer was found incidentally during prenatal examination. Treatment consisted in cesarean section followed by total hysterectomy and deep x-ray applications. The author adds that in all three cases the cervical cancer could have been detected had careful examination been made at an earlier stage of pregnancy.


The writers report that of 10 cases of complete uterine prolapse treated at the Barnard Skin and Cancer Hospital, St. Louis, in a period of five years, 4 showed carcinoma of the cervix. From this it is deduced that the association of cancer and prolapse is not nearly as rare as has been traditionally supposed, a fact which is not surprising in view of the chronic irritation to which such cervices are subjected. Vaginal hysterectomy was done in all four cases and is considered the treatment of choice. In none had the period of follow-up reached two years. These tumors are usually of low-grade malignancy.

The literature is briefly reviewed. There are no illustrations. John S. Lockwood


The author has used the electrosurgical method of Hyams (Am. J. Obst. & Gynec. 25: 653, 1933) in 212 cases of chronic cervicitis, with gratifying results. The valuable features stressed are, first, the eradication of all the chronically infected gland-bearing tissue by the conization, without excessive scarring and blocking of lymphatic drainage; second, adaptability to office use, making possible the effective treatment of trivial lesions; third, the rarity of complications, immediate or remote. The method is advocated as a logical means of cancer prevention, and as a means of preparing fungating carcinomas for radiation.

John S. Lockwood

This report is based upon the 1558 patients with carcinoma of the uterine cervix seen in the University Woman's Clinic in Breslau from 1913 to 1928. In 348 cases the tumors were so advanced at the time the patients were first seen that no hope of cure by any means of treatment could be entertained. In order to demonstrate the more favorable results obtained in the surgical and radiation treatment of these growths with increasing knowledge and experience, three groups of patients arranged chronologically were studied. The first group comprises those patients seen from 1913 to 1919, the second from 1919 to 1925, and the third from 1925 to 1928. An absolute five-year curability rate of 14 per cent was obtained in the earliest period, of 19 per cent in the intermediate period, and of 23 per cent in the last period. In the group of cases in which the tumors were considered operable and were either treated by operation or primary irradiation, five-year cures were obtained in 27 per cent of the patients in the earliest period, in 30 per cent of those in the intermediate period, and in 52 per cent of those in the most recent period. Radiation treatment of the advanced and inoperable tumors produced five-year cures in 4, 7, and 16 per cent respectively of the cases in the three groups.

The technic used in the University Woman's Clinic in Breslau for treating carcinoma of the cervix with x-ray and radium is described in detail.


Dietel has collected the available literature between 1912 and 1928 dealing with the results of radiotherapy in inoperable carcinoma of the cervix. This material comprises 7814 cases from 40 different reports. Symptomatic cures were obtained in 11.3 per cent of these cases. Statistics for complete cures were available in only 15 reports, including 3733 cases, and for these the average figure was 9.7 per cent. Comparing the effects produced by various types of radiation the author finds combined x-ray and radium decidedly more efficient than either used alone. There is a comprehensive bibliography.


From June 1926 to August 1928, 119 patients with carcinoma of the cervix uteri were treated with radium and x-rays by the author; 8 additional patients seen during this time had growths too advanced for any type of treatment. Five patients died of peritonitis and general sepsis within three weeks after radiation therapy was begun. Clinically the tumors of 18 patients belonged to Group I, 36 to Group II, 60 to Group III, and 13 to Group IV. Five-year cures were obtained in 23 of the 127 cases, an absolute curability rate of 18.1 per cent. Seventeen of the 54 patients with tumors of Groups I and II lived for five or more years, a relative curability rate of 31.5 per cent.


A short paper tabulating the reported series of cases of cancer of the cervix, together with those from the Marie Curie Hospital, London. A short bibliography is included. The conclusions drawn are that, by perfecting methods of distributing the radium and adapting the treatment to the individual case, it has been possible to obtain improved results. It is also probable, though not yet statistically proved, that the addition of heavy x-radiation as an adjuvant to the radium treatment will improve the figures moderately.

In order to aid radium treatment of the local lesion and to cover the usual parametrial and regional lymphatic zones, the author selects a field reaching from just below the navel to just below the crural arch, measuring 20 cm. long and 18 cm. wide; a target skin distance of 50 cm.; filtration of 2 mm. Cu and 2 mm. Al; 3.5 ma., and 200 kv. Four fields each receive a total of 2400 to 2700 r, of which 1/3 to 1/2 is transmitted as depth dose. One or two treatments of 300 r each are given daily, and the approximate depth dose is measured by the Hammer ionometer placed in the vagina. At the same time an x-ray film records the approximate site and symmetry of the parts; and the author stresses the value of measuring in each case the skin-cervix distance. The latter varied from 7 to 16 cm. in different subjects; and was generally longer when taken from the posterior pelvis. Ionometer measurements likewise varied from 180 r to 100 r or 50 r in different patients all receiving 300 r to the skin.

While Gunsett considers the delivered dose should not exceed 3500 r, Nemours does not hesitate to give a total depth dose of 5000 r. Proctitis and diarrhea occur quite as often from early treatments as at the conclusion, and when severe are usually attributed to cancerous invasion of the rectum. Occasionally a perineal and a vaginal field are added.

The author agrees with Gunsett that the cutaneous dose should be abandoned in favor of the intravaginal depth dose.


The author believes that more thorough irradiation of the parametrial and other pelvic tissues can be obtained in the treatment of uterine cancers by the use of intravaginal roentgen therapy administered through a specially constructed tube. Reactions in the rectum and bladder are much less with this method than is apt to be the case when radium is used. Injury to the vaginal wall has not been observed in 80 cases so treated. The end-results in this series of cases are as yet not available.


Of 78 patients with cervical cancer seen at the Geneva gynecological clinic during the years 1930 to 1933, 15 received no treatment. Of these, 3 refused treatment of any kind, and the remainder were in a hopelessly advanced stage and died within a few weeks or months. Of the remaining 63 patients, 3 were treated palliatively with x-rays, 3 were operated upon, and 8 were treated by radium alone; of these latter, 7 were operated upon four to six weeks later. The remaining 49 patients were treated by radium alone (13 cases) or by radium followed by x-rays. The total x-ray dosage was 9000 r during 1930-31. The radium used was 50 mg. filtered with 1 mm. of platinum applied for six days or from 6000 to 8000 mg. hours. The x-radiation began one to two months after the radium treatment. Exposure was made through six portals giving 200 to 220 r each day. The number of exposures was in general 48, the fields varied from 300 to 400 sq. cm., the voltage was 200 kv., and 2 mm. of copper was used as a filter. During 1931-33, the pelvic tissues were given 14,400 r. At the end of 1933 it was realized that the total dosage given during the second period was excessive, since treatment was followed in most cases by diarrhea, proctitis, anemia and leukopenia. In the majority of the cases the cancer, though checked for a time, resumed rapid growth and extension. The total dosage now in use is 10,000 r, and untoward side effects have so far been much less frequent.

Radiation of the pelvic nodes is useless, as too large a volume of tissue has to be exposed. The only thing to do is to confine the x-radiation to a small fixed area about the uterus. The patients then are not damaged. If the growth is more extensive the situation is hopeless from the start.
The author deplores the fact that in Switzerland the state makes no financial provision whereby patients can be hospitalized during irradiation treatment for uterine cancer. An excellent bibliography is appended.

**Supplementary Radium Treatment for Patients with Carcinoma of the Uterus Treated by X-rays**, H. Wintz. *Die Radiumzusatzdosierung bei der Röntgenbehandlung des Uteruskarzinoms*, Strahlentherapie 51: 441-452, 1934.

Wintz has shown that patients with carcinoma of the uterus can be cured with x-rays alone. From 1921 to 1926, 97 patients with carcinoma of the cervix were cured, and in 75 of these cases only roentgen irradiation was used. Twenty-four of 36 cured patients with carcinoma of the body of the uterus received roentgen irradiation alone. [It is to be regretted that the author has not given the number of patients from whom this cured material was drawn so that the "total" results can be compared with those of others.] Although in certain instances application of radium to the local growth may seem advantageous, it has several disadvantages. Manipulation and squeezing of the growth at the time of application of radium can easily be responsible for dissemination of the tumor into the surrounding parametrial tissues. In clinics in which a sufficient amount of radium is not available for the complete treatment of cervical cancers, the author believes that satisfactory results may be obtained by roentgen therapy.


The author describes a device for inserting and retaining in position a number of radium tubes in the body of the uterus. The tubes, joined up by wires and each bearing a small aluminum disk with a number engraved on it, are spread out on a thick oblong piece of antiseptic gauze, which is folded over and inserted as a tampon after dilatation of the cervix, the correct placing being controlled by radiography. There are sixteen illustrations, including good roentgenograms showing the positions of the radium tubes in the uterus.


The author reports a case in which a course of radium treatment was given by a gynecologist to a woman of thirty-one with an ulcerated cervical cancer. Two months later the patient became feverish and on admission to the author's clinic was found to have a parametrial swelling. Blood cultures gave growths of *Staphylococcus pyogenes albus*, from which an autovaccine was made and administered. The temperature fell to normal and remained so for eight days; during this time operation was advised, but declined by the patient. A chill then occurred, the temperature rose, pus appeared in the urine, and death ensued a few days later. At necropsy the chief findings were a large right parametral abscess and bilateral pyelitis. The author points out that an ulcerated condition requires every measure possible to ensure prophylaxis against septic complications. Another point emphasized is the need, when radium is applied in the cervical canal, of keeping on the alert for stenosis above the tumor or applicator, in order to avoid pyometra and septic parametritis and adnexitis.


The three cases here reported indicate that the association of heavy uterine bleeding near the menopause and supposed fibroid uterus should suggest malignant change. Preoperative diagnostic curettage is indicated, with frozen section analysis, in order to avoid the error made in these cases, of performing subtotal hysterectomy with discovery of a previously unsuspected rhabdomyosarcoma [presumably the author means leiomyosarcoma]. X-ray therapy given postoperatively in these cases failed to prevent early death from pelvic recurrences. There are no illustrations.

Eiserth describes an angiofibroma of the uterus, an incidental finding at autopsy following the death of a forty-eight-year-old woman from myocardial disease. The tumor was attached to the right wall of the fundus, was about the size of an apple, firm in consistency and on macroscopic examination appeared to be highly vascular. The diagnosis was confirmed by histologic examination. The infrequency of this type of lesion is emphasized, few similar cases having been reported. There is one photomicrograph, and a short bibliography is appended.


Following a lengthy discussion of the relation between the ovaries and uterine myoma formation and the possible influence of an hormonal factor, the author reviews the operative technic for myomas of various types and the advantages of conservative procedure. At the University Woman’s Clinic in Jena the incidence of myomas among 49,160 patients was 3.7 per cent; 1460 patients were admitted for treatment as follows: local excision, 150; local excision and radiation, 235; conservative operations, 242; radical operations, 757. In 46 cases no operation was done.

The value of conservative procedures is amply proved by the fact that of the 242 patients so treated, only one died following the operation, whereas the mortality in the 757 radical procedures was 1.9 per cent. Further details as to the various types of operation are given in two statistical tables, and the mortality for each is presented. There are four illustrations.

[This is a valuable statistical contribution from the standpoint of operative technic but inasmuch as no late results are given it cannot be considered a complete and well rounded résumé.]


Among 519 cases of uterine fibromata treated by radium alone there was no death. One case of peritonitis occurred which localized and drained through the rectum, one case of transient phlebitis of the leg, and a few transient diarrheas. In a few cases ovarian cysts or degenerated fibromas were mistaken for simple fibroma. Of 94 patients treated by x-rays alone, one died at home after her fourth treatment, presumably of embolism, there having been no intra-uterine manipulation. Thirty-four patients were treated by both radium and x-rays.


Bleeding from fibromatous or otherwise congested uteri was controlled in the majority of cases by electric diathermy of the hypophysis by the method of Ferrier. The d’Arsonval current is applied in small doses, 100 to 200 ma., through frontal and posterior cervical electrodes. In 26 cases of bleeding myoma, the hemorrhage was stopped in 19; the uterus shrank in 20 cases, while failure occurred 6 times. In 12 cases of non-bleeding myoma, uterine regression occurred in 5. The author compares the action to that of posterior lobe extracts [but his cases have not been followed long enough to demonstrate permanent cures] and states that the method helps to differentiate large myomata from large ovarian cysts, and is of value in reducing the size and congestion of tumors before operation.

The author reports an incidence of 0.3 per cent of fibroids complicating pregnancy, a total of 71 cases, in a series of 23,541 deliveries. These tumors must be considered as an important factor in producing sterility, spontaneous abortion, difficult delivery, and febrile puerperal complications. Myomectomy between pregnancies is advised for patients giving a history of repeated abortions. Cesarean section, with myomectomy or hysterectomy, is said to be safer than vaginal delivery in most cases. There are no illustrations.

John S. Lockwood


The authors discuss the forms of phlebitis which may occur in untreated cases of uterine fibromyoma. They conclude that in general it is better to adopt a waiting policy in such cases, postponing intervention until the phlebitis has completed its development. Four illustrative case reports are given.

F. Cavers


A typical chorionepithelioma occurred in the vagina, uterus, and tubes of a twenty-three-year-old woman shortly after the birth of a child. Autopsy revealed, in addition, metastases to the lungs and cystic degeneration of the ovaries. The tumor was composed of syncytium and Langhans' cells, the former predominating in the primary tumor while the secondary growths were made up almost entirely of Langhans' cells. Autolysis of much of the syncytial elements had occurred. The histologic aspects of the tumor are described in detail and the theories of its origin are discussed. There are three illustrations and a short bibliography.

Theodore S. Raiford


There occurs in women a condition known as hirsutism, in the course of which menstruation ceases, superfluous hair makes its appearance, the voice becomes deeper, and the gait and facial expression approach those of the male.

In most of these patients tumors have been found in one or both ovaries, but there have been a few in which the symptoms have been produced by benign neoplasms of the suprarenal. When the growth is extirpated menstruation is resumed provided the remaining ovary be sound, and in several instances pregnancy has occurred.

Thus the tumor exerts an ineretory function which would appear to be a "hyperluteinism." The term hirsutism is not, however, entirely appropriate, for superfluous hair of the characteristic male distribution is associated with many diseases—acidophile and basophile adenomas of the hypophysis, the malignant tumors of the suprarenal which cause precocious puberty in young female children, and the so-called feminine pseudohermaphroditism. In all these conditions there is an enlargement of the suprarenal, suggesting that the pathological growth of hair has its origin in some disturbance of this organ.

It is important to emphasize, therefore, that these ovarian growths give rise to several characteristic symptoms which, taken together, constitute a true syndrome. Their nature is still a matter of dispute. Robert Meyer, who introduced the term arrhenoblastoma, regarded them as members of one single group and referred them to undifferentiated sex cells developing in the male direction, while some have even been designated adenoma testiculare by other investigators. Still other writers have described a luteinoma or an ovarian hypernephroma, while several have recorded the presence of hirsutism in some patients with granulosa-cell tumors.

The author reported in 1932, with Josefson and Fagerström, an unusually interesting bilateral neoplasm exactly corresponding to the growth ordinarily called granulosa-cell
tumor or folliculoma (Acta med. Scandinav. 77: 485, 1932. Abst. in Am. J. Cancer 19: 210, 1933). Histologic examination proved conclusively, and for the first time, that this tumor actually was a folliculoma, for it showed evidence of developments analogous to those seen in the normal ovarian follicle (hemorrhage, atresia). There was an occasional group of cells containing fine fat granules and thus having a certain resemblance to lutein cells, though they could not be identified incontrovertibly as such. Thus the virilizing hormone exists not only in the corpus luteum but in non-luteinized follicles as well.

Since then the author has encountered two similar growths, of which only one was associated with hirsutism, and has also seen a number of patients with hirsutism and granulosa-cell tumors containing no atretic follicles. In one of these neoplasms a perfect ovum was discovered.

After the climacteric, granulosa-cell tumors cause hemorrhage, preceded by several years of amenorrhea which is sometimes combined with virilism and hirsutism.

WM. H. WOGLOM


In consequence of the recent interest in gynecologic endocrinology, new attention has been focused on the granulosa-cell tumors, which from a pathologic standpoint were fully described more than twenty years ago by Robert Meyer and others. About 150 reports of cases are now to be found in the literature. The writers add 24 new cases from the Johns Hopkins Hospital (and data on 12 others) to those already reported and review the salient clinical and pathological features.

Histologically these tumors show great variation, a fact explained by the theory that they are derived from granulosa-cell rests left over from the early oophorogenetic phase of ovarian development. Since granulosa cells have a common origin with stromal and thecal tissue from the ovarian mesenchyme, it is not surprising that in some instances masses of cells indistinguishable from sarcoma are present, as well as the more characteristic picture of clusters of epithelial rosettes having a follicular arrangement, sometimes confused with adenocarcinoma. Variations from this "folliculoid" pattern occur when the granulosal masses are invaded by connective tissue (cylindromatous type, frequently diagnosed endothelioma) or when they grow in large diffuse fields with little stroma (parenchymatous type). Of especial interest is the possibility of a lutein-like transformation of some or all of the cells, producing the so-called luteoma, and giving a progestin reaction in the endometrium. There is great variation in degree of histologic malignancy, which does not necessarily parallel the clinical malignancy.

Granulosa-cell tumors show a well distributed age incidence. Twelve of the author's cases (36 per cent) occurred in the fifth decade. Only 6 patients had passed the menopause, despite the current view that these tumors occur most frequently in elderly women. The menstrual disturbances are those of excessive folliculin production. Tumors before puberty produce precocious menstruation, those during reproductive life cause excessive menstruation, while tumors after the menopause bring about a resumption of the menstrual flow.

These tumors are probably less malignant than ovarian cancer in general; yet 28 per cent of the authors' series showed clinical malignancy. Recurrence, when it occurs, is usually local, but bone metastases have been seen.

The logical treatment is hysterectomy and bilateral salpingo-oophorectomy, although in selected cases among younger patients a more conservative operation may be justified provided the patient is carefully followed for evidence of recurrence. Four of the authors' 9 patients showing clinical malignancy were below thirty-three years of age. Radiotherapy is indicated in inoperable or recurrent tumors.

An exhaustive bibliography and illustrations showing the pathology of the cases reported are included in the article as published in the Transactions of the American Gynecological Society (1934), but these were unfortunately omitted from the Journal for lack of space.

JOHN S. LOCKWOOD

In the University Clinic of Leipzig during the years 1928-1931 there were 8 cases of granulosa-cell tumor among 76 carcinomas of the ovary. This figure indicates the frequency of these tumors, which were formerly regarded as extremely rare.

The case histories of the 8 patients are given in considerable detail, with excellent photomicrographs. In the first 6 patients the typical clinical symptom of bleeding was noticed. This sign is the expression of the hypertrophy of the uterus which, when it occurs after the menopause, can be regarded as strongly suggestive of a granulosa-cell tumor. In the seventh case symptoms of pressure with urinary retention were more prominent, and in this case and the eighth no palpable enlargement of the uterus was noticed. In both of these cases the ovarian tumors were not typical histologically, having a somewhat sarcomatous structure.

It has been stated that uterine bleeding occurs only in cases of carcinomatous nature, but Robert Meyer found a hyperplasia of the endometrium four times in connective-tissue tumors, a fibroma and three sarcomas. He suggested the possibility that both sarcomas and the fibroma may have developed from an original granulosa-cell tumor. Tietze in reviewing the material of the Kiel Clinic noticed that bleeding may occur with many types of ovarian carcinoma, but that a glandular hyperplasia was found definitely only with the granulosa-cell tumor. In the seventh and eighth cases of the present series there was evidence of a redevelopment of the endometrium without, however, the morphological structure of a pathological proliferation, and in spite of the long-standing presence of the tumor there was no bleeding. This, as noted, may have been due to sarcomatous degeneration.

The prognosis in these cases appears to have been very good. All patients could be operated on and all apparently were cured. In one case it was possible to recognize and operate upon a late recurrence.

Howard C. Taylor, Jr.


In a thirty-six-year-old woman a bilateral salpingo-oophorectomy and panhysterectomy were done for a tumor of the right ovary. Histologic study showed this growth to be a granulosa-cell tumor. Two photographs and two photomicrographs are included.

Benjamin R. Shore


The authors report a case of precocious sexual development in a girl of seven associated with a large abdominal tumor and premature closure of the epiphyses of the long bones. The Aschheim-Zondek test was negative prior to operation, but the estrin test was positive. At operation a large granulosa-cell tumor of the left ovary was removed, the right ovary appearing normal. Menstruation then ceased for a period of eighteen months, after which the periods recurred. It was then found that the patient had a similar tumor of the right ovary. This was removed, together with the uterus. Tests for estrin and pituitary sex hormone in both urine and blood were positive before operation. Fourteen days after operation both the Aschheim-Zondek and estrin tests of the urine were negative. Histologically the second tumor was identical with the first. No regression of signs of sexual precocity was observed six months after the second operation and the blood was weakly positive for the anterior pituitary sex hormone at that time.

This is presented as one of the 8 recorded operated cases of this tumor in children, and the writers believe it to be the first one in this country on which extensive hormone studies have been made. There are 4 illustrations, including a low-power photomicrograph. Data on the eight cases are presented in tabular form. John S. Lockwood

The authors cite a case of ovarian carcinoma in which the differential diagnosis was materially aided by the examination of ascitic fluid. Panhysterectomy was done, and when last seen, eight months after operation, the patient was symptom free. There are no illustrations and the case presents no unusual features. Theodore S. Raiford

Apparently Primary Signet Ring Cell Tumor (Krukenberg) of the Ovary, V. Finucci. Su di un caso di carcinoma primitivo del l’ovaio con cellule ad anello con sigillo (tumore di Krukenberg primitivo), Cancro 4: 311-315, 1933.

A woman of twenty-one had for about three months noticed a tumor in the lower right abdominal quadrant. As this increased in size the first sensation of dragging changed to colicky pain with vomiting. At operation a large right ovarian tumor was found, and with difficulty dissected from its dense attachments to bowel and omentum. The left ovary appeared normal. Histologically the tumor showed the extreme vacuolation and signet-ring form of the cytoplasm on which the diagnosis of Krukenberg tumor is made. No sign of a tumor in the gastro-intestinal tract was detected. There are two illustrations.


A case report with some discussion of the clinico-pathological features of this type of tumor. There are no illustrations. John S. Lockwood


A case report without remarkable features. It is illustrated by two photomicrographs. John S. Lockwood


A report of an ovarian cyst weighing 16 pounds, from which 128 pounds of fluid were withdrawn over a period of six days prior to its removal. No pathological study is recorded, and in view of the presence of a large amount of associated ascites this would have been of especial interest. The patient became anemic after operation and died on the thirtieth day, of intestinal hemorrhage. John S. Lockwood


A report of the simultaneous occurrence of acute gangrenous appendicitis and gangrenous twisted ovarian cyst in a patient of thirty-six years. Recovery after removal was uneventful. An attempt is made to relate the two lesions etiologically. There are no illustrations. John S. Lockwood


In order to prevent fatal cerebral embolism following the surgical removal of twisted ovarian cysts, the author suggests clamping and ligating the broad ligament beneath the twisted pedicle before excising the growth. Untwisting of the pedicle before amputation is to be avoided so that thrombi may not be dislodged into the general circulation. One drawing is included. Benjamin R. Shore

Four cases of pelvic endometriosis illustrate the clinical findings typical of the disease. In 3 cases the predominance of menstrual pain and palpable adnexal pathology produced the impression of endometriosis before operation. The seriousness of operative procedures is emphasized. To eradicate the disease in its entirety it is necessary to remove both ovaries, the tubes, and the uterus. Since young women are not infrequently affected, this is a procedure to be approached with hesitancy. Hence each case should be treated as an individual problem and the procedure determined accordingly. There are six illustrations which show the pathological characteristics of the removed lesions. A short bibliography is appended.


This is a general discussion of endometriosis. The histories of two patients with intestinal implants, one of the terminal ileum and the other of the sigmoid, are included. The article is illustrated with a drawing and photomicrographs.


Two of the endometriomas here reported occurred in inguinal hernias, the third in the round ligament, and the fourth in an appendectomy scar. In one of the hernia cases there was no history of associated menstrual symptoms. The author emphasizes that the possibility of endometrioma should be borne in mind when a patient has a lump in the groin or an irreducible hernia which is the seat of pain during menstruation, that diagnosis requires histologic confirmation, and that incomplete removal is often followed by recurrence. There is one illustration.

**THE GENITO-URINARY TRACT**


Between 1913 and 1933 there were seen at the II. Surgical Clinic of Vienna University 133 malignant renal tumors. In 100 cases coming to operation or necropsy the histologic diagnoses were: hypernephromas (Grawitz tumors) 85, carcinomas 9, sarcomas 4, pelvic papillary carcinomas 2. In 82 cases the patient complained of hematuria, in 20 of a self-observed tumor, in 73 of pain in the kidney region; in 8 cases there was varicocele on the same side as the tumor. None of the patients showed skin pigmentation. Fever was present in 11 cases, attributable in two cases to pyelitis, but of undetermined origin in the others. Of the 133 cases, 24 were obviously inoperable, and 13 more proved to be so on exploration; 7 patients refused operation. In the remaining 89 cases nephrectomy was done. In 38 of these cases radical extirpation was not possible, owing to dense adhesions to neighboring organs (12 cases), invasion of and growth in blood vessels (19), and the presence of irremovable metastatic retroperitoneal lymph nodes (11); in 3 cases there were metastases in the spine and in the pelvic bones. In every one of these 38 cases the primary tumor was at least as large as a child's head, sometimes much larger. In the remaining 51 cases the operation appeared to be radical. In all except 3 of the cases in this group the tumor was large, the size varying from that of a man's fist to that of a child's head, but never reaching the dimensions of most of the tumors of the first group. There were no operative deaths in the entire series.

Of the 51 patients radically operated upon, 21 died with recurrence or metastases, and 3 from other causes, during the first year. During the succeeding years the numbers dying from the cancer were: 2nd year 5, 3rd year 3, 4th year 2, 5th year 4. On the other hand, 24 were free from disease three years after operation, and 11 after five years. All the inoperable cases and those in which a non-radical operation was done received x-ray treatment, but none seemed to show improvement attributable to this; all of these
patients died in less than two years, except one man (operated upon non-radically) who survived for four years and a half.

F. Cavens


This is a general review of various aspects of roentgen diagnosis of renal tumors based on the literature and on a series of 100 cases observed in the Cleveland Clinic. Of the latter series, 55 were hypernephromas, 20 carcinomas, 3 squamous-cell carcinomas of the renal pelvis, 16 kidney tumors in children, 3 fibromyxosarcomas, 2 perirenal myxomas, and one sarcoma. In 80 per cent of this group of cases a renal tumor was clinically suspected. Pyelography yielded a positive diagnosis in 64 per cent of the total group and 83 per cent of the carcinomas. The relative merits of retrograde and excretory urography and pneumography are discussed, and certain diagnostic problems are illustrated by typical case reports from the author's series and from the literature. There are no illustrations, but a comprehensive bibliography is appended.

Theodore S. Raiford


If the earlier diagnosis of kidney tumors is to be effected, it must hinge largely on an unfailing and universal recognition of the possible significance of blood in the urine. The grave responsibility which this finding imposes on any physician must also be realized.

Benjamin R. Shore


The author reports a series of 31 renal tumors occurring in a children's hospital during a period of seventeen years. These included one teratoma, 27 nephroblastomas, one carcinoma, and two sarcomas. Necropsy was done in 7 cases; in the remaining 24 cases material for histologic examination was obtained at operation. The teratoma occurred in a boy of seven weeks, born about six weeks prematurely and showing various developmental abnormalities. The tumor was highly complex, containing squamous epithelium with hair follicles and tactile corpuscles, ciliated and intestinal epithelium, embryonal kidney tissue, neuro-epithelium, gliomatous tissue, myelinated nerve fibers, and cartilage.

In 13 of the 27 cases of nephroblastoma abdominal swelling was the initial symptom; abdominal pain was the first symptom in 7 cases, and hematuria in 5. Slight intermittent fever occurred in 14 cases, disturbances of micturition in 3, and tumor cells were found in the urine in one instance. Of the 27 patients, 24 were operated upon; 4 died as the result of the operation and in the remaining 20 recurrence took place, in 11 cases in less than five months after operation. The recurrence arose most frequently in the kidney bed, and grew much faster and attained a larger size than the original tumor, doubtless owing to the removal of the restraining capsule. Metastasis to other organs was found in the 5 necropsied cases, and was diagnosed clinically in 6 of the remaining 22 cases. The sites of metastasis were the lymph nodes 6 (retroperitoneal 4, mesenteric 2); liver 2; pleura 2; lungs, opposite kidney, skin, and vertebrae, one each. Every tumor examined showed masses of undifferentiated cells, most often associated with tubular structures and primitive glomeruli, less often with smooth and striped muscle fibers, and rarely with cartilage, bone, fat, and nervous and hematopoietic tissue. The capsule always showed in some degree infiltration with tumor cells, and sometimes small tumor nodules were seen in the kidney tissue just outside the capsule.

The single carcinoma in the series occurred in a two-year-old boy, as a large right kidney tumor adherent to the abdominal wall and the spine. The child died a week after laparotomy, and as necropsy was refused it was impossible to determine whether the papillary carcinoma found in the excised piece of tumor was only one element in a teratoma. Sarcomas were represented by a mixed round-cell and spindle-cell form in a girl of two and a half years, and a round-cell form in a boy of eleven years.
The average age of the 31 patients in this series was two years and a half, the youngest being five weeks and the oldest eleven years old. The tumors were twice as common in males as in females (21:10). There are twelve good photomicrographs and a short bibliography.

[All the patients operated upon died ultimately, and this corresponds fairly closely with the results of others. As most of these growths are radiosensitive, it is better to ray them first with roentgen rays and then if the tumor shrinks, to remove the mass surgically. There have been some ten-year cures by radiation alone.] F. Cavers


The authors report the case of an eight-year-old boy in whom death was caused by a primary carcinoma of the left kidney one week after the onset of symptoms—shortness of breath, paroxysms of coughing, and hemoptysis. Just before admission to the hospital the patient became unconscious and had a generalized convulsive seizure; he died five minutes after admission. Autopsy showed a primary papillary adenocarcinoma of the left kidney with metastases to the retroperitoneal lymph nodes, pleura, and bronchial lymph nodes, a carcinomatous thrombus in the left renal vein, and a carcinomatous embolus in the main pulmonary arteries.

The clinical features of carcinoma of the kidney in childhood bear a striking resemblance to those of sarcoma. This is a disease of signs rather than symptoms. The presenting sign is usually an enlarged abdomen, which often leads to the discovery of a tumor mass. Hematuria is rare. Pain seldom occurs and is more likely to consist only in a sense of discomfort from the presence of the large mass. Anemia and emaciation appear late in the course of the disease and are frequently absent when the patient first comes under observation. The only therapy offering any hope of cure is nephrectomy. Tendency for metastases to be absent or late in the large majority of cases, however, leads to the hope that the end-results will be improved with earlier diagnosis.

Two photographs of the gross specimen and two photomicrographs are included.

Benjamin R. Shore


A boy of nine months had a large abdominal tumor which was found at laparotomy to arise from the right kidney and to be so densely adherent to the intestine as to make removal impossible. Biopsy showed the structure of adenosarcoma (Wilms tumor), and prognosis appeared hopeless. However, the child remained in good health until more than five years later, when he was brought to hospital with lobar pneumonia, from which he made a good recovery. A small, firm, nodular mass was then felt in the right kidney region and the right kidney was found to be completely functionless.

The author considered that the malignant tumor had undergone regression, probably by a process of fibrosis, and thought that on the whole it would be wiser to refrain from intervention, since an attempt at removal might stimulate any latent malignant cells into activity. On the other hand, the tumor if left might begin to grow again. J. N. O'Reilly, commenting on the case, said that in relation to the decrease in size of the tumor two points arose: the tumor would occupy a relatively much larger space in the abdomen of a baby of nine months, and the possibility of a hydronephrosis having been present and increased the size of the original tumor should not be overlooked.

[At present the tendency is to ray these tumors, which are often neuroblastomas and very sensitive, and then remove the remnant by surgery. The present writer has seen a ten-year cure by radiation only.] F. Cavers


A woman of thirty-two had six years previously noticed a painless swelling in the right loin. Four years later the tumor, which had increased in size, was explored, and a cyst connected with the right kidney was found, but nothing more was done because
the function of the opposite kidney had not been investigated [1]. There was no history of hematuria or urinary frequency. Two years after this pyelography showed dilatation of the upper part of the renal pelvis and obliteration of the calyces. The kidney was removed and in the lower pole was a yellow tumor of hypernephromatous structure.

F. Cavers

Renal Tumor (Hypernephroma) Causing Minimal Subjective and Objective Symptoms,


A woman of forty-one had for about a year noticed slight pain in the right flank. More recently she had had nausea and sometimes vomiting in the morning, which caused her to suspect pregnancy, though the menses were regular. In the right flank was a hard tumor about the size of a child’s head. The sole other symptom noticed had been the occurrence of several attacks of oliguria, each lasting for a few days. Dye tests revealed no excretion rate difference between the two kidneys. The urine from the right kidney contained 14.6 mg. per cent urea and 7.3 mg. per cent chloride, the corresponding percentages in that from the left kidney being 15.7 and 6.4. Pyelography showed slight dilatation of the right pelvis. There had been no hematuria, and no blood cells were seen in the urine. At laparotomy a large tumor was found in the lower pole of the right kidney, and nephrectomy was done. The tumor was diagnosed histologically as a hypernephroma. No metastases were detected at operation, but four months later the patient died and necropsy revealed metastatic deposits in the liver and both lungs. The author reports the case to show that the symptoms of renal tumor may be practically reduced to the single finding of the tumor itself. There are three illustrations.

F. Cavers


In this excellent review the author emphasizes the fact that connective-tissue tumors of the renal pelvis are rare and usually benign—fibromas, myxomas, etc. Among the epithelial tumors the chief types are the benign papillomas or fibro-epitheliomas, the malignant papillomas, and the non-papillary carcinomas. It is, however, difficult to draw a sharp line between benign and malignant papillomas, since there is definite evidence that the former may undergo malignant change. Four cases of malignant papilloma are reported here. In only one case was a calculus present, and the papilloma had developed at such a distance from it as to preclude any etiologic relationship between the stone and the tumor. This was the case followed for the longest period, the patient being well more than three years after operation. There are eight good illustrations.

F. Cavers


A man of thirty-six had for about nine years suffered from left renal colic and on several occasions had passed stones and sand. Dye excretion showed great delay on the left; the urine from this kidney contained 5.85 mg. chlorides per 100 c.c., that from the right 8.19 mg. Radiography indicated a tumor of the left renal pelvis. At operation this was found to be but slightly adherent and was readily removed. It showed the typical structure of cholesteatoma, with epithelial pearl formation, but contained no cholesterol crystals. Eighteen months after operation the patient was still free from renal trouble, and excretion tests showed that the left kidney was functioning almost as well as the right. The histologic description is meager, and there are no illustrations.

F. Cavers


The kidneys of 15 of 59 patients with malignant bladder tumors seen during the past two years have been studied by intravenous urography. Four of these 15 patients
showed evidence of normal bilateral function and 4 others showed varying degrees of hydronephrosis. In 7 instances unilateral, apparently non-functioning kidneys were found. In each of these 7 cases the urograms showed on one side the shadow of an apparently normal renal outline but, in no plate, was there the slightest evidence of excretory function. In each of these 7 cases the functionless kidney was on the same side as the evident bladder growth, there being an obvious relationship between tumor, ureteral involvement, and the unilateral failure of renal function. In each of these cases the renal death had been silent, entirely symptomless, and totally unsuspected. The one outstanding feature was the apparent total absence of evidence of hydronephrosis, and one must think, not of a diffuse atrophy, but of a silent renal death or a unilateral reflex anuria. These patients have not shown any symptoms of renal insufficiency and have shown no change in the blood chemistry.

It is the author's belief that these kidneys are physiologically dead and have no power of recuperation. Analogies may be found in the frequency of pylorospasm in appendiceal irritation and in hyperchlorhydria, and the suspension of gallbladder function sometimes associated with duodenal ulcer. One might even think of this unilateral suspended kidney activity as perhaps dependent on a protective reflex where, with one unhampered kidney to carry on the required amount of bodily work, its embarrassed mate ceases to function. The article is without illustrations.

Benjamin R. Shore


This is a detailed and critical account of aniline bladder cancer, in which the literature of the subject published in Central Europe, Great Britain and North America is brought together and carefully analyzed. There is an extensive bibliography.

F. Cavers


The author has previously reported 20 cases of malignant neoplasms of the bladder treated by cystostomy and implantation of radium needles. Five further cases treated by the same method, all symptomatically improved, are reported, but have been followed less than a year. Of the 22 cases followed from the former group, 15 showed good results and 7 poor ones. In this group were 4 severe cases well after eight years, seven years, four years, and twenty months respectively.

The preoperative preparation is important. Visualization of the urinary tract is done with uroseletan. The retention and infection are treated by daily bladder irrigations or by an indwelling catheter, thus permitting cystostomy and application of radium in one stage. At the operation, after anesthesia has been induced, the bladder is thoroughly irrigated with weak iodine solution or 1:1000 mereurochrome solution. The edges of the incision are protected by gauze to prevent possible implantation of tumor fragments. A diathermy knife is preferred. Adequate exposure of the tumor is necessary. The larger excrescences are electrocoagulated and the radium needles inserted 1.5 to 2 cm. apart, parallel with the bladder wall, care being taken to reach the base of the tumor. In his last two cases, the author sutured a small lead-rubber screen over the tumor area to protect the remainder of the bladder mucosa. This is held in place by a rubber balloon filled with 50 to 60 c.c. of antiseptic solution.

After operation, bladder irrigations are done several times daily. The needles are removed in five to seven days. The cystostomy wound is left open for a fairly long period, to permit easy observation of the tumor and to prevent the formation of stones.

There are no illustrations and no bibliography.

C. R. Mullins
Experimental Pathology of Ureterorectal Implantation in Operations for Bladder Carcinoma, F. Sanz de Frutos. Tratamiento del cáncer de la vejiga. Fisiología patológica de la implantación uretero-rectal (estudio experimental y clínico), Arch. españa. de oncol. 3: 317–393, 1933.

In experiments with dogs the author found that Coffey's first technic of rectal implantation of the ureters was much easier to perform and had a much lower mortality than the less frequently used second and third methods. He gives very full details of the results obtained in six successful experiments. In each case following colostomy, one ureter was implanted into the rectum. Air, water and dyes introduced into the rectum under pressure ascended equally in two manometers, one inserted directly into the rectal wall, the other into the ureter well above the point of implantation. There was no evidence of the existence of a true valvular mechanism, and each of the animals showed hydronephrosis as well as more or less enduring and severe ascending infection. The histologic changes in the implanted portion of the ureter are described in detail. In the final stages (56th day) the disappearance of the ureteral mucosa and muscle had been followed by such intense fibrous proliferation that the ureter was now a rigid tube showing no deformation when liquid was introduced rectally under high pressure. There are thirty illustrations, and the author adds an extensive bibliography, mainly of North American publications.

F. Cavers


A man of fifty-nine had during the past six months suffered from polyuria and dysuria, and latterly had had slight hematuria. Cystoscopy revealed a small, ulcerated, bleeding tumor on the right side of the trigone. Electrocoagulation was done twice, but was followed by great aggravation of the symptoms and no change in the cystoscopic appearances. Rectal palpation showed that the tumor was really a hard, nodular enlargement of the prostate, and suprapubic enucleation was done, with apparent success. Seven weeks later the patient returned complaining of pain radiating to the rectum and perineum. The right inguinal nodes were enlarged, and the urine was purulent. The further history is not given.

The tumor cells were of two types: some rounded, others spindle-shaped and showing definite cross striation. Both types showed numerous and often atypical mitosis. Six fairly good photomicrographs accompany the report.

F. Cavers


Among the industrial policy holders of the Metropolitan Life Insurance Company there were 125,740 deaths due to cancer during the twelve-year period from 1917 to 1928 inclusive. Bladder cancers caused 3315 deaths, prostatic cancers 1904 deaths, and cancer of the kidneys and suprarenal glands 1332 deaths. The outstanding item in the mortality statistics of cancer of the kidneys is the relatively large number of deaths that occur among children and young adults. Of the 1332 deaths, 313 or 23.5 per cent were those of persons between the ages of one and twenty-five years. Analyses of the statistics according to year, sex, color, and age are included in tabular form.

Benjamin R. Shore


That carcinoma of the penis is a relatively rare condition is attested by the fact that during 1931 only 6 cases were observed among 1992 male patients with cancer of all types at the Mayo Clinic. The total number seen from 1907 to 1932 was 195. In 87 of this group phimosis was observed. The Jewish race is almost entirely immune, due probably to early circumcision.

For the present study the authors have divided the lesions into four groups, depending upon the extent of the primary lesion and the presence or absence of metastases.
Grossly the lesions may be either papillary (usually on the glans) or infiltrating (usually on the prepuce). Histologically the vast majority are squamous epitheliomas. According to Broders' classification the majority were of Grades I1 and I11. As a rule, the slow growth of the lesion is evidenced by the long duration of symptoms.

Forty-one patients were placed in Group I. These were treated by various operative procedures from local excision to amputation of the penis, and in some instances with radiotherapy. Fourteen were known definitely to have died. Thirteen lived from one to five years, and 23 survived five years or more. The second group contained 36 patients with small lesions with metastases. Following therapy of diversified nature 19 were known to have died. Twenty-one lived from one to five years, and 12 more than five years. Thirty-two cases were classified as in Group III (large lesions without metastases). At the time of this study 17 had died. Twenty-one lived from one to five years and 10 passed the five year period. Group IV contained 86 cases or 44.1 per cent of the total. Of this group, 56 were known to have died; 54 lived from one to five years and 19 lived longer than five years. Thus of the entire group of 195 cases 64, or 32.8 per cent of those followed, were regarded as five-year cures.

From these figures it is concluded that therapy must depend upon the individual type of lesion; that, in general, surgery combined with x-rays or radium or both offers the best prognosis; that, in view of the slow growth of the lesion, a reasonable number of cures may be expected. Irradiation alone is of value from the palliative standpoint. The importance of early diagnosis and treatment and of circumcision as a prophylactic measure are emphasized. There are no illustrations, but the statistical data are set forth in four tables. This group of cases is by far the largest single series thus far reported. A short bibliography is appended.

Theodore S. Raiford


In treating carcinomas of the penis, the authors prefer the use of radium needles. Surgery is employed only for biopsy or inguinal gland dissection, for such complications as phimosis, or in certain instances for cystostomy.

Twenty cases are reported in detail, covering a period of seven years. Sixteen, or 80 per cent, showed no evidence of metastases to the inguinal nodes, though some had inflammatory inguinal adenopathy as shown by biopsy. Of these 16 patients, 7 are well from six months to seven years, 2 having passed the five-year period. Two died without evidence of recurrence at ten months and four and a half years respectively; one died following surgical intervention, the remaining 6 are dead of the disease or have had recurrences.

Of 3 patients with metastases in the regional nodes, one is well after four years, one died of a postoperative complication, and one died of cancer. The twentieth patient had metastases to both inguinal regions, as well as to the skin of the anterior abdominal wall. He died of pulmonary metastases. Another patient with a large papilloma of the penis was successfully treated by radium needles, being well two years and a half later.

There is a short bibliography, and twelve photographs of gross lesions are included.

C. R. Mullins


This article is a corroboration of the work done by Ferguson (Am. J. Cancer 18: 269, 1934) on Prolan A and B determination for the diagnosis of teratoma testis. Owen is at present following 40 cases of this type by means of routine tests. The technic is described in detail and the interpretation of the results discussed. The importance of preoperative irradiation is emphasized. Ten case summaries are presented from the group of forty as examples of the test application.

Theodore S. Raiford

From 1920 to 1929 inclusive, 155 patients with testicular tumors were seen at the Mayo Clinic. The right testis was involved in 72 cases, the left in 81, and both in 2 cases. Five-year cures were obtained in 3 or 43.7 per cent of 7 patients treated by orchidectomy, in 7 or 30.4 per cent of 23 patients treated by roentgen irradiation, and in 60 or 48.0 per cent of 125 patients treated by combined orchidectomy and roentgen irradiation. The results obtained by surgery and roentgen irradiation may be misleading, since none of the patients in this preferred group had had evidence of tumor for more than one year and all were apparently free from metastasis. On the whole, roentgen ray treatment alone seems preferable for embryonal carcinomas, while for the mixed or teratoid tumors surgical removal combined with postoperative irradiation seems indicated. The article is not illustrated.

Benjamin R. Shore


The authors report two cases. One patient was thirty years of age and had an embryonal carcinoma in an undescended testis. The other was twenty years of age and had a malignant retroperitoneal tumor of unknown character which was believed to have arisen in an undescended testis.

The authors conclude from a study of the literature that there are no substantial facts to prove that undescended testes are predisposed to malignant change. No patient with cryptorchism should be subjected to orchidectomy because of fear of malignant degeneration. The pathology and treatment of carcinoma arising in an undescended testis are the same as those of normally placed organs. One photograph and one photomicrograph are included.

Benjamin R. Shore


A girl of fourteen years had for some months complained of attacks of pain in the lower abdomen, with flushings and spells of fainting. Recently the attacks had been accompanied by vomiting. On combined abdominal, rectal and vaginal examination the pelvis was found to contain a large solid tumor, presumably ovarian. At laparotomy the tumor, which arose by a short stalk from the site of the left ovary, was removed with the left tube and broad ligament. At the site of the right ovary was a small nodule of apparently ovarian tissue in the posterior layer of the broad ligaments; a little to the right of this, in the position of the tubal fimbriae, was a pink nodule with the appearance of a diminutive testis. The uterus and right tube were small but otherwise normal, and as there were no secondary deposits in the omentum or elsewhere, no other genital organs were removed.

The tumor, 11 x 9 x 8 cm., was enclosed by a thin but firm capsule and was microcystic. It contained tissues derived from the three germ layers, some embryonic and others adult in differentiation. The stroma was extensively occupied by plexiform strands of neuro-epithelial cells, mostly undifferentiated but in some instances containing adult nerve fibers and sympathetic ganglia. In some places there were structures suggestive of eye rudiments, consisting of melanin-containing neuro-epithelial strands, nerve bundles, and plain muscle fibers.

Although the greater part of the teratoma was histologically benign, the capsule in the neighborhood of the fallopian tube showed invasion by the primitive neuroblastic cells, and in one of the solid areas there was definitely adenocarcinomatous tissue. In view of these indications of malignancy a second operation was done, the removed mass including the uterus, upper portion of the vagina, right tube and broad ligament, and a right testis and epididymis. The two latter were the nodules seen at the first operation. Examination failed to reveal the existence of ovarian tissue anywhere in the material removed. The testis, 8 x 7 x 5 mm., was located in the normal position of the ovary. The small and atrophic seminiferous tubules contained syncytial masses of degenerated Sertoli cells among which no germinal cells could be distinguished, and in the myxoid interstitial stroma were large groups of interstitial cells.
The patient made a good recovery. Ten months after the second operation she showed no signs of recurrence, and complained only of flushing attacks. It should be added that there was no change in the external genitals, which showed slight underdevelopment but were otherwise normally female. Nor was there any trace of masculinity in the patient’s general build and appearance, though x-ray examination of the pelvis showed this to be of male type. For some months after operation she had become rather obese, but this had passed off. Ten illustrations, chiefly photomicrographs accompany this report.

F. Cavers

THE NERVOUS SYSTEM


This is a general review of the progress which has been made in the diagnosis, localization, and treatment of brain tumors. No new material is added.

Benjamin R. Shore


This is a general discussion of the diagnosis and treatment of brain tumors. No new material is added.

Benjamin R. Shore


This is a general discussion of the changes produced by direct pressure of benign and malignant brain tumors and the pressure resulting from obstruction to the normal flow of the cerebrospinal fluid. Several photographs of gross specimens are included.

Benjamin R. Shore


In discussing the radiographic signs of increased intracranial tension the author points out that in children wide separation of the cranial sutures tends to minimize the effects of persistent high pressure in producing convolutional thinning of the inner table of the cranium, unless the latter is abnormally dense or the sutures have interlocked early. Under the heading of localizing radiographic signs he briefly discusses calcification, erosion, hyperostosis, lateral shift of the pineal gland, and ventriculographic findings. There are 17 good roentgenograms.

F. Cavers


This is a brief but good general account of the various intracranial neoplastic and other lesions in which calcification is of more or less frequent occurrence. It is illustrated by four good x-ray pictures.

F. Cavers


The author reports the histories of 3 patients in whom roentgen evidence of erosion of the roof of one optic canal was a dependable sign in the localization of brain tumors. In two instances calcification in the growths was of distinct aid. In one of the three cases the erosion was found on the side opposite to that indicated by uncertain clinical signs, and a ventriculographic study was necessary for final accurate localization. In a fourth case studied erosion of the roof of one optic canal occurred on the side opposite to that indicated by clinical localizing signs and opposite to the side on which the tumor was
Hemolysin Reaction (Intradermal Reaction) for the Differential Diagnosis between Disseminated Sclerosis, Certain Infectious Processes of the Neuhraxis, and Cerebrospinal Tumors, Laignel-Lavastine and N. T. Koressios. L'hémolysoréaction (intradermo-réaction) permettant de différencier la sélèrose en plaques et certains processus infectieux du névraxe des tumeurs cérébrales ou médullaires, Rev. neurol. 2: 606–612, 1933.

The importance of a specific test for the recognition of disseminated sclerosis will be generally acknowledged. The hemolysin-reaction (Hinds Howell) is such a test, for while it gives a positive result with certain of the infectious processes of the central nervous system, it does permit of a definite differential diagnosis between disseminated sclerosis and tumor of the brain.

Ten individuals suffering from general infections, such as inflammations of the lungs or heart, were tested and gave negative results. Twenty patients with disseminated sclerosis all showed a positive reaction (a local zone of inflammation at the site of infection). Eighteen patients having brain tumors gave a negative result. Fifteen cases of central nervous system disease other than disseminated sclerosis were tested. The cases showing a positive test were those of tabes or epidemic encephalitis.

While clinical examination, lumbar puncture, ophthalmologic studies and ventriculography are the usual diagnostic methods in studying brain tumor, the hemolysin reaction will be found very useful in an occasional case where disseminated sclerosis must be excluded.


This is a general discussion of the local and remote symptoms caused by tumors situated at the base of the brain. Photographs of gross specimens are included.


In this extremely condensed paper the author deals mainly with the meningiomas of the convexity. Most of these are not of dural origin but arise in the arachnoid, especially in the neighborhood of the pacchionian granulations. Special attention is called to Cushing's work, and to Olivecrona's distinction between meningiomas of the anterior, middle, and posterior thirds of the longitudinal sinus, and the syndromes which aid in their diagnosis. No cases are reported.


After having compared the various classifications of glioma the author takes up their histology. This he finds difficult to describe on account of the great variation from one tumor to another and even from field to field in the same growth.

A striking feature of many gliomas is their extreme polymorphism. While it is true that in some, for example the medulloblastoma, this is not a conspicuous feature, there are others, such as the glioblastoma, where it is the most salient characteristic. For this polymorphism there are two causes, which must be held sharply separated: the various stages of maturity of the cells, and their atypical morphology. Thus in a single glioma contiguous elements may be found representing a whole series of developmental stages of the glia cell, and here the emergence of astrocytes deserves special mention. These should not be perfunctorily dismissed as mature elements belonging to the tumor, for the astrocytes of immature gliomas frequently represent a reactive gliosis on the part of the mother tissue. As for atypical morphology, which indicates a profound disturbance in cell life, this may take various forms. The size and shape of the cells, the character of
their cytoplasm, and the formation of cell processes may vary within wide limits. The
glial fibrils, too, differ in respect to number, arrangement, caliber, and length, while the
nuclei show discrepancies in shape, size, number, and chromatin content. Finally, the
nucleoli vary in size and number.

The mitotic figures are of special interest. They are often numerous, particularly in
the medulloblastoma, and occasionally they are multipolar.

That elements resembling ganglion cells should appear in the presence of such
d polymorphism is only to be expected, and care and skill are required to distinguish these
from true ganglion cells.

The question whether one is justified in speaking of a gliasyncytium is still undecided.

More interesting than morphological differences in the gliomas is their clinical vari-
ability. The frequent transition of one type into another cannot be denied.

After a brief discussion of the various degenerations to which gliomas are predisposed
and of their infiltrative growth and metastasis, the author enters upon a description of
the various forms of this neoplasm and their classification. He concludes with Cushing
that there is here and there an inclination to attach too much importance to the subtleties
of histology. This may or may not be justifiable, but in any case it can never lead to
complete knowledge. It will be necessary to separate more sharply gliomas from different
regions of the brain—in other words to supplement histological by topographical
classification, and the recent attempt to arrange those of the frontal lobe, temporal lobe,
etc., in smaller groups is a step in the right direction, for these local forms of glioma
represent not only topographical units, but genetic units also in many cases, with a
typical course of development which it would be of value for the surgeon to understand.

A long bibliography is appended.

Five Cases of Multiple Glioma in the Cerebrum, M. BRANDT. Fünf Fälle mehrfacher

The author reports five instances of multiple glioma in the cerebrum. As the neo-
plasms were of approximately equal size they were probably of independent rather than
metastatic origin. Seven illustrations accompany the text.

On the Pathology of the Brain. Duration, Type, and Position of Brain Tumors, A.
SCHMINCKE. Zur Pathologie des Gehirns. Zur Dauer, Art und Lage der Hirn-

Although the first clinical symptoms are by no means coincident with the inception of
a brain tumor, and some such neoplasms never produce any symptoms at all, the author
thought it worth while to determine their duration as closely as possible under the
circumstances, for practically no such information is to be found in the literature.

The material for analysis comprised 264 cases from the Heidelberg Pathological
Institute (1900-1931) and 306 collected from journals. Of patients with glioma, 72
per cent died within one year, and of those with other neoplasms of the brain (tumors of
dura, blood vessels, or hypophysis, cholesteatoma, mixed tumors, ganglioneuroma,
neurinoma, and ependymoma) 50 to 66 per cent. For all brain tumors together,
irrespective of type, or degree of differentiation, the average length of life was about
twenty months.

There follows a table of affected sites, from which the author concludes that no part
of the brain appears to be a preferred location.

The article closes with a description of a diffuse meningeal glioma.

Further Investigations on the Loss of Differentiation in Gliomas after Operation, W.
MÜLLER. Weitere Untersuchungen über die Entdifferenzierung von Gliomen nach

Among the large number of brain tumors that have come under observation at the
Ostertag Institute in Berlin a number, from patients who had had more than one operation
or who died of recurrence, have been examined twice. The interval between the
first extirpation and the second operation, or the autopsy, was from three to ten months.
It is well known, of course, that tumors in general may suffer a continuous loss of differentiation, but the glioma offers an exceptionally favorable material for the investigation of such transformations because no other neoplasm is so often incompletely removed. On the other hand, however, in no other tumor is judgment rendered so difficult by extreme morphological variability.

Two separate processes were clearly evident—a distinct and progressive loss of differentiation in the parenchyma of newer portions of the neoplasm, and a more or less vigorous mesenchymal reaction. The former may be referred to the enhanced growth resulting from an effort to repair the operative defect as rapidly as possible, the latter to an attempt on the part of vascular and meningeal connective tissue to wall off this defect.

So far as could be determined from the material thus far examined, growths originating in the deeper portions of the brain tend to show this loss of differentiation more than those which attack a superficial site. Should this preliminary conclusion be sustained, it might be of considerable prognostic significance for the surgeon. WM. H. Woglon

Recent Views on the Classification of Blastomas of the Nervous System, B. Oostertag.


No purely cytological classification of tumors of the nervous system has so far proved satisfactory. Thus, among some 700 of these growths, Bailey and Cushing found 140 that could not be definitely placed.

Penfield’s simplified scheme suffers from a rather arbitrary nomenclature, while the purely histological classifications of Roussy and Oberling, and of Hortega in particular, entirely neglect the fact that structurally similar neoplasms vary in their clinical course according to the region of the brain involved.

The author describes an entirely new classification based on the morphology of the tumor, the matrix whence it originates, and the ontogenetic relationships between various parts of the nervous system—a classification which not only is theoretically sound but which has proved to be of value to the clinician. WM. H. Woglon


Bergstrand expressed the opinion that the classification of Bailey and Cushing is in general the most valuable for both clinician and pathologist, though perhaps it could be somewhat simplified in respect to gliomas of the cerebrum. When the oligodendrogloma, the ependymoma, and the pinealoma have been eliminated, there remains a large group which can be subdivided into a benign (astrocytoma) and a malignant (glioblastoma) type, corresponding with their clinical course; the latter occurs later in life than the former, runs a more rapid course, and soon produces psychic symptoms. Further subdivision, based on the proportion of embryonal glia cell forms present, is possible but of no value at the present time.

After a brief description of the tumors which he had mentioned, Bergstrand expressed his entire agreement with Ostertag’s belief that the glioma is a product of congenital malformations.

Fräulein Mittelbach said that among 157 patients with brain tumor, 4 had metastases. In one of these the secondary growths were outside the nervous system (lungs and associated lymph-nodes).

Fahr, in discussing Schmincke’s paper, mentioned a case of diffuse primary sarcoma of the meninges.

Schmincke stressed the importance in etiology of embryonal abnormalities which may perhaps be hereditary. At any rate, in certain parts of Germany gliomas are unusually common and may constitute as high as 4 per cent of the autopsy material. It is not impossible that this is a result of intermarriage.

Gruber said that there could be no doubt that Bailey and Cushing’s classification has had a profound influence on the treatment of brain tumors. Criticism cannot minimize the value of their work, even though it be impossible at present to fit all gliomas into one scheme on account of the large number of intermediate, or transitional types. From a
clinical standpoint it is entirely justifiable to divide certain cerebral gliomas into the two classes benign and malignant; but why one neoplasm should grow rapidly and another slowly, morphology does not explain. This simple classification does not hold for gliomas about the posterior cranial fossa; neoplasms in this situation can usually be diagnosed correctly (astrocytoma, medulloblastoma) from the nature and course of their symptoms alone. As for diffuse growths of the meninges, there can be no doubt that both glioma and sarcoma may assume this form.

Klinge and Schleusing each gave a brief account of patients with metastatic or invasive glioma of the meninges.

Fischer-Wasels stated that for the pathologist the decisive feature of malignancy is metastasis. As gliomas do not spread by way of the blood-stream they can be described only as cellular, rapidly growing, etc., not as malignant. The case described by Fr. Mittelbach would require the most careful study, for primary carcinoma of the lung with metastasis to the brain would have to be definitely eliminated.

Henke asked whether the name "gliosarcoma" were still considered justifiable and, if so, how this growth could be recognized? Is there any staining method available?

Siegmund expressed the view that the regional frequency of brain tumors is better explained by the presence of a surgeon interested in their treatment than by the assumption of hereditary factors.

Fräulein Schmidtmann had been struck, nevertheless, by the frequency of gliomas in her own material. Though this was not exclusively surgical and not entirely derived from a neurological institute, brain tumors had been discovered in 3 per cent of autopsies during the past three years. An especially large proportion of the patients came from the Remstaal region.

Aschoff held that both views were probably correct. No doubt the number of brain tumors seen by a pathologist depends largely upon the surgeons with whom he is associated. On the other hand, glioma, which is rare in the lower animals, is becoming more frequent in man.

v. Balogh discussed the fate of the hemoglobin in hemorrhagic brain tumors, which appeared to be not the same as in the ordinary cerebral hemorrhage.

Ostertag said that the term "gliosarcoma" should be discontinued once and for all.

Henschen, in connection with Aschoff's remark, mentioned a number of tumors of the nervous system in the lower animals, though agreeing that they are very rare. In man, at least, most gliomas are dysontogenetic; their dependence upon exogenous factors, trauma in particular, is doubtful.

That a clinician should doubt the value of Bailey and Cushing's classification is easily to be understood. His primary concern is the question: benign or malignant? Unfortunately, however, the pathologist cannot give him a definite answer, for malignancy is not alone a cellular problem. It depends partly upon intracranial pressure, the amount of edema present in the brain, the location of the growth, and the constitution of the patient. Thus the brain of a child, filling to its utmost capacity the cranial cavity, is an entirely different matter from the atrophic brain of advanced life. Nor can local factors such as injury, or general ones like pregnancy or renal disease, be neglected.

Nothing is more to be desired, according to Henschen, than a simplified and uniform nomenclature which will find international recognition, and he believes that Hortega's scheme, with certain modifications, will best suit the needs of the pathologist at the present time.


The author reports the histories of two patients with benign cysts of the cerebellum. In one case the wall of the cyst was formed by connective tissue with evidence of old hemorrhage and inflammation, while in the other case the wall was formed by a gliosis composed of irregular fibrillae which were arranged in condensed, perpendicular, and variable bands which were more numerous immediately adjacent to the cyst cavity. There were a few cells with oval vesicular nuclei resembling astrocytic cells. In both cases there was an associated secondary hydrocephalus due to obstruction of the fourth ventricle. Although a history of trauma was present in both cases, it seemed unlikely
that the cysts were due to hemorrhages or other traumatic lesions. Because of the absence of neoplastic tissue, the author believes that these cysts took their origin from the ependymal canal and should be considered as congenital defects. He does not consider the absence of an epithelial membrane in these cysts as an argument against their congenital origin, since it is possible for the epithelial cells to have been completely destroyed. The article is not illustrated.

Benjamin R. Shore


A woman of forty-seven showed neurologic signs of midline and right lobe cerebellar tumor. She died suddenly, and necropsy revealed rupture of the heart (not further described). The lateral ventricles were dilated, and a cystic tumor was found in the roof of the fourth ventricle, invading the middle and the right lobe of the cerebellum. An “oat-celled” carcinoma found at the apex of the right lung was regarded as probably being the primary tumor. The histologic characters of the brain tumor are not stated. There are no illustrations.

Benjamin R. Shore


Tumor of the posterior cranial fossa is usually accompanied by severe and rapidly progressive signs of increased intracranial pressure. The appearance of papilledema relatively early in the course of the illness is often in contrast to tumors of other parts of the brain.

In a child of eight years, previously in what appeared to be good health, there developed headache, failing vision, attacks of vomiting, and unsteadiness of gait. Examination revealed a marked reduction in visual acuity, bilateral papilledema, paresis of the left abducens nerve, and horizontal nystagmus. There were definite ataxia and incoordination. Sensibility and general motor status were not unusual. The child was very drowsy but complained of severe headaches. On exposure of the cerebellum the dura was found to be under very great tension and a tumor was discovered involving the left cerebellar hemisphere. The lesion was cystic and some 20 c.c. of xanthochromic fluid were aspirated. Biopsy substantiated the clinical diagnosis of astrocytoma. The patient made a satisfactory recovery and was given postoperative roentgen therapy.

Edwin M. Deery


The author reports the case of an eleven-year-old girl from whom a cystic hemangioma situated between the cerebellar lobes was removed surgically. Marked clinical improvement followed the removal of this growth. The article is not illustrated.

Benjamin R. Shore


The author reports 12 cases of subtentorial gliomas occurring in children, including 5 astrocytomas, 4 medulloblastomas, 2 glioblastomas, and an ependymoma. Among 50 cases of histologically verified intracranial tumors occurring during the same period, no subtentorial gliomas were found in adults. There are four illustrations.

F. Cavers


Only three instances of a primary tumor arising from the sensory root of the fifth nerve in the posterior cranial fossa have been reported in the literature. A fourth case is here recorded. Tumors extending from the middle fossa posteriorly and invading the posterior fossa by secondary extension are not considered.

The patient was a forty-six-year-old man in whom numbness of the left side of the face, some difficulty in speech, a staggering gait, attacks of dizziness, personality changes, and difficulty in swallowing were the predominating symptoms. Post-mortem ex-
amination showed an elongated, reddish-brown, cystic tumor situated on the sensory root of the left fifth nerve and compressing the fifth to the twelfth cranial nerves. Histologic study of the growth showed it to be a perineural fibroblastoma.

From the study of this case and the three collected from the literature, it would appear that a clinical syndrome of perineural fibroblastoma of the fifth nerve may be deduced. Trigeminal pain is absent because the ganglion itself is not involved. Evidence of trigeminal involvement is a consistent and early symptom and is exemplified by a diminished or absent corneal reflex and by anesthesia over the trigeminal distribution. With encroachment upon the cerebellum, the signs become more apparent. Further pressure upon the medulla and pons results in cranial nerve symptomatology and pyramidal tract signs. The history is of long duration with a late development of intracranial pressure. Periods of remission are characteristic of all these cases. The vestibular tests and audio-amplifier are helpful in ruling out tumors in other areas.

Photographs of the gross specimen and photomicrographs of the tumor illustrate the case reported.

Primary Cerebellar Signs with Tumors of the Cerebellopontine Angle, K. Henner.

Premiers signes cérébelleux dans les tumeurs de l'angle ponto-cérébelleux, Rev. neurol. 2: 377-389, 1933.

There are few neurological syndromes more familiar to the neurologist than that of tumor involving the cerebellopontine angle. Certain clinical signs commonly found in such cases are, however, not generally recognized. A series of 18 cases of verified tumor of this region forms the basis of the present report. In 3 additional cases clearly showing the signs and symptoms of an acoustic tumor operation was refused, and these cases are therefore unverified. The following illustrative histories are included:

1. A patient supposedly having a left acoustic tumor showed clinical evidence of increased intracranial pressure, paresis of the fifth, sixth, seventh, eighth, and twelfth nerves on the side of the tumor, and a partial right hemiparesis. The clinical status was predominantly that of ataxia, with other cerebellar signs. The extremities on the right showed parkinsonian features. At operation there was found, not an acoustic tumor, but a meningioma arising from the dura over the left cerebellar hemisphere.

2. A second case, clinically diagnosed as right cerebellopontine angle tumor, had shown involvement of the fifth, seventh, eighth and ninth cranial nerves. There was markedly increased intracranial pressure, and signs of cerebellar dysfunction were present. The left arm and leg showed inverse cerebellar signs, i.e. parkinsonian movements. A three-stage operation disclosed a right acoustic neurinoma.

3. A third patient, clinically considered to have a right angle tumor showed marked cerebellar dysfunction as well as cranial nerve signs. The contralateral extremities showed parkinsonian phenomena. Autopsy revealed a meningioma of the right cerebellopontine angle, arising from the tentorium.

4. A fourth patient was considered clinically to have an infiltrating tumor in the region of the left cerebellopontine angle. There was a homolateral paresis of the fifth, sixth, seventh and eighth cranial nerves, and moderate homolateral cerebellar signs were present. On the contralateral side inverse cerebellar signs were not found. Autopsy revealed an oligodendrogloma of the pons.

A description and analysis of the "inverse cerebellar" signs so commonly found by the writer are included. In walking, the associated movements of the involved extremities are greatly exaggerated. The Stewart-Holmes test is generally negative, and other findings of like nature are observed. All of these phenomena the writer considers as being of irritative, hyperfunctioning, cerebellar origin. Some have attributed the findings to a loss of normal inhibitory action of the pallidum, while still others believe that the internal hydrocephalus and general increase in intracranial pressure explain such parkinsonian-like features.

Inverse cerebellar, parkinsonian-like symptoms are, in the writer's opinion, more common with tumors of the cerebellopontine angle than with intracerebellar infiltrating growths. It is important, therefore, that in all routine examinations of patients with
suspected cerebellar tumor a systematic search be made for these symptoms on the contralateral side, the practical importance of the finding being that it may make possible a differential diagnosis between a cerebellar and a cerebellopontine angle tumor.

EDWIN M. DEERY

Case of Cerebellopontine Angle Tumor Operated upon by Olivecrona, W. Sterling.

Un cas de tumeur de l'angle ponto-cérébelleux opéré par Olivecrona, Rev. neurol. 2: 167-168, 1933.

A young man of twenty years complained of failing vision in the right eye soon followed by awkwardness of movements in the right arm. The symptoms progressed slowly for a year, after which there appeared diplopia, unsteady gait, severe generalized headaches followed by pain in the distribution of the right trigeminal nerve, and right-sided deafness. Examination showed limitation of head movements, apparently due to stiffness and tenderness of the neck muscles, as well as bilateral papilledema, right exophthalmos, nystagmus, loss of the right corneal reflex, and hypesthesia of the right side of the face. Ataxia was marked in the right arm and all of the muscles of the right side seemed hypotonic. The labyrinthine response was absent on the right side. A clinical diagnosis of right acoustic nerve tumor was made.

A cerebellar craniotomy was carried out and a "neurofibroma" in the right cerebellopontine angle found. The tumor was of unusually large size, of firm consistency and very vascular. An intracapsular enucleation of tumor tissue was done, and neurological examination some three months later showed complete relief from headaches. The diplopia had disappeared, as had the exophthalmos, sensory signs, and visual complaints, and there was considerable improvement in the ataxia and hypotonia.

EDWIN M. DEERY


Roentgenologically tumors arising from the median wall of the lateral ventricle may closely simulate an uncommunicating type of cavum septi pellucidi and cavum vergae in the postero-anterior projection. Both conditions tend to separate the lateral ventricles and encroach upon the lumen of the ventricular system and both tend to encroach upon the third ventricle. In both conditions dilatation of the ventricular system may occur. Four cases in which dilatation of the cavum septi pellucidi and cavum vergae were demonstrated radiologically are reported. The article is illustrated with roentgenograms.

BENJAMIN R. SHORE


A youth of sixteen received a slight knock on the head, and a few hours later complained of severe headache, followed by nausea and vomiting. Next day he was stuporous, and on the third day was brought to hospital in coma. An adequate neurologic examination was impossible, but the findings included slight bilateral papilledema, slight pupillary dilatation and sluggish response to light, and ocular paralysis chiefly affecting the internal recti. Death occurred three hours after admission. At necropsy both lateral ventricles were found to be dilated and distended by clear liquid. Almost filling the third ventricle and attached to the choroid plexus of the velum interpositum was a spherical thin-walled cyst 1.5 cm. in diameter. The wall consisted of connective tissue lined by cubical epithelium identical with that of the choroid plexus. Similar epithelial cells were found in the viscid eosinophil material filling the cyst. Both kidneys showed multiple small cysts lined by epithelium of columnar to squamous form. Three photomicrographs illustrate the report.

A full account of these cysts of the third ventricle has been given by Zimmerman and German (Arch. Neurol. & Psychiat. 30: 309, 1933. Abst in Am. J. Cancer 24: 233, 1935), who reported two of these rare tumors and collected 28 others from the literature.

F. CAVERS
Ependymoma of the Fourth Ventricle; Glioblastoma Multiforme of Corpus Callosum with Regional Metastasis, P. GUCCIONE. Contributo anatomico allo studio dei gliomi. (Ependimoblastoma del IV ventricolo. Glioblastoma multiforme del ginocchio del corpo callaso con metastasi nella corteccia dell' emisfero cerebrale destro), Arch. Ital. d. anat. e istol. patol. 4: 1002–1039, 1933.

The author gives a detailed account of two cases of cerebral glioma.

(1) A three-year-old girl had been in good health until three weeks before hospital admission, when she became feverish and began to vomit. She had lost the sight of both eyes. Neurologic investigation led to a diagnosis of meningo-encephalitis, and the child died three weeks later. The chief necropsy finding was a tumor, about 1 cm. in diameter, arising in the floor of and filling the fourth ventricle, with a prolongation protruding between the anterior margin of the right cerebellar tonsil and the flocculus. There was considerable obstructive hydrocephalus of the aqueduct, third ventricle, and both lateral ventricles. The tumor (ependymoma) cells showed a striking perivascular rosette arrangement.

(2) A man of sixty-eight was brought to the hospital in a state of unconsciousness, which had followed an attack of vomiting. He showed right hemiplegia, arteriosclerosis, and cardiac insufficiency, and died three days later. Necropsy revealed bilateral flattening of the cerebral convolutions, especially those of the frontal lobes. In the cortex of the right superior frontal gyrus was a tumor 2 cm. in diameter, free from the falk and the superior longitudinal sinus. There was a similar but smaller tumor in the anterior third of the right lower temporal gyrus. A third and much larger tumor arose from the geniculum of the corpus callosum and extended laterally and dorsally in the white substance of the two hemispheres. The cells of this tumor, diagnosed as glioblastoma multiforme, varied greatly in form and size; a striking feature was the presence of numerous multinucleate giant cells; there were frequent mitoses, many of them atypical. The author believes that the two small nodules, which showed similar structure, were true metastases, since there was no sign of continuity between them and the large tumor.

Twelve illustrations accompany these reports.

Case of Brain Tumor with Mental Symptoms, W. STERLING AND ORLINSKI. Un cas de tumeur cérébrale avec troubles psychiques, Rev. neurol. 2: 180–181, 1933.

A woman of forty-one years previously in good general health suddenly began to suffer from severe generalized headaches. Periods of forgetfulness and mental sluggishness followed, and attacks of a narcoleptic nature appeared, associated with vomiting. The skull was generally very tender to percussion. There was bilateral papilledema but the visual fields were normal. The deep tendon reflexes were exaggerated on the right side, the gait was definitely cerebellar in type, and there was mild generalized hypotonia. Mentally, the patient showed marked retardation of cerebration, apathy, occasional euphoria, and dullness. X-rays of the skull revealed evidence of increased intracranial pressure. The patient died while being treated with roentgen radiation. Autopsy revealed not a frontal lobe tumor but a large tumor of the left occipital lobe which upon microscopic examination proved to be carcinoma.

[There are no remarks upon the general autopsy findings and the location of the primary carcinoma is not given.]

EDWIN M. DEERY


Paralysis of the abducent nerve with tumor of the brain not directly implicating this nerve has long been recognized, but the corresponding paralysis of the facial and other cranial nerves is not so well known. The author reports the case of a thirty-two-year-old woman whose presenting symptoms were paralysis of the right abducent nerve and of the left facial nerve and later paralysis of the right facial nerve and of the left abducent nerve. The almost, if not complete, integrity of the motor and sensory tracts led to the conclusion that the paralysis of these four nerves might have resulted from remote pressure from a tumor or from increased intracranial pressure. These findings made involvement of the pons by a tumor doubtful, as a growth of such a size to cause paralysis
of both abducent nerves and facial nerves must be a large one unless it implicates the abducent nuclei and the facial nerves as they encircle these nuclei.

The patient died the day following an exploratory craniotomy and decompression. Autopsy showed an infiltrating tumor involving the corpus callosum and surrounding brain tissue. No evidence of tumor growth was found in that portion of the brain stem containing the nuclei and intermediulary fibers of the abducent and facial nerves. The left facial nucleus contained chiefly normal cells but also a considerable number of cells showing chromatolysis and displacement of the nucleus. The right facial nucleus was more nearly normal. The article is not illustrated.  


In a man of sixty-seven years, previously in good health, there developed speech difficulties and a motor weakness of the extremities, followed by attacks of loss of consciousness (apparently without convulsive features). Headaches and attacks of vomiting also occurred and the speech difficulties became worse. Neurological examination revealed paralysis of the right arm and leg with some decrease of pain sensibility on that side. Percussion of the head in the left temporoparietal region was painful. There was a bilateral papilledema and the cerebrospinal fluid showed 33 lymphocytes. Ventriculography showed a filling defect of the left ventricle. At autopsy an extensive tumor was found on the under surface of the left temporal lobe. Sections of the brain showed it to be an infiltrating "glioma."  


A man of twenty-five died a few days after admission to hospital in a comatose state. Since the age of twelve years he had been mentally backward, and had been in an institution for mental defectives. There was a long history of epileptiform fits. More recently the patient's general condition had grown worse, he had become somnolent and showed squint and ptosis of the left eye, bilateral optic neuritis, etc. Necropsy revealed a large, semisolid tumor in the left temporoparietal region. The temporal lobe was hollowed out on its superior and mesial aspects by the tumor mass, which compressed without invading the brain substance. The hippocampal gyrus and uncus were much distorted by the tumor, which also filled the left lateral ventricle. The mass, which was apparently of pial origin, showed areas of lipoid material, myelin drops, crystalline cholesterol deposits, abundant hairs, and newly formed blood vessels. It was thus a true dermoid, as compared with the epidermoids which occur more frequently as intracranial tumors. One illustration accompanies the report.

[Brock and Klenke (Bull. Neurol. Inst., New York 1: 328, 1931) reported a case of cerebral dermoid and gave a full and clear summary of 39 cases in the literature with a critical survey of the pathology of these tumors.]  


A child fifteen months of age showed signs of a cerebral lesion and gradually developing evidence of increased intracranial pressure. At the age of eight, x-rays of the skull revealed a calcified shadow in the parieto-occipital region which was considered characteristic of a partly calcified venous angioma, and therefore x-ray therapy rather than surgery was employed. The child continued to have convulsive seizures, however, and craniotomy was done. A discrete cerebral tuberculoma was removed. The child did well and had no further convulsive seizures.

The patient's general condition had always been excellent and he had shown no evidence of systemic tuberculosis. Ordinarily tuberculoma of the brain cannot be successfully removed, as such patients almost invariably develop tuberculous meningitis and succumb if such a procedure is attempted.  

**Tuberculoma of the Parieto-occipital Region**

In a series of 291 meningiomas, epilepsy was present in 90 or 30.9 per cent of the cases. In these 90 cases there were 18 of grand mal, 7 of petit mal, and 65 ofJacksonian seizures. Among the last group were 36 cases with a motor type of attack, 22 with sensory-motor spells, and 7 with pure sensory seizures. Aside from these 90 cases there were 12 of uncinate fits.

In 14 of the 18 cases of generalized convulsions the lesions were in the frontal lobe, temporal lobe, or arising from the sphenoidal ridge. Fifty-four of the 65 patients with Jacksonian epilepsy had tumors involving the frontal and parietal lobes. In 10 of the 12 cases of uncinate fits the tumors were in close relationship to the uncinate gyrus.

The incidence of epileptic seizure was greatest in tumors of the frontal, parietal, and temporal lobes. There were 116 patients with tumors in this region and 80 had convulsions. All except 16 of these had focal attacks. Of the 21 posterior fossa tumors, not one was complicated by convulsive seizures.

Sixty-six patients had preoperative convulsions. Twenty-four were relieved after removal of the tumor in an average follow-up period of four years. In 13 of the 201 patients without convulsions, seizures occurred after operation. Eight of these had Jacksonian seizures, while the remaining 5 had grand mal attacks.

Benjamin R. Shore


In a man of thirty years a central type of right facial palsy suddenly developed. Improvement of memory for recent events and definite personality changes followed. Headaches and double vision appeared, and, shortly after this, vision began to fail. Some months later attacks of aphasia occurred and still later generalized convulsive seizures. Neurologic examination revealed mental changes, drowsiness, some aphasia, and a right facial palsy. There were mild signs of incoordination on the left side. Bilateral papilledema was present, with reduction of vision in both eyes. Aside from the right facial paralysis the cranial nerves were normal. X-rays of the skull revealed a small osteoma of the pterion. A clinical diagnosis of meningioma of the lesser sphenoid wing was made. A craniotomy was carried out and a large tumor entirely removed. The patient made a rapid and easy recovery with prompt disappearance of neurological signs. Microscopic study of the tumor showed it to be a meningioma.

Like the acoustic neuroma, the meningioma arising from the lesser wing of the sphenoid is notoriously difficult to expose and remove. In the present instance the tumor proved to be unusually large, extending into the anterior and middle cranial fossae and weighing 190 grams.

Edwin M. Deery


A woman of thirty-three had three years previously had a fit, followed by right-sided headaches. Six months before operation the fits recurred and became increasingly frequent. They began in the left great toe and spread up the left side of the body. Clinical examination showed bilateral papilledema and signs of a lesion of the right motor cortex, while radiography revealed thickening of the inner table of the calvarium in the right parietal region. At operation an ovoid tumor, 4 x 3.5 cm., was removed with part of the superior longitudinal sinus. After operation the patient had left hemiplegia, from which she recovered completely.

F. Cavers


The author reports the case of a forty-nine-year-old man who died after the third excision of a recurrent osteochondroma arising from the dura overlying the cerebral hemispheres. The first operation was performed in 1921, the second in 1925, and the third in 1927. Histologic study of the growths showed them to be composed of connective tissue and masses of cartilage. A large portion of the cartilage had become calcified. Only eight cases of chondroma situated inside the cranial cavity over the cerebral hemispheres have been recorded in the literature, including the one here reported.
These tumors are encapsulated and in all cases have arisen from the dura or falx. Like other encapsulated tumors of the cerebrum, the chondromas compress the brain and embed themselves in it, but do not invade it. Unless the dural attachments are removed with the tumors, the latter tend to recur. Photographs of gross specimens, a roentgenogram, and photomicrographs accompany the text.


Of the various types of deformation of the sella turcica produced by neoplasms within the cranial cavity, that resulting from an intrasellar tumor is the only one which is in any way pathognomonic. In a majority of instances this alteration is sufficiently characteristic to establish the diagnosis of a pituitary tumor. In less characteristic deformities, correlation with the clinical data leaves little doubt as to the diagnosis.

The cardinal changes occurring in deformations of the sella turcica, regardless of the location of the tumor, are: (1) atrophy of the dorsum sella, (2) erosion of the floor of the pituitary fossa, and (3) increase in the size of the fossa. In intrasellar tumors, all three of these changes are found in the majority of cases. In a series of 74 patients with verified intrasellar tumors, definite deformation of the sella turcica occurred in every instance, and in approximately 75 per cent of the cases the deformity was sufficiently characteristic to be regarded as pathognomonic of a pituitary tumor. The article is illustrated with drawings and a roentgenogram.


The two generally recognized indications for surgery in the treatment of pituitary tumors, are: (1) visual failure of greater or less degree and (2) intractable and severe headaches. There are many cases not only of the acromegalic or gigantic type, but also of the Fröhlich syndrome, in which operation is not indicated, regardless of the prominence of the clinical syndrome, the presence of a definitely enlarged sella turcica, or marked variations in the metabolic rate.

The author reports the case of a thirty-one-year-old woman in whom roentgen irradiation of an unstated amount administered to a chromophile adenoma of the pituitary gland failed to give satisfactory results. The patient was greatly improved by the surgical removal of this growth. This case is reported to demonstrate the fact that chromophile adenomas may in some instances be radioresistant and that good results may be obtained by surgical excision. The article is illustrated with a roentgenogram, a photomicrograph, and a photograph of the patient.


A man, then aged forty-seven years, was examined by the senior author in 1926, when he presented a pale and cachectic appearance, with wizened face, moderate anemia, chronic headache chiefly in the upper occipital region, bilateral temporal hemianopia, and, on radiography, considerable enlargement of the pituitary fossa. The blood sugar curve was normal, and there was no polyuria. There was no axillary hair, and the pubic hair, as well as that of the eyebrows and face, was scanty. The testes were small. The patient had had four children, but he had been impotent for about a year. More than seven years later the patient was again seen with acute febrile diarrhea, which was rapidly fatal. At necropsy a globular tumor, about 3 cm. in diameter, was seen projecting from the pituitary fossa. The projecting portion consisted of necrotic material with abundant cholesterol crystals; in the intrasellar portion was a marginal layer of degenerate pituitary tissue, chiefly eosinophil. No squamous or adamantinomatous tissue was found, but there were large irregular plasmodial cells which seemed to be the last survivors of the squamous epithelium in which the cystic tumor had evidently arisen. There are four good illustrations.

F. Cavers


In the first of these publications the author reports 4 cases of craniopharyngioma, 3 of intracranial cholesteatoma, and 1 of chordoma. The chordoma was diagnosed clinically as an epipharyngeal tumor, but its true nature and origin were demonstrated histologically and radiographically, though it was not certain from which of the cervical intervertebral disks (2nd to 4th) it had developed. The cholesteatomas were located in the posterior cranial fossa, and the author believes that they arose in the track of the craniopharyngeal duct, though giving no histologic evidence on this point. The craniopharyngiomas occurred in a youth of seventeen, a girl of nine years, a boy of fourteen years, and a woman of sixty-seven. All four patients showed signs of increased intracranial pressure; the three younger ones had diabetes insipidus, and the second and third showed the adiposogenital syndrome.

The author suggests that all these tumors, and in addition dental adamantinomas and basal-cell carcinomas of the face, are homologous from the developmental point of view, since they are all ultimately derived from basal cells of ectodermal or endodermal origin. There are ten illustrations.

The second article cited is a report of the discussion which followed the reading of this paper by Harbitz. T. Dale stated that in his clinic there had been 9 histologically verified cases of hypophyseal duct cysts showing calcification, the latter leading to a correct radiographic diagnosis. E. Hval reported three cases of facial carcinoma, all occurring in women; in two cases the tumors were located on the forehead, in the third on the zygomatic process. All were of cylinder-cell type, showing myxomatous and hyaline (cylindromatous) changes. Hval agreed with Harbitz that these were inclusion epidermoids derived from basal cells left in the lines of fusion of the facial processes of the fetus. There are three illustrations.

F. Cavers


In a woman of twenty-six the menses, hitherto regular, ceased, and headache occurred. The weight increased rapidly; the lower eyelids and the ankles became swollen; the hair of the head grew thin and began to fall, while soft fine hair developed on the cheeks and lips. Other findings were vascular hypertension, an unusually small uterus, erythremia (8,810,000 erythrocytes), and a dusky plethoric appearance of the skin. The pituitary fossa was normal, but there was slight osteoporosis of the cranial bones and the vertebrae. Following roentgen irradiation of the skull the patient menstruated, normally, for the first time in more than twelve months. The history is not carried further than this.

F. Cavers


Roentgenograms of the vertebral column in patients with tumors of the spinal cord often show an increase in the size of the vertebral canal at the level of the growth. This enlargement of the canal was found in 42 per cent of 67 cases studied by the authors and in 70 per cent of 20 cases in which the tumors were situated between the 10th thoracic and 6th lumbar vertebrae. With extramedullary tumors an increase in the size of the canal was found in 18 per cent of growths in the cervical and upper thoracic region, in 12 per cent of growths between the 4th and 9th thoracic vertebrae, and in 60 per cent of growths below the level of the 9th thoracic vertebra. Enlargement of the vertebral canal occurred in 14 of 19 extradural tumors, i.e. 74 per cent. In 9 of these there were visible

The author has been led by the work of Camp, Adson and Shugrue (Am. J. Cancer 17: 348, 1933) to make a thorough radiographic examination of the spine in a series of cases of spinal cord tumors, and has verified the conclusion of these writers that signs of pressure erosion can be detected in the pedicles, laminae and lateral and spinous processes at a stage when these are not discernible in the body of the vertebra. He has also applied the method of measurement of the interpedicular space, introduced by Elsberg and Dyke (Bull. Neurol. Inst. New York 3: 359, 1934. Abst. above) in his series—7 cases of intramedullary and 9 of extramedullary tumors. The first group included one case each of central glioma, cyst (unspecified), gliosarcoma, melanomasarcoma, and metastatic carcinomas, and two inoperable cases in which the nature of the tumor was not determined. The second group consisted of 3 endotheliomas, 2 neurinomas, 2 sarcomas, and one case each of meningioma and angioma. Widening of the spinal canal was usually greater in the extramedullary than in the intramedullary tumors. The author points out that this change is diagnostically valuable when positive; absence of widening does not exclude the presence of a spinal cord tumor, so that in relatively few cases can myelography be dispensed with. For comparison a case of osteitis fibrosa was examined; the interpedicular measurements were normal; the vertebral changes were easily distinguished from those associated with cord tumor. There are four x-ray illustrations.


In the case here reported the clinical and laboratory findings led to the diagnosis and subsequent removal of a tumor from the left side of the spinal cord at the level of the second and third dorsal vertebrae. Recurrence of symptoms sixteen months later necessitated a second operation, and a large encapsulated tumor mass was found at the site of the old lesion. Following the removal of the tumor, and evacuation of a postoperative extradural hematoma, improvement was rapid and one year later no symptom was demonstrable other than a slight weakness of the left leg. Histologic studies showed the characteristic appearance of a pearly epidermoid tumor.

Although tumors of this type are not at all rare in the cranial vault, few have been found in the spinal cord. A careful perusal of the literature disclosed reports of only 20 similar lesions. They were believed by Bostroem (Centralbl. f. allg. Path. u. path. Anat. 8: 1, 1897) to arise from embryonal epidermal inclusions following the splitting off of the neuroectoderm from the ectoderm and the formation of the neural tube from the medullary plate, and subsequent investigators have adhered to this theory. It is also thought that the period of embryonal life at which the inclusion occurs partially determines the later location of the tumor. Subsequent malformations such as teratomatous cysts have been attributed to similar cell inclusions. The close relation between dermoids and epidermoids is demonstrated by their coexistence in the same patient in three of the reported cases. There are four illustrations, a photomicrograph of the tumor and three diagrams illustrating its location and the distribution of sensory changes. A comprehensive bibliography is appended.

Theodore S. Raiford


Each of these authors discusses the general features of hour-glass neurinomas arising from the spinal nerve roots and having an intraspinal extradural prolongation causing compression of the cord. Jansson’s patient, a woman of forty-four, was first admitted to the hospital in 1924 with spastic paraplegia and was found on x-ray examination to have an intrathoracic tumor at the level of the seventh thoracic vertebra. This was removed and proved to be a typical hour-glass neurinoma. The patient recovered well, and the neurologic symptoms had practically disappeared when she was seen more than three years later. Four years later, however, there was a return of symptoms, and radiography showed a tumor in about the same site. X-ray treatment was given, but the patient died about ten years after the appearance of the first symptoms. There are five illustrations.

Faltin’s patient, a woman of twenty-two, suffered from phthisis, facial lupus, and tuberculous cervical adenopathy. For about a year she had noticed a tumor on the left side of the neck, close to the spine. Soon after this appeared she had neurologic symptoms leading gradually to spastic paraplegia. The tumor, the size of a hen’s egg, was fixed to the deep tissue at the level of the fifth cervical vertebra. X-rays showed the typical hour-glass appearance, and at operation the tumor was found to arise from the left fourth ventral root, while its intraspinal portion had compressed the cord to a thin band. The patient died from heart failure on the third day. There are no illustrations.


A youth of seventeen, brought to the hospital with rigid hyperextension of the neck and incomplete paraplegia, said that three months previously he began to have spasms of pain starting at the root of the neck and radiating to the left shoulder, followed by convulsions of both lower extremities. Lipiodol radiography showed complete block at the fourth cervical vertebra. Laminctomy was done, but no tumor was found, and the patient died next day. At necropsy a tumor was discovered at a lower level, close to and compressing the cord over a distance of 3 cm., and arising from a posterior root. There are four illustrations.


The authors report in detail the cases of 4 patients with the history and symptoms of a progressive spastic paraplegia. Pain was absent or was not a prominent symptom. The objective disturbances of sensibility were slight and their upper level was in the midthoracic region, usually at the sixth or seventh thoracic dermatome. The manometric tests demonstrated a subarachnoid block with the spinal fluid changes characteristic of cord compression. Measurements on antero-posterior x-ray films showed that the interpedicular spaces of three or more vertebrae, somewhere between the fourth and tenth thoracic levels, were enlarged and the pedicles of the affected vertebrae were narrowed and atrophic. This combination of symptoms and signs with the characteristic changes in the bony spine justifies the diagnosis of large extradural cysts of the spinal cord. The article is illustrated with drawings, roentgenograms, photomicrographs and charts showing the disturbance of the cutaneous sensation.

BENJAMIN R. SHORE

A woman of forty had twenty years previously noticed a group of small tumors at the inner angle of the right eye. Further tumors had appeared on the lids, temple, and cheek. The lids became greatly swollen and sight was lost. The tumor-bearing area corresponded exactly with the peripheral distribution of the three branches of the right fifth nerve. Neurologic and x-ray investigations revealed no lesion of the skeleton or of the intracranial or visceral organs. Intervention was confined to excision of a large tumor mass over the right maxilla, but recurrence had taken place when the patient was seen a year later. A detailed histologic description is given; no nerve fibers were demonstrated in the tumor.

The author gives an excellent general account of neurofibromatosis, with seven illustrations, and a good bibliography.

F. CAVERS

Phosphatase Content of the Blood in the Diagnosis of Diseases of Bone, G. CORYN.


The author asserts that it is rarely possible to make a certain diagnosis of any bone lesion, neoplastic or otherwise, without investigating the blood chemistry, especially the calcium and phosphate contents. After a general account of the phosphatases, which convert organic into inorganic phosphates and thus play a part in the absorption and elimination of phosphorus and in the fixation and liberation of calcium in the bones, he describes the Roberts technic of their determination in the plasma. He gives in tabular form the blood calcium, phosphate, and phosphatase findings in a number of osseous lesions. The phosphatase content was normal in myeloma, “essential cyst,” senile osteoporosis, and the arthritides; moderately raised in osteomalacia, pregnancy, and metastatic carcinoma; very high in rickets, osteitis fibrosa, and osteitis deformans. However, it is admitted that far too few blood phosphatase determinations have as yet been reported to allow of definite conclusions regarding their value in the diagnosis of bone diseases.

F. CAVERS

Early Diagnosis of Primary Malignant Bone Tumors in Early Life, M. J. PAYNE.


This is a general discussion concerning the diagnosis and treatment of bone tumors. No new material is added.

Benjamin R. Shore


It has recently been said that there is no such neoplasm as the giant-cell sarcoma, and that both the conception and the term should be abandoned. Certainly most pathologists and clinicians have long since ceased to regard as sarcoma the epulis, the brown nodules of osteitis fibrosa, and especially the giant-cell projections on tendon sheaths, although they may still cling to tradition and employ the familiar term “giant-cell sarcoma,” but this term is then qualified by the prefix “so-called.”

Quite apart from these lesions, however, there does occur a true giant-cell sarcoma as, for example, in the thyroid, the uterus, and the bones, though in these last-named organs it appears to be very rare. In the bones it may be distinguished from osteitis fibrosa and epulis by the fragmentation and irregular shape of the nuclei in its giant cells, but still better by the variations in shape, form, and arrangement of the cells constituting its stroma. Thus the term “giant-cell sarcoma” must be retained.

An excellent color plate illustrates the differential diagnosis.

Wm. H. Woglom

The author reports the case of a fifty-three-year-old woman with a destructive tumor involving the upper portion of the shaft and the neck of the right humerus. A diagnosis of round-cell sarcoma was made on a study of the roentgenogram and without histologic study of a biopsy specimen. During the course of two years several series of deep roentgen-ray therapy have been given, with good results. There has been definite calcification of the lesion and marked improvement in the function of the arm. The article is illustrated with several roentgenograms.

Benjamin R. Shore


A man of twenty was first seen in 1928 with a swelling of the right knee and another of the left humerus; both were resected, and a diagnosis of sarcoma was made. Two years later the patient was operated upon for metastases in the right and left shoulders, the left humerus, and the right knee. All these tumors had affected the soft parts, and that of the left knee involved the capsule of the joint. Six years after the first operation the patient entered the author’s clinic with metastases in the axillary, supraclavicular, and inguinal nodes, and with palpable and radiographic signs of abdominal and intra-thoracic metastases. Death ensued within a few weeks. Necropsy was not permitted, but examination of the tumors removed at the previous operations showed that all were polymorphic sarcomas. In different tumors and in different parts of the same tumor, there predominated respectively round and spindle cells. Twelve illustrations accompany the report.

F. Cavers


A girl of nineteen years complained of pain in the left knee on walking. Her physician found a swelling below the patella and suspected osteomyelitis. X-ray examination showed increase in diameter of the lower end of the femoral shaft, dense areas of sclerosis, increased periosteal bone deposition, and horizontally disposed peripheral spicules just above the epiphyseal line. Hip disarticulation was done, and the pathologic report confirmed the x-ray diagnosis of osteosarcoma. There are two illustrations.

F. Cavers


A seventeen-year-old boy had slight swelling and pain around the right knee joint for two and one-half months before the diagnosis of sarcoma was made by histologic study of a biopsy specimen. The leg was amputated at the junction of the lower and middle thirds of the thigh four and one-half months after the onset of symptoms. In the lateral condyle of the tibia was a circumscribed round tumor involving the epiphyseal cartilage. Histologic study of the tumor showed it to be composed of atypical round and spindle-shaped cells and many giant cells. There was also a large amount of undifferentiated connective tissue which resembled early forms of cartilage. The article is illustrated with a photograph of the gross specimen, a roentgenogram, and photomicrographs. No follow-up is given.

Benjamin R. Shore


A short résumé of the clinical and pathological features of multiple myeloma supported by brief reports of seven typical cases. While the condition is still relatively rare, more cases are being seen with the increasing accuracy of x-ray diagnosis. In view of the insidiousness of onset, the vagueness of the symptomatology, and the absence of significant physical signs, the importance of roentgenography in diagnosis cannot be overestimated. Even with this, differentiation from other types of bone disease is at times exceedingly difficult. Although the etiology of the disease is not definitely known, trauma has been named as a contributory factor. X-ray treatment is of value as a
Bone Metastases from Carcinoma of the Female Genital Organs, E. Philipp. Knochen-
1934.

In this brief review the author deals chiefly with metastases to the pelvis and spinal
column from carcinoma of the uterine cervix. Such metastases frequently appear first
in the pelvis, by direct extension from the parametrium, while the vertebrae are
invaded via the aortic lymph nodes. In Philipp's experience, metastases in these and
other bones have frequently shown considerable and sometimes apparently complete
regression following x-ray treatment.

F. Cavers

1935.

A woman of sixty-one had a swelling of the right forearm, with intermittent pain, for
three years. During the last year the swelling had increased in size and the pain had
become continuous. There was a hard tender swelling of the middle third of the ulna.
The latter was resected with the surrounding muscles, and 14 radium needles (28 mg.)
were buried in the wound for five days. Thirteen years earlier a small subcutaneous
tumor, diagnosed as hemangio-endothelioma, had been removed from the same forearm.
There are three illustrations.

F. Cavers

Case of Osteitis Fibrosa in a Cartilaginous Exostosis, E. Ettorre. Ueber einen Fall
von Ostitis fibrosa in einer kartilaginären Exostose, Acta orthop. scandinav. 5:
244–260, 1933.

The author reports the case of a nineteen-year-old girl with a cartilaginous exostosis
of the distal third of the right tibia, with fusion with the fibula. Histologic study of the
excised exostosis showed it to contain areas resembling those seen in osteitis fibrosa.
The repeated traumas which this tumor had sustained over a period of several years
were thought to have been the cause of these changes. The article is illustrated with
roentgenograms and photomicrographs.

Benjamin R. Shore

HODGKIN’S DISEASE, THE LEUKEMIAS

Irradiation in Lymphosarcoma, Hodgkin's Disease and Leukemia, A Statistical Analysis,

The author has analyzed the results of various authors in the treatment of lympho-
sarcoma, Hodgkin's disease, and leukemia. Irradiation remains the method of choice
in the treatment of all three. It has been reported by some authors (as Desjardins and
Ford: J. A. M. A. 81: 925, 1923) that the use of radium and roentgen rays exerted little
influence on the duration of life in lymphosarcoma. In Leucitia's group of 31 cases,
however, systematic irradiation would seem to have produced a distinct improvement in
results, the five-year cures amounting to 30 per cent and the ten-year cures to 15 per
cent. In the remaining patients the average duration of life was increased to two years
and seven months following beginning of treatment. The author believes irradiation
should be carried out with high-voltage roentgen rays, using large fields and doses of 90
to 100 per cent of a skin unit per field, and that treatment should be applied to as much
of the lymphatic system as possible, regardless of whether the disease is localized or
generalized. In eight to ten weeks the irradiation should be repeated to those areas
where the disease was manifest on first examination, though it will probably have disap-
peared with the first cycle. At this time a 70 per cent dose is used per field. A third
cycle with a 50 per cent dose per field is given ten to twelve weeks later. The prognosis
of lymphosarcoma is governed, aside from its radiosensitivity, by the extent of the involvement at the time of treatment and especially by the rapidity of growth of the tumor in the period preliminary to treatment.

Hodgkin's disease treated by irradiation gives a five-year survival of 15 per cent to 33 per cent and a ten-year survival of 8 per cent or less. In those dying in the first five years the average expectancy of life is increased from two to three and one half years. As a general rule, roentgen-ray therapy with penetrating rays (160 to 200 kv., .05 to 1 mm. Cu or Zn as filter) is preferred. The dosage is determined by the general condition of the patient and the severity of the lesion. If the condition is good and the lesion localized, larger doses up to a full erythema dose may be attempted, but if the condition of the patient indicates systemic invasion (fever, pruritus, modification of the blood formula, cachexia, etc.) and the manifest lesions are fairly generalized, the fractionated protracted method will lead to best results. Daily seances of 10 per cent to 30 per cent skin dose are given spread over a period of several weeks until all disease foci are covered, a total dose of 50 per cent to 90 per cent skin dose being administered per focus. The prognosis in Hodgkin's disease is more favorable when the disease involves one area only. In the generalized cases absence of fever and a normal blood picture and prompt regression of the nodules following treatment are favorable signs.

Acute leukemia is not even temporarily improved by radiation treatment, and the chronic forms, though symptomatically improved, show but slight increase in the average duration of life expectancy. It is believed, however, that by the treatment the efficiency of the patient is increased at least 60 per cent throughout the major part of the duration of the disease. The author advocates in lymphatic leukemia the irradiation of the spleen with either half erythema doses of medium penetrating or with smaller doses of harder roentgen rays. The lymph node areas are best treated by the harder rays by the fractionated method. In myelogenous leukemia the spleen is irradiated with half erythema doses of the medium penetrating or smaller doses of the harder rays. In either disease further treatments are largely controlled by the blood formula.

Teleroentgen therapy the author believes does not materially improve upon the results obtained by local therapy nor does treatment by voltages above 200 kv., except in certain selected cases of localized lymphosarcoma.

W. S. MacComb


Krumbhaar believes that if, as Warthin originally suggested, the pathologic diagnosis of Hodgkin's disease were limited to the chronic inflammatory type of Reed, Longcope, and others, until the discovery of its etiologic nature, much confusion would be avoided. Certainly the diagnosis of Hodgkin's disease should be applied only to those cases which meet the histopathological requirements.

On this basis Krumbhaar has examined the tissues of 40 fatal cases listed as Hodgkin's disease. Of these, 7 were rejected because the histopathological requirements were not met. Of the remaining 33 none showed a transition from the granulomatous to the sarcomatous form. In three instances, however, the condition was probably sarcomatous from the beginning. Evidence for an associated active tuberculosis was present in three cases, but may have been overlooked in others. In three cases careful study had excluded tuberculosis, as far as possible. From his review the author feels that his material "lends no support for the primary neoplastic nature of Hodgkin's disease, unimpressive evidence in favor of a causative relationship of tuberculosis, and no examples of progress from the granulomatous to the neoplastic type of Hodgkin's disease. It brings us definitely back to the probable basis of a granulomatous infection of unknown etiology."

While the nature of Hodgkin's disease remains obscure, the preponderance of evidence favors the infectious theory, with some support for its inclusion among the virus diseases. The author believes that stimulus to further progress will be greater if the condition is not included among the malignant neoplasms, at least until more evidence is at hand. Neither should it be classed as a lymphoblastoma or a lympho-granuloma. Although the term Hodgkin's disease is non-committal, still it is to be
HODGKIN’S DISEASE, THE LEUKEMIAS

recommended until a definite etiology has been established. This position has also been taken by the Lymphatic Tumor Registry.


Following a general account of lymfogranulomatosis the author gives a very full report of 30 histologically verified cases seen in the Helsingfors medical clinic between 1915 and 1933. The patients included 17 males and 13 females. The age distribution was practically uniform throughout the second to the seventh decades, the highest number in a decade being 6 and the lowest 4. Signs of tuberculosis were found in 5 cases. The first manifestation was lymph node enlargement in 20 cases (cervical 16, axillary 2, inguinal 2); in 7 cases node enlargement occurred late in the course of the disease; in 3 the time of appearance of adenopathy was not noted. In only 2 cases did the nodes undergo suppuration. In 9 cases there was pruritus, in 5 skin pigmentation. In 13 cases the temperature remained normal throughout. Typical mediastinal deposits occurred in 5 cases; pleural effusion in 11. In 2 there was acute spinal cord compression with paraplegia. Abdominal symptoms (pain and diarrhoea) occurred in 11 cases; splenomegaly in 19, hepatomegaly in 17, enlargement of both spleen and liver in 13.

No constant blood changes were observed. The total leucocyte count was increased in 19 cases. The most frequent changes were lymphopenia (24 cases) and neutrophilia (20 cases); in only one case was there eosinophilia. The duration of the disease could be determined in 28 cases; the maximum was eight years (one case), but none of the other patients lived for more than three years. All the patients were given x-ray treatment; this had practically no influence on the anaemia but was generally followed by a fall in the total leucocyte count. The author doubts whether the treatment prolonged life in any of the cases.


The average period of survival of patients with Hodgkin’s disease from the appearance of symptoms is said to be three years or less. Craver believes that the best results are obtained if we accept the incurability of the disease as a fact and make use of therapeutic measures designed to secure the best palliation for the longest possible time.

At the Memorial Hospital, New York, 125 cases of Hodgkin’s disease, verified by biopsy, were treated between 1918 and 1929. In this same period there were 185 cases not verified by biopsy but in which the clinical course was typical of the disease. Of the total of 310 cases, 32 (10.3 per cent) showed a survival, following irradiation, of five years or over. Of the 125 proved cases, 15 (12 per cent) showed a survival of over five years. Nine patients still living, in whom the diagnosis was verified by biopsy, show an average period of survival of 7.4 years since treatment and an average total duration of life since onset of symptoms of 9.5 years.

The author found that in those patients in whom the period of survival did not exceed a year following the onset of symptoms, or six months following irradiation there was evidence of early generalization of the disease, whereas in the cases with a longer survival, uncomplicated lymphadenopathy with few or no general symptoms was the rule. The patients with the longer survival periods were not in the older age groups but in the younger, averaging thirty-four years of age.

Variations in histology do not account for the variations in duration of the disease. Many of the cases in the longer survival group were of the highly cellular type of Hodgkin’s disease.

The author is of the opinion that localization in one area, preferably the upper cervical region, combined with early thorough treatment offers the most favorable prognosis, and suggests early surgical removal followed promptly by thorough irradiation. Leukocytosis, with or without polymnucleosis, and leukopenia are unfavorable. Fever, marked pruritus and pronounced splenomegaly seem to be unfavorable prognostic signs, whereas a tendency to gain greatly in weight soon after irradiation seems to be a good indication. The author suggests the possibility that low-voltage rays in massive
single doses may be better than the present day methods of divided dosages by high voltage x-rays, for although the regressions seem better with present methods, and the immediate discomfort less, there would seem to be more marked leukopenia and more cases of later debility.

W. S. MacComb

Tubercle Bacilli in the Blood of Patients with Lymphogranulomatosis, E. JUBÉS.


Blood cultures were positive for tubercle bacilli in eleven of twenty-seven patients with lymphogranulomatosis. The bacilli in six of the cases were probably of the avian type. There are no illustrations.

Benjamin R. Shore


A twenty-seven-year-old woman first complained of enlarged cervical nodes in 1924. Examination at that time revealed a mass of discrete, firm lymph nodes in the left cervical region and a single enlarged node in the right axilla. Refusing biopsy, the patient submitted to radium therapy, following which the nodes markedly decreased in size. She returned, however, sixteen months later with a recurrence of the swelling, and was given another course of radium treatment, with satisfactory results. Seven years later she returned for a third examination, stating that with the exception of periodic swelling of the nodes she had been symptom-free until shortly before the present admission, when vague indigestion, nausea, and loss of weight had been noticed. At this time examination revealed a persistence of the cervical swelling and enlargement of the liver and spleen. Radiotherapy was again followed by a decrease in the size of the nodes but no improvement in the general cachexia. Six months later the patient was admitted for the fourth time, with marked pallor, extreme ascites, and moderate peripheral edema. Various diagnostic procedures failed to reveal the true nature of the disease and in view of the possibility of peritoneal tuberculosis abdominal exploration was carried out. The liver was found to be enlarged, irregular and roughened, and the spleen six times its normal size, but no evidence of tuberculosis could be demonstrated. The patient failed rapidly and died on the fourth day after operation.

Autopsy findings presented complex problems in differential diagnosis. On section the liver showed numerous nodular areas with multiple areas of hemorrhage. The lymph nodes in the region of the liver and pancreas were enlarged and firm, and on section presented a grayish white surface with reddish mottled zones similar to those in the liver. Histologic studies revealed collections of lymphocytic and endothelial cells throughout the liver, and the spleen exhibited marked sinusoidal congestion with collections of lymphocytes and reticulum-cell hyperplasia. In the hepatic and pancreatic nodes the normal structure was completely destroyed. There were in addition areas of reticulo-endothelial hyperplasia and zones of necrosis.

Although from the gross findings Hodgkin's disease or sarcoma had been suspected, histological studies failed to reveal the true nature of the lesions, and the diagnosis remained uncertain. From the clinical picture of long-standing cervical adenopathy followed by terminal abdominal signs, however, it was decided to classify this as an unusual case of atypical Hodgkin's disease.

This is an interesting and unusual case, amply illustrated by six photomicrographs. Although, as the authors have pointed out, the diagnosis of Hodgkin's disease must be accepted with reservation in view of the atypical pathological findings, the case is illustrative of the vague group of granulomatous lesions of which we know so little. There is a short bibliography.

Theodore S. Raiford


The authors used supravital staining in the examination of seven cases of leukemia in children, the stains used being neutral red and janus green B. The series included
four cases of acute lymphatic leukemia in children aged three and a half, four, six, and eight years; the differential leukocyte counts showed from 92 to 99.5 per cent lymphocytes, verified by supravital staining, and in three of the cases the diagnosis was further confirmed at necropsy. One patient, a ten-year-old boy, had monocytic leukemia and had shown increasing pallor for three months. Apart from the polymorphonuclears (5.5 per cent) and lymphocytes (25.5) the leukocytes were of doubtful type. The presence of Auer’s bodies in some of the cells suggested that the abnormal cells were myeloblasts, but supravital staining showed them to be monocytes and promonocytes. The diagnosis was confirmed by biopsy of the bone marrow and later by full necropsy. The remaining two patients, aged twenty-one and twelve months, showed chloroma with anemia, fever, and swelling and tenderness of the limbs. Radiography showed rarefaction of the long bones, erosion or absorption of the cortex and extensive periosteal elevation. In the first of these two cases the blood picture was dominated by myeloid cells; in the second by lymphocytes, though later some myeloid cells appeared. In both cases necropsy revealed green deposits in the long bones, skull, orbits, vertebrae, pelvis, etc. Two plates of drawings in color are included.

Roentgen Diagnosis of Leukemic Changes in the Floor of the Cranium, P. Merio.

A woman of twenty-four complained of severe pain in the left side of the face, which led to a diagnosis of trigeminal neuralgia. This was not relieved by treatment and soon afterwards left facial paresis occurred, with swelling of the eyelids. The chief neurologic findings were bilateral papilledema and other signs of increased intracranial pressure. X-ray examination showed considerable decalcification of the sellar, parasellar, ethmoid, sphenoid, and orbital regions, and of the sternum. A blood count showed 1,200,000 erythrocytes and 21,000 leukocytes (lymphocytes 91 per cent, myeloid elements 9). The liver was greatly enlarged, and there were numerous punctiform skin hemorrhages. The patient died nine months after admission. Necropsy showed extensive lymphatic leukemic infiltration of the dura over practically the whole of the cranial base.

The authors give a brief summary and list of the available literature on bone changes set up by leukemic infiltration. It is believed that these changes will prove to be of frequent occurrence when routine roentgenography of the skeleton is done in cases of leukemia. There are four good illustrations.


In recent years many more cases of agranulocytic angina have been reported than before. While this may be due in part to more complete and more careful hematologic studies and to better diagnosis, it is reasonably certain that there has occurred an actual increase in the incidence of this disease. In spite of the grave prognosis, there have been a considerable number of cases which have recovered spontaneously or following the administration of some more or less specific drug.

Agranulocytic angina may be confused with acute leukemia. Two case histories are presented, one being typical of the first and one of the latter disease. Differential diagnosis rests largely on the blood picture and less on the signs and symptoms. Blood platelets are usually greatly reduced in acute leukemia, but are normal or increased in agranulocytic angina, only rarely showing a decrease. Anemia in agranulocytic angina is rarely, if ever, of any moment and when present is usually to be attributed to associated but unrelated causes and is of the microcytic type. In acute leukemia the anemia is usually marked and progressive and is of the macrocytic type. In this disease also, especially in adults, the blood smear shows a considerable number of very immature cells; often virtually all the white blood cells are stem cells and it is only in the most atypical cases that young forms are few in number. A few stem cells may be found in the blood of patients suffering from agranulocytic angina; any very considerable number, however, indicates the probability of leukemia, and the more there are the greater the
probability. A level is reached, perhaps 20 per cent, which if more than temporary almost certainly means leukemia. During convalescence from agranulocytic angina there is usually a temporary outpouring of myelocytes, but this stage is soon passed and clinical improvement is evident coincidentally.

A rise of temperature to 102° to 104° in the leukemic patient seems to have but little effect on the general well-being of the patient, while in agranulocytic angina such temperatures are almost invariably accompanied by prostration and toxicity. Yet in some instances differential diagnosis is well nigh impossible especially where leukopenia is present, as it may be even in leukemias, for leukemia is still leukemia whether the white count be 50 or 50,000 per cubic millimeter. The character of the white cells and the pathologic changes in the bone marrow determine the diagnosis. In the last analysis, sternal bone marrow puncture may have to be resorted to as a diagnostic aid.

W. S. MACCOMB


The author discusses the relative value of the Ehrlich and Schilling methods of differentiating the white blood cells and comes to the conclusion that the latter method is the more satisfactory and enables one to form a prognostic opinion. Brief summaries are cited of 10 cases, demonstrating the value of the test in differentiating infectious and non-infectious diseases. There are no illustrations.

THEODORE S. RAIFORD

Radiation in Leukemia: Report of 77 Cases So Treated, B. L. FEUERSTEIN. M. Record 140: 492-494, 1934.

This is a brief report on 77 cases of leukemia treated by radiation at Bellevue Hospital. In selecting patients for treatment those are eliminated who are moribund, who have a red cell count below 2,500,000, or who exhibit marked cachexia. Other conditions regarded as contraindications are severe cardiac disease, and severe leukemia with hemorrhage, high fever, and marked prostration. The majority of cases treated were of the chronic lymphocytic or myelogenous types. Irradiation consists for the main part in deep x-ray therapy directed to the spleen, lymph nodes, long bones, and mediastinum.

Before treatment is instituted the normal trend of the leucocyte count is established by blood counts done three times a week for two weeks. With repeated blood counts as a check, treatment is so regulated that the white count falls gradually to about 20,000. Treatments are then cut down to the minimum dosage necessary to maintain the patient at the established level. Subjective symptoms are controlled by reducing the dosage. The persistence or increase of splenomegaly in spite of continued treatment is regarded as an unfavorable sign. The determination of the percentage of immature white cells is of value in forecasting the probable outcome of the disease, as a rise in the number of myelocytes is often a sign of the approaching end. An unfavorable outcome may be expected in cases with low red blood counts at the onset, which fail to improve under therapy.

Since only 25 per cent of the patients treated returned after one year, the ultimate result is unknown in the great majority. Nevertheless the author believes, that, though the life of the patient may not be greatly prolonged, palliative relief may be obtained and a few months added to life, especially in young adults whose red blood count is at least 3,000,000 at the time treatment is instituted.

A short bibliography is appended.

THEODORE S. RAIFORD


This is a review of various methods that have been tried in the treatment of the leukemias by raising the temperature of the patient—infection with the malarial parasite and various other pyrogenic organisms, injection of a suspension of sulphur in oil, administration of Lugol's iodine solution, diathermy, inclusion of excessive peptones in the diet, etc. Though not reporting any personal cases, the author believes that none of these methods has proved capable of inducing remissions equivalent to those following irradiation, and that the improvement in the general condition reported by various writers has been largely if not entirely subjective.

F. CAVERS

The author reviews the cases of monocytic leukemia appearing in the literature since the first description of the disease by Reschad and Schilling in 1913 (Münch. med. Wchnschr. 60: 1981, 1913) and reports 11 cases of his own: 9 of monocytic leukemia, 6 of which came to autopsy, and 2 of myelogenous leukemia, one with complete autopsy findings.

The sources of confusion regarding the disease lie primarily in the similarity of the blood findings to those in other diseases, the incompleteness of many of the case reports, and the diversity of opinion in regard to the origin of the myelocyte. Levine believes that differential cell counts upon the bone marrow should be adopted as one means of unifying diagnostic tests. In two of his cases evidence is presented to show that the precursors of monocytes, the monoblasts, are derivatives of the reticulo-endothelial cells, although in these cases the stem cell stage appears to have been skipped in the presence of the leukemic stimulus. However, the histological findings of monocytic leukemia differ so widely from those of reticulo-endotheliosis that the term reticulo-endothelial leukemia should be regarded as a misnomer.

As to frequency, the author finds that his 6 autopsied cases of monocytic leukemia represent, in the material from the Grant and Cook County Hospitals, 0.1 per cent of all autopsies, 10.3 per cent of all leukemias, and 16.7 per cent of all acute leukemias. He concludes that on the basis of the findings presented, the condition should be regarded as a separate entity.

Brief summaries of the 11 cases are presented. Detailed laboratory studies are included in four tables and there are seven illustrations. A comprehensive bibliography is appended.

Theodore S. Raiford


A man of sixty-five had for about four months noticed rapidly progressive thickening and corrugation of his scalp, with swelling of the lymph nodes in various regions. There were now similar thickening and grooving of the skin all over the body. The incomplete blood counts given showed a rise in total leukocytes from 12,000 to 20,000, the lymphocytes increasing from 51 to 73 per cent during the six months intervening before death. Biopsy of the thickened skin showed diffuse subepidermal infiltration of lymphoid cells. After a time there appeared, successively, disseminated boils and abscesses; erysipelas, not followed by regression; increasing enlargement of spleen and liver; chest pain, cough, and dyspnea just before death, less than a year after the first appearance of the skin manifestations. Necropsy was not permitted. There are two illustrations.

F. Cavers


Emphasizing the rôle that trauma may play in the development of neoplastic disease, the author cites a case in which myeloid leukemia followed fracture of the tibia and fibula of the left leg and of the third, fourth, fifth and seventh ribs in a fifty-one-year-old Austrian male. However, the fact that the disease developed five months after the original injury makes it seem little more than coincidental. Five similar cases are quoted from the literature, all of which developed from one to twelve months after the injury. There are no illustrations.

Theodore S. Raiford


The authors report the case of a girl, aged two years and eight months, in whom the predominating feature was recurrent pain, tenderness, and swelling of the joints of the arms and legs. These symptoms masked the true nature of the disease for six months and persisted throughout the remaining six months of life. The clinical picture was atypical enough to cast a doubt upon the initial diagnosis of rheumatic fever, for it was
felt that in so young a child an extensive and protracted polyarthritis should be accompanied by a severely damaged heart, a condition which was lacking in this instance. It was not until the third admission to the hospital, when a generalised adenopathy was also present, that the diagnosis of acute lymphatic leukemia was made. The highest total white count of the blood was 19,000; the lowest count, which was also terminal, was 1100. The polymorphonuclear cells were decreased at all times except for one brief rise following a transfusion. The diagnosis of acute lymphatic leukemia was confirmed by the histologic study of a surgically removed lymph node. Post-mortem examination was not permitted. The article is illustrated with roentgenograms.

Benjamin R. Shore


The author reports the case of a girl three and one-half years old, who died of acute lymphatic leukemia four months after the onset of the first symptoms. The disease was of the aleukemic type and the white blood cell count was never over 26,000 per cubic millimeter. Treatment consisted of a blood transfusion, the oral administration of liver, and ultra-violet light therapy. There are no illustrations. Benjamin R. Shore


The author reports a case of chronic myelosis with complete blood studies prior to and during the leukemic phase, from the beginning to the end of the aleukemic phase, and after recovery. Extreme neutropenia (as low as 900 per c. mm.), with the disappearance of all neutrophiles, characterised the aleukemic stage. An ulceromembranous angina developing on the fourth day of the neutropenia was attributed to the latter. With the beginning decrease of leukocytes a fever of undetermined origin appeared. As the fever subsided the leukocytes reappeared and the oral lesions cleared up. The author is unable to attribute recovery to any specific cause. The leukocytes continued to diminish in spite of the use of pentose nucleotide and blood transfusions. The decline of the temperature was associated with non-specific immunotransfusions, but whether this was the responsible factor the author is unable to state. The clinical course of the disease is depicted in two charts which show the daily changes in the general condition of the patient and the blood count. Theodore S. Raiford


A woman of sixty had for about eighteen months before hospital admission become increasingly weak and pallid. She was now dyspneic, and showed extensive adenopathy (axillary, supraclavicular, inguinal) and considerable enlargement of liver and spleen, the latter organ reaching the iliac spine. A blood count showed 2,700,000 erythrocytes and 6300 leukocytes (myelocytes 35 per cent, myeloblasts 5, polymorphonuclears 40, lymphocytes 11, monocytes and transitional forms 9). After x-ray treatment to the spleen the leukocyte count fell, but numerous normoblasts appeared. Gastric analysis showed achlorhydria; x-ray investigation revealed nothing abnormal except hypotonicity of the stomach. X-ray treatment was continued, with the addition of arsenic, hydrochloric acid, peepsin, and liver extract. The spleen diminished in size, but megaloblasts now appeared along with the normoblasts in the blood. After a remission of about four months, the patient grew rapidly worse; the erythrocytes fell to 1,200,000 and the leukocytes rose to 52,000; x-rays and the other measures used were now without effect, and death occurred twelve months after admission. Necropsy showed myeloid infiltration of the liver, spleen, bone marrow, and lymph nodes. The author thinks the anemia was not of the pernicious type, but simply a secondary anemia such as is fairly common in the lymphadenoses and myeloses. F. Cavender

A man of sixty had been under the author's observation for thirteen years. During this time the spleen and liver had gradually enlarged. The earlier blood counts had given 7,000,000 to 10,000,000 erythrocytes, 140–160 per cent hemoglobin, and 16,000 to 24,000 leukocytes. Slight but temporary subjective improvement had followed venesection and administration of potassium iodide. Benzol administration had no appreciable result. In 1922 and again in 1925 x-ray treatment to the sternum and long bones caused considerable subjective improvement, but following similar x-ray treatment in 1927 the erythrocyte count fell to 6,000,000. In 1930 phenylhydrazine hydrochloride was given. This was followed by hemolytic anemia and thrombosis of the saphenous vein; the liver increased in size and the blood count remained unaltered. Early in 1934 the erythrocyte count gradually fell, and the leukocytes began to increase steadily, the myeloid elements predominating. At the time of the report the patient was gradually sinking.


Subleukemic splenic reticulo-endotheliosis is described by the authors as being at the time of examination either an aleukemic or a subleukemic form of monocytic leukemia associated with splenomegaly as a prominent clinical feature. They state that the histiocyte of the reticulo-endothelial system is a partially differentiated cell and probably cannot, under normal conditions, act as parent cell of either the lymphocyte or granulocyte, but there is reason to believe that under certain conditions the histiocyte may be the parent cell of the monocyte even though the latter cell is usually derived from the myeloblast. The authors are convinced, therefore, that leukemic reticulo-endotheliosis and monocytic leukemia are closely allied, if indeed they are not actually the same disease.

In cases of leukemic reticulo-endotheliosis the primitive free reticulo-endothelial cell may be found in the blood in addition to the reticular type of monocyte. It is generally larger than the leukocyte and usually has an eccentric nucleus, either rounded or indented but frequently elongated with a clear-cut nuclear membrane. One or two nucleoli may be present. The chromatin is blue with Wright's stain, is sharply differentiated and arranged in fine granular strands. The cytoplasm is grayish-blue and granular in appearance. A most important factor in the diagnosis of leukemic reticulo-endotheliosis is the recognition of this cell on the blood smear.

Reticulo-endotheliosis may be manifest clinically (1) as storage or lipoid histiocytosis, such as Gaucher's disease, Niemann-Pick's disease, or the Hand-Schuller-Christian syndrome; (2) as infectious hyperplastic reticulosis such as occurs in certain recurrent infections and sepsis, in infectious mononcytosis, and in occasional cases of bacterial endocarditis; (3) as leukemic reticulo-endotheliosis.

In cases of leukemic reticulo-endotheliosis there may be generalized involvement of the entire reticulo-endothelial system, with or without localized tumors, with predominant involvement of the bone marrow, predominant involvement of lymphatic structures, or predominant involvement of the liver or of the spleen. Any of the forms may be frankly leukemic (monocytic), subleukemic, or aleukemic. The first may be recognized by the high percentage of reticular monocytes in the blood; the aleukemic form may be clinically impossible to diagnose; and the subleukemic syndrome is likewise difficult to recognize. Detailed and prolonged morphologic study of the blood is necessary to establish the diagnosis. In the early stages the distinguishing cells may easily be mistaken for mature monocytes and their number may not be great enough to alter the normal percentage of monocytes.

Two case reports are presented in each of which a diagnosis of splenic anemia was made and splenectomy was performed. Later in the course of the disease the true nature of the process was recognized by the higher percentage (20 per cent and 30 per cent) of reticular cells. The histories are given in detail together with an excellent description in each case of the microscopic picture of the splenic tissue. A microphotograph of each is also reproduced.
Giffin and Watkins have given an excellent differential diagnosis. They state that the infectious hyperplastic type of reticulo-endotheliosis, in which reticular cells may be found in the blood smears, can be distinguished from leukemic reticulo-endotheliosis by the presence of an increased percentage of polymorphonuclears, the absence of immature reticular monocytes, and clinical manifestations of a predominating infectious process. Cases of subleukemic monocytic myelosis reveal the presence of stem cells of the myeloid series and the absence of typical reticular cells. In splenic anemia, there is usually no definite history of repeated infection, fever is uncommon and splenomegaly usually has been present for years. Purpuric features are occasionally seen in splenic anemia but more frequently with reticulo-endotheliosis. In splenic anemia the test of liver function almost always gives evidence of at least a moderate, and sometimes an extreme grade of retention of dye, and gross gastro-intestinal hemorrhage is more common. Leukopenia with lymphocytosis is not uncommon in splenic anemia, but examination of the smears usually reveals in addition to the absence of reticular cells, more poikilocytosis and less macrocytosis.

W. S. MacComb

STATISTICS


In the first paper the author analyzes 530 cases of skin carcinoma seen at the Zurich clinic during the eleven years 1920 to 1932. This is exclusive of 41 cases of melanoma already reported by the author in collaboration with Schürch (See Abst. in Am. J. Cancer 21: 406, 1934). The 530 cases are first analyzed, in tabular form, according to age, sex, site, and occupational incidence. Cases occurred in every decade from the first (one case of squamous-cell cancer) to the tenth (one squamous-cell and three basal-cell cancers). There were 346 cases of solitary and 51 of multiple basal-cell cancer, 108 of solitary and 11 of multiple squamous-cell cancer, and 10 solitary and 4 multiple Bowen's cancers. Basal-cell cancers were most frequent (134) in the seventh decade, and squamous-cancers (42) in the eighth decade. The male to female ratio was 150 : 247 for basal-cell, 50 : 69 for squamous-cell, and 3 : 11 for Bowen carcinoma. The chief sites of the basal-cell cancers were the nose and forehead, those of the squamous-cell cancers the lips and cheeks. Only 61 skin cancers occurred in other regions, including 20 in the neck. [The site table gives 50 Bowen cancers, though it is stated several times in the text that only 14 of these occurred in the series.]

In the second paper the author analyzes the results of treatment, mainly by roentgen irradiation. Of the 530 patients, 516 were traced for at least six months. In assessing the results the treatment the author separates from the basal-cell cancers a small group of 8 treated cases (6 followed for at least six months) in which the tumor showed rapid invasion of the underlying musculature and bones. In these cases the lesion failed to respond to irradiation, and the 6 traced patients soon died. “Cure” (period varying from one to five or more years) is reported for 318 out of the remaining 337 treated basal-cell cancer cases. The traced cases of squamous-cell cancer have been divided, from the standpoint of irradiation prognosis, into two groups. In 68 cases the tumors were small, having a diameter of less than 2 cm., and in 22 the tumors considerably exceeded this size, measuring 5 cm. or more in diameter. Of the former group 54 (66 per cent) were cured, and 3 patients died with recurrence and metastasis; of the latter group only 6 (27 per cent) were cured, and there were 9 deaths from cancer. From 1920 to 1928 the total roentgen-ray dosage varied considerably, being usually 1200 to 1600 r for single dosage, 2400 to 3200 r for twice-weekly treatment, and 3500 to 4800 r for daily treatment in the more serious cases. Since 1928 higher total dosage has been given, and Coutard's method has been used in the latter part of the 1928 to 1932 period. The evaluation of five-year results for the majority of the irradiated cases is therefore of slight value at present, since only during the last four or five years of the period covered have adequate total doses been given.