The abstracts which follow have been classified for the convenience of the reader under the following headings:

Experimental Studies; Animal Tumors
Metabolic and Chemical Studies
The Tumor Cell
General Clinical Observations
Diagnosis and Treatment
The Skin
The Eye
The Ear
The Breast
Oral Cavity and Upper Respiratory Tract

The Thyroid Gland
Intrathoracic Tumors
The Digestive Tract
The Pancreas
The Female Genital Tract
The Genito-Urinary Tract
The Nervous System
The Bones and Muscles
Hodgkin’s Disease; Chloroma
Statistics and Education

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ABSTRACTS

EXPERIMENTAL STUDIES; ANIMAL TUMORS


The work of other investigators on the production of lung tumors in mice by tar is reviewed and it is noted that in practically all instances the induced neoplasms occurred in animals of strains which have a tendency to the spontaneous development of pulmonary tumors. This observation is confirmed by the author's own experiments with dibenzanthracene, for he obtained a high percentage of lung tumors only in mice of strain A, a high-pulmonary-tumor strain. In order, therefore, to rule out spontaneous growths, only mice below the age at which these appear have been used in his investigations.

In two experiments young mice of strain A received subcutaneous injections of 1.6 mg. dibenzanthracene in lard. As subcutaneous tumors developed or death occurred from other causes the animals were examined for lung tumors, and at the end of seven months in the first experiment and six in the second the remaining mice were killed. The total number of animals in the two series was 95; 18 developed subcutaneous tumors only, 45 both subcutaneous and pulmonary tumors, and 18 lung tumors only. But of the 26 animals killed at the conclusion of the experiments, 18 had nodules in the lungs and only 2 showed subcutaneous tumors. In control series totalling 55 animals only 5 lung tumors occurred. In a third experiment 22 of 23 mice surviving four months after receiving injections of dibenzanthracene had lung tumors, while only 4 had subcutaneous tumors. In a fourth experiment 26 strain A female mice received a single subcutaneous injection of 0.8 mg. of 1:2:5:6-dibenzanthracene in lard; 23 were alive three months later, and of these, all but one exhibited lung tumors while none had developed a subcutaneous growth.

Thus not only did more of the animals develop pulmonary tumors than subcutaneous tumors, but the lung tumors arose earlier, from which it would appear that the lungs of these mice are more delicate test objects than the subcutaneous tissues for the carcinogenic activity of 1:2:5:6-dibenzanthracene.

A bibliography is appended.


Twenty-one female mice and 21 male mice of a high-pulmonary-tumor strain, A, were bred to males and females of a low-pulmonary-tumor strain, C57 black, in which all attempts at induction of lung tumors by dibenzanthracene had failed (see preceding abstract). Females of the first hybrid generation thus obtained were then mated to their brothers to give the second hybrid generation.

Of the first hybrid generation, 121 animals were given injections of 0.4 c.c. of dibenzanthracene in lard (4 mg. per c.c.). Eleven of these died without tumor before the appearance of the first subcutaneous tumor at the injection site. Practically all the remaining 110 mice were kept under observation for the occurrence of subcutaneous or lung tumors; the last 3 were killed eleven months after the initial subcutaneous injection. Of the 110 animals, 101, or 91.9 per cent, developed a subcutaneous tumor and 99, or 90 per cent, developed lung nodules.

Of the second hybrid generation, 305 mice were injected subcutaneously with a lard-dibenzanthracene solution. Twelve of these died tumor-free before the appearance of the first subcutaneous tumor. The remaining 293 mice were kept under observation
for six months, during which time 231 developed a subcutaneous tumor or died from other causes. At the end of the six-month period the remaining 62 mice were killed and autopsied for subcutaneous and lung tumors. It was found that up to six months after the initial injection of these 293 mice, 231, or 78.8 per cent, had developed a subcutaneous tumor, and 219, or 74.7 per cent, had developed lung nodules.

The absence of lung growths in a high proportion of uninjected controls of both the first and second hybrid generations shows that the lung nodules in the injected mice did not arise spontaneously and, in addition, shows that the lungs of the 62 second generation mice killed at the conclusion of the experiment were more responsive to the induction of tumors than the subcutaneous tissues, for 43 had multiple lung tumors without any evidence of a subcutaneous growth.

The presence of lung tumors in a high percentage of animals of both the first and second hybrid generations shows that the susceptibility of this organ to tumor formation induced by the subcutaneous injection of a lard-dibenzanthracene solution is inherited in a dominant manner.

A bibliography is appended.


The author has been successful in transplanting 7 pulmonary tumors induced by 1 : 2 : 3 : 4-dibenzanthracene in the lungs of strain A mice, to the subcutaneous tissues of normal mice of the same strain or of a backcross obtained by breeding hybrids of A and C57 blacks back to the parent strain A. Three of the primary tumors consisted chiefly of carcinomatous elements and these remained predominant in the earlier passages. Later, however, sarcomatous elements predominated. A fourth tumor, an adenocarcinoma, was still carcinomatous in its eighth passage.

It is suggested that the three tumors exhibiting a change in histologic appearance arose as mixed tumors, induced by the direct action of a carcinogenic agent upon both epithelial and connective tissue elements in the lungs. Photomicrographs of one of these are reproduced.

A bibliography is appended.


The following methods of administering dibenzanthracene subcutaneously to mice were studied: (1) implantation of cholesterol pellets containing from 1 to 1.5 mg. dibenzanthracene; (2) injection of 0.25 c.c. of a lard solution containing 1 mg. dibenzanthracene; (3) injection of 0.25 c.c. of a 50 per cent solution of glycerine in water in which was suspended 1 mg. crystalline dibenzanthracene; (4) injection of 1 c.c. of a horse serum dispersion containing 1 mg. of the hydrocarbon. Pulmonary tumors were produced in from 65 to 100 per cent of the injected animals, the highest percentage occurring in the mice receiving the horse serum dispersion. Only 3 of 30 control mice had pulmonary tumors at the close of the experiment.

In a further experiment 1 : 2 : 3 : 4-dibenzanthracene was introduced directly into the lungs on silk threads passed through the chest cavity. Tumor growth was thus obtained in three strains of mice, A, C57, and even C57, which had hitherto been found resistant to induced lung tumors. One of the tumors in a strain A mouse has undergone six serial passages. This tumor, though primarily a squamous-cell carcinoma, later assumed sarcomatous characters (see also preceding abstract).

Photographs and photomicrographs are included and there are references to the literature.


Dog-serum and horse-serum dispersions of 1 : 2 : 5 : 6-dibenzanthracene were injected intravenously or subcutaneously and lard solutions of the same compound
were injected subcutaneously into pure strain mice. The serum dispersions, when injected intravenously, induced lung and liver tumors, and, when injected subcutaneously, produced local tumors at the site of injection as well as lung and liver tumors. The lard solution, when injected subcutaneously, evoked local tumors at the injection site and also produced lung and liver tumors.

Lung tumors were observed not only in mice of strain A, which has a high incidence of spontaneous lung tumors, but also in those of strain C3H, which do not exhibit a tendency to develop such tumors spontaneously and have in earlier experiments shown themselves refractory to subcutaneous injections of dibenzanthracene in lard. Liver tumors were also produced in C3H mice as well as in those of the A strain.

When equal quantities of the hydrocarbon were injected subcutaneously in lard solutions or in serum dispersions, the latter materials, particularly the dog serum, were less effective in producing tumors at the injection site but more effective in producing lung and liver growths. It seems possible that these results may be attributed to the type of media in which the compound was administered, for the bulk of the lard solutions remained as subcutaneous deposits while the dispersions disappeared soon after injection. However, lard solutions also produced lung and liver tumors in those animals which did not develop subcutaneous growths before the agent acted upon the tissues of the internal organs.

A photomicrograph, two photographs, and a bibliography are included.


The authors used 1:2:5:6-dibenzanthracene adsorbed on charcoal—0.5 mg. dibenzanthracene to 1 mg. charcoal—in a series of experiments on mice. Subcutaneous injection of this dibenzanthracene charcoal into mice of strain C3H was followed by the appearance of tumors at the injection site.

When charcoal was added to a horse-serum dispersion of 1:2:5:6-dibenzanthracene and the resulting mixture injected subcutaneously into strain C3H mice, tumors arose more rapidly at the injection site than in control mice injected with horse-serum dispersion alone. Induced lung tumors, however, though found in mice injected with the horse-serum dispersion, were not observed following injection of horse-serum dispersion to which charcoal had been added. These results suggest that charcoal held the carcinogenic compound at the site of injection.

When dibenzanthracene charcoal was injected subcutaneously into strain A mice, it induced tumors at the site of injection in but a few mice, which indicates that the subcutaneous tissues in this strain are less susceptible than those of C3H mice to the carcinogenic action of dibenzanthracene charcoal. Very few lung tumors were induced in this group, which is evidence that the dibenzanthracene was held firmly by the charcoal, and may be regarded as a further indication that lung tumors are induced in mice by a direct action of the carcinogenic agent upon the lung tissues.

When dibenzanthracene charcoal was injected intravenously into strain A mice it induced lung tumors within nine weeks, while intravenous injection of an equal amount of 1:2:5:6-dibenzanthracene as a horse-serum dispersion induced lung tumors within five weeks.

The localization of dibenzanthracene charcoal in the lungs via the blood stream and the production of tumors by dibenzanthracene charcoal in the lungs show that lung tumors can be produced in strain A mice by placing the carcinogenic agent in contact with pulmonary tissues.

References are appended.


Peacock (Brit. J. Exper. Path. 17: 164, 1936) has shown that after the intravenous injection of the carcinogenic agents 3:4-benzpyrene and methylcholanthrene and of the non-carcinogenic hydrocarbon anthracene, the bile of rabbits, guinea-pigs, fowls,
and mice becomes abnormally fluorescent. Spectroscopic analysis indicates the presence of derivatives of the injected hydrocarbons. In the case of benzpyrene, the fluorescent bile derivative "BPX" has a very characteristic fluorescence spectrum and Chalmers has attempted to trace the fate of this substance in the animal body. For this purpose, mice were injected intravenously with small quantities of benzpyrene colloid, and the feces and urine were collected for twenty-four hours. The animals were then reinjected with a similar quantity of colloid and killed one hour later, when it was known that the fluorescence of the bile would be at about its maximum intensity. Alcoholic extracts of the bile, feces, and urine were subsequently made and examined spectroscopically. Similar experiments were made with methylcholanthrene and anthracene colloids, but here the results were less useful owing to the lack of definition in the spectra.

Photographs of the fluorescence spectra of the various extracts after the injection of the polycyclic hydrocarbons are given. It is concluded that 3:4-benzpyrene is eliminated in the feces as an ether-insoluble substance having a fluorescence spectrum similar to "BPX," and as an ether-soluble substance having a spectrum similar to "BPX" but showing a shift in the position of the fluorescence bands of approximately 200Å towards the longer wavelengths. The former substance appears to be present in small amounts only.

A. F. Watson

Neoplasia in Rabbits Following the Administration of 1:2:5:6-Dibenzanthracene,

Of 16 female rabbits which had received repeated doses of 1:2:5:6-dibenzanthracene over prolonged periods—618 to 870 days—and had survived for 900 days or longer after the first application, 8 had uterine tumors; 3 were still alive. Sixteen rabbits were given intravenous and subcutaneous injections of the carcinogenic agent and among these there were 3 uterine tumors. In 8 animals vaginal applications were given and 4 tumors of the uterus developed. In 12 the dibenzanthracene was injected into the mammary duct; adenocarcinoma of the uterus appeared in one. In none of the animals did a tumor appear at the site of application.

Photomicrographs and references are included. A table shows the incidence of cancer in rabbits as recorded in the literature following the application of carcinogenic and other agents.


Intravenous injections of colloidal solutions of 1:2:5:6-dibenzanthracene, benzpyrene, and methylcholanthrene in 53 rabbits failed to induce a single tumor, although in all but 7 instances the total dose of the carcinogenic agent exceeded 10 mg. and in 6 it was between 25 and 30 mg. The injections were well tolerated, 31 animals surviving for periods of from twenty-six to eighty-one weeks.


Irradiated ergosterol in oil was applied every two or three days to the skin of the sacral region of 20 white mice. After ten to thirteen months, adenomata of the breast developed in 3 females and 1 male of the 11 surviving animals. Spontaneous tumors never developed in non-treated mice of the strain. One tumor was transplanted, but did not take.

Milton J. Eisen


In order to determine whether the resistance of certain organs to a carcinogenic agent could be lowered by chronic irritation, the author introduced threads impregnated with benzpyrene into the kidney or testis of the rat, into the uterus, or through the
liver. Though the implantation of similar threads in the subcutaneous tissues resulted in tumor production in 7.6 per cent of the animals, no neoplasm arose in the traumatized organs. Comparable results were obtained in mice.


A general review.


Treatment by subcutaneous injection of commercial extracts [exact nature not indicated] of liver or spleen, or by the addition of the fresh organs to the standard diet, was begun four to six weeks prior to the application of tar to the dorsal region of white mice and continued during the six months of tarring. The liver apparently made the animals more sensitive to tar, since such mice showed increased epilation locally and at a distance from the area of tarring. There was an increased histiocytic response in the tissues, especially in the spleen, accompanied by enlargement of the organ. The histiocytic response was most pronounced in the lungs after treatment with spleen. In both cases a tendency to early fibrosis succeeded the original tissue changes. No cancers are recorded. A photograph and a number of photomicrographs are reproduced.


Two propagable mouse sarcomas, 37 and 180, both of which had undergone serial passage in one strain of mice for three years, were employed in a study of natural resistance to tumor transplantation. Nine strains of inbred mice were studied. When sarcoma 37 was implanted cutaneously into these mice, it grew rapidly in all the strains, but practically all members of 6 strains possessed sufficient natural resistance to bring about its complete regression, while in the 3 other strains the tumor grew progressively and caused the death of practically all the mice. Most mice in which the tumor had regressed were resistant to subsequent subcutaneous inoculation with the same tumor. When sarcoma 180 was implanted cutaneously, it grew progressively and killed practically all the mice of 8 of the strains, but receded spontaneously in the majority of individuals of strain 1. Mice of this strain possessed a high degree of natural resistance to both tumors, for they were highly resistant to cutaneous growth of both sarcoma 37 and sarcoma 180, as well as subcutaneous growth of sarcoma 37, and about 10 per cent of them were resistant to subcutaneous growth of sarcoma 180.

The genetic constitution of inoculated mice thus appears to be an important factor in determining their natural resistance to test tumors. It also appears that cutaneous tumors are excellent test objects for the presence of natural resistance to propagable neoplasms of mice.

References are appended.


On the basis of extensive agglutination tests, the results of which are set forth in numerous tables, the author reaches the conclusion that the natural resistance of any rat to tumor implantation (Jensen sarcoma) is directly proportional to its capacity to produce agglutinins and chromatolysins and is inversely proportional to the amount of corresponding agglutinogen in its body cells, of which those in its blood corpuscles act as an approximate index. It follows that, by estimating these agglutinogens by means of the strongly agglutinating serum of a rat immune to Jensen sarcoma, it is possible to select certain rats in which a tumor graft is sure to regress and with somewhat less accuracy others in which it will grow progressively. References are appended.

Mice immunized and subsequently irradiated by roentgen rays showed a decrease in the apparent blood urea concentration as compared with irradiated normal and tumor-bearing mice. In both normal and immunized animals x-ray produced excessive nitrogen elimination in the forty-eight hours immediately following irradiation, after which the urinary total nitrogen became normal. On a mixed diet urea constituted about 81 per cent and ammonia 9 per cent of the total nitrogen excreted. In view of these observations the authors conclude that the drop in blood urea is not due to a specific failure of the normal urea-producing mechanism.

Since the response of blood urea was independent of the actual presence of a tumor, immunity would seem to be primarily a property of the host. In one group of animals the authors determined the response of the blood urea to radiation before inoculation and found that this gave a general indication of the fate of a transplantable tumor subsequently introduced. References are appended.


The authors report several observations on oxidation-reduction systems of the Jensen sarcoma of the rat. The absolute cozymase content of normal muscle is much greater than that of sarcoma tissue, and whereas in normal tissue the oxidized and reduced forms are approximately equal in amount, in sarcoma the reduced form is increased at the expense of the oxidized. This may depend partially upon a reduction in the quantity of oxidizing agents, since intratumoral injection of such substances as lactoflavin, cytochrome, and succinic acid was followed by a diminished content of reduced cozymase.

No effect of lactoflavin was observed in vivo or in vitro, on the ascorbic acid content of tumors, except in areas where necrosis followed the lactoflavin injection; in these areas the ascorbic acid content was diminished.

Regarding the dehydrogenases (estimation by time for the change of methylene blue to the leuco-product), it was found that dialyzed tumor extracts contained large amounts for lactic and malic acids, glycerophosphate, arginine and derivatives (ornithine and urea), but no action on such substrates as glucose, fructose, or sodium nucleinate could be detected.


Rats bearing the Jensen sarcoma and control animals showed the same degree of sensitivity to the subcutaneous injection of lethal doses of adrenalin.


Subcutaneous injections of quantities of adrenalin tolerated by rats had no effect on the course of the Jensen sarcoma.


Caloric restriction was found to retard growth of mouse sarcoma 180 even though there was no deficiency of nutrients essential to growth. Retardation of tumor growth was also produced by diets deficient in protein.

Tumor Growth in Mice One-Fifth Saturated with Deuterium Oxide (Heavy Water), H. G. BARBOUR AND E. ALLEN. Am. J. Cancer 32: 440-446, 1938.

Deuterium oxide caused retardation of growth of transplanted carcinoma and lymphosarcoma in mice, but shortened the animals’ survival period.

This is a discussion of the negative results obtained by the author (Arch. ital. di otol. 42: 399, 1931. Abst. in Am. J. Cancer 16: abst. p. 1274, 1932) in his attempt to transmit laryngeal papilloma to rabbits by means of intramucosal injection of filtrates prepared from spontaneous tumors in man.


Strong, Bittner, and Bittner and Murray have published studies of tumor incidence in mice of Strain C3H (Genetics 20: 586, 1935; Am. J. Cancer 25: 599, 614, 1935; Am. Naturalist 78: 443, 1936). The present study is based on a colony of these mice originating with a group of six C3H strain mice, consisting of four sisters and two brothers, representatives of the eighteenth generation of inbreeding, obtained from Dr. Strong, who originated the strain in October 1930. These mice and their progeny were mated brother-to-sister through five or six generations prior to Jan. 1, 1933, at which time the colony came under its present supervision.

From that date till Feb. 1, 1937, there have been 16 generations, including 1300 breeding females. Of these, 71.4 per cent have developed spontaneous mammary tumors; for 642 breeding females in the first nine generations, which are completed, the incidence was 76 per cent. In no generation did it fall below 66 per cent and in one it exceeded 88 per cent.

By selecting mice of one particular line, the average age at which tumor appeared was lowered from fourteen to fifteen months in the earlier generations to eight to ten months in the recent generations.

References are appended.


This report is based on a series of 480 tumor-bearing female mice of an inbred colony used in various experimental studies of tumor physiology. Autopsy was done in all cases and histologic examinations were made on the tumor, heart, lungs, liver, kidney, spleen, and any enlarged lymph nodes.

Metastases occurred in 217 or 45 per cent of the 480 animals. They were more frequent in mice with multiple mammary tumors. Thus of 185 mice with a single tumor, 37 per cent showed metastases, while of 71 mice with two tumors 46 per cent had metastases, and the percentage rose progressively till for mice having more than 4 tumors it reached 70 per cent. Long duration of the tumor also favored metastatic growth, the incidence of metastases rising from 0 where the tumor duration was ten days or less to 76.5 per cent in the group of mice which had carried their tumors for 100 days or more.

Tumor size apart from duration apparently exerted little effect on the occurrence of metastases. Location of the primary growth was also without appreciable influence. Rapidly growing tumors metastasized early and frequently, and tumors showing diffuse, undifferentiated cellular areas metastasized more frequently than those of relatively pure glandular structure.

Very little, if any, difference in clinical malignancy was seen between the histologic groups into which these mammary carcinomas are usually divided.

Secondary tumors elsewhere than in the lungs were uncommon. Only 5 animals showed non-pulmonary metastases. Heart and kidney were involved once; liver, spleen, and kidney once; heart twice; spleen and kidney once; and liver alone once. All of these 5 mice also had secondary deposits in the lungs. In addition, there were 4 other mice that showed tumor thrombi of the right ventricle, and in 1 a large tumor mass was present just distal to the pulmonary valve.

A bibliography is appended.
Chorionepithelial Formation in the Guinea-pig's Ovary, M. Athias. As formações cário-epiteliais do ovário da Cobaia, Arq. de pat. 8: 121-152, 1936.

Following the earlier observations of Loeb and other workers on parthenogenetic development of oocytes in atretic follicles in young female guinea-pigs, the author presents 4 carefully studied cases occurring in guinea-pigs two to four months old. Serial sections of the ovaries revealed chorionepithelial formation apparently arising from parthenogenetic division of the oocytes in atretic follicles, most of them showing the oocyte in the act of division with polar body formation and segmentation. In addition both true and false lutein bodies were present. Large groups of irregular multinucleated giant cells and masses of syncytial cells were present in the follicle lumina, some showing degenerative changes. The syncytial elements possess amebic and angioclastic capacities characteristic of chorionepithelioma. Large blood lacunae and vessel wall invasion are usually present in the neighborhood of these formations, as well as large cells loaded with presumably hematogenous pigment. These phenomena appear to occur quite frequently in virgin guinea-pigs, the author reporting them in 15 per cent of his cases studied by serial section of the ovaries. Regression of all the structures described occurs in one to three months. The possibility of fecundation in these cases is definitely excluded.

Twenty excellent histological drawings accompany the article. Seaton Sailer

METABOLIC AND CHEMICAL STUDIES


The following is the authors' summary of the results of their experimental studies.
1. Extracts from the mouse sarcomas Crocker 180 and sarcoma 37, mouse carcinoma 63, and rat carcinoma Walker 256, produce lactic acid from glucose and fructose if cozymase, adenylic acid, and a trace of hexosediphosphate are added.
2. Extracts of these tumors rapidly glycolyse glycogen and hexosephosphates, while slices of the same tumors do not, because of the non-diffusibility of these substances.
3. Slices of tumor tissue convert hexosediphosphate into triosephosphate. The distribution of triosephosphate in tumor slices and in the surrounding fluid indicates that the triosephosphate is formed outside the cells, presumably by the action of such enzyme as is exposed in cut and injured cells of the slices.
4. Tumor extracts diluted so as to show the zymohexase activity equivalent to the suspended slices do not form lactic acid either from glucose or hexosediphosphate.
5. Tumor extracts produce lactic acid more rapidly from fructose than from glucose while tumor slices produce lactic acid about three or four times as rapidly from glucose as fructose when the sugar concentration is below 0.5 per cent.
6. The optimum glucose concentration for glycolysis in tumor slices is 0.2 per cent, while the optimum fructose concentration is 10 per cent, indicating that the difference in glycolysis is due to different rates of diffusion into the cells.
7. The fermentation of dried yeast and the glycolysis of starch and glycogen in muscle extract are inhibited by dl-glyceraldehyde. The inhibition is much greater in dialyzed preparations.
8. The inhibition of glycolysis in muscle extract by glyceraldehyde is accompanied by inhibition of phosphate esterification. The glycolyses of hexosediphosphate and hexosemonophosphate are not inhibited.
9. The glycolyses of glycogen, glucose and fructose in tumour extracts are inhibited by glyceraldehyde, but lactic acid formation from hexosephosphates is not affected. The action of glyceraldehyde is probably due to inhibition of esterification processes.

A. F. Watson

Glucose, dihydroxyacetone and hydroxypyruvic aldehyde all lowered the pH of Walker sarcoma 319 and caused a significant increase in its lactic acid content. References are appended.


The author has confirmed and extended the studies of Mendel (Klin. Wchnschr. 8: 169, 1929) on the effect of glyceraldehyde on tumor glycolysis. The respiration and anaerobic glycolysis of tumor (Philadelphia No. 1 sarcoma), brain, testis, and embryo are inhibited by glyceraldehyde. Glycolysis in liver and kidney is stimulated by glyceraldehyde. The inhibition of tumor glycolysis by this means is completely reversible. The effect of glyceraldehyde is specific for this aldehyde since glycolaldehyde, propionaldehyde and benzaldehyde are inactive. The inhibition of tumor anaerobic glycolysis by glyceraldehyde can be largely prevented by pyruvic acid, phosphopyruvic acid and phosphoglyceric acid. Glutathione, adenylic acid, α- and β-glycerophosphates have no effect on the inhibition. Lactic acid production from methylglyoxal by tumor slices or from starch by muscle extract is not inhibited by glyceraldehyde. Dioxycetone is without effect on the glycolysis of tumor tissue.

[Since the publication of this paper, Mendel and his colleagues have shown that the laevo-rotatory form of glyceraldehyde is probably several times more active than the d,l form which Baker used, in the inhibition of tumor glycolysis. Synthetically prepared d-glyceraldehyde is inactive (Mendel, B., Strelitz, F., and Mundell, D.; Nature 141: 288. 1938. Abst. in Am. J. Cancer 32: 586, 1938).]

A. F. Watson


Studies were made of the lytic principle for cancer cells present in normal serum, as described by Freund and Kaminer. After the addition of cholesterin butyrate to serum the lytic property was lost, but if the serum-ester mixture was first incubated for sixteen to twenty hours, this loss was only partial. This probably depends upon the freeing by the action of heat of the lytic principle from its combination with the ester. The lytic principle may be inactivated by heating at 56° C. for thirty minutes.

There exist, however, inactive forms of cholesterin butyrate (when esterification is performed with the aid of pyridine), and such a product inhibits the action of the active ester when added to the test mixture. Ergosterol and vitamin D have an activating influence on the ester.

After treatment with radium for eighteen hours, the active ester was partially inactivated, but activity returned when the treatment was prolonged to ninety-six hours. An inactive ester could also be activated by radium emanations. Milton J. Eisen


In studies of normal, neoplastic, and inflammatory tissues intranucleolar bodies were observed in all specimens. These were of two types: "refractive bodies," appearing as unstained areas or vacuoles, and "argentophile bodies," which take the silver stain. Both were more numerous in cells of benign and malignant tumors than in other cells. The more malignant the neoplasm the greater the number of intranucleolar bodies. Drawings of fresh frozen sections, photomicrographs, and a bibliography are included.
GENERAL CLINICAL OBSERVATIONS


The authors report a series of tumors which they include under the general designation cylindromata. The first case is that of a woman, aged seventy-one, who had a small, slowly growing, non-ulcerated lesion at the external palpebral angle. The growth was excised, recurred in a year, was again excised, recurred a second time eighteen months later, and was once more excised, after which the patient remained well for thirteen years. No photomicrographs are reproduced, so that the morphology of the tumor cannot be determined, but apparently it did not arise from the lacrimal gland, and the authors have seen no example from this gland.

The first patient, a man of fifty years, had a slowly growing tumor in the region of the submaxillary gland. The history of the treatment is instructive. Excision was done under local anesthesia and there was a recurrence in less than a year. A second excision was done under local anesthesia and the tumor was found to have begun to spread into the mucous membranes of the floor of the mouth, showing no evidence of encapsulation. This operation was done only eight months previous to this report, but there had been as yet no recurrence. Microscopically the growth was a cylindroma.

The second patient in this group was a woman of forty with a small, hard nodule in the parotid gland, which was completely encapsulated. The capsule was broken during removal under local anesthesia, but there had been no recurrence in the eleven months which had elapsed at the time of the report. The tumor was partly a cylindroma and partly of the ordinary mixed tumor type.

The third case was that of a woman of twenty-eight, who had been operated upon for a submaxillary tumor which had recurred. Extensive removal was practised and the woman was well two and a half years later. The interesting feature in this case is that two tumors were found, one a mixed growth and the other a cylindroma.

The fourth patient was a man who had been operated upon twelve years before for a tumor of the parotid. Recurrence took place seven years later and another excision was done. Four years after this there was a second recurrence. This was removed with difficulty, and radium needles were inserted, but the patient died two and a half months later from hemorrhage. Histologically the growth was a carcinoma with areas showing cylindromatous structure.

The authors report also a cylindroma of the base of the tongue in a man of seventy-two years. The patient was inoperable, but a biopsy showed the tumor to be a cylindroma; the bilateral node invasion was partly inflammatory. Another case, mentioned without details, is that of a small tumor on the floor of the mouth. It was excised locally and the patient was lost sight of. Microscopically it was a cylindroma.

The authors have seen three tumors of the cylindromatous type in the upper respiratory tract: one in the pharynx, one at the level of the epiglottis, and one at the beginning of the trachea. The cylindroma of the pharynx had as its first symptom paralysis of the left optic nerve and slight headache. In the lateral wall of the pharynx was a nodular mass, a biopsy of which showed a cylindroma. Treatment was with radium on a wooden applicator, 18 millicuries destroyed being given in six days. There was some improvement, but the growth recurred, and the patient died. A cylindroma of the epiglottis was diagnosed by biopsy. A laryngectomy was done and no involved nodes were observed, but this patient was not followed. The third cylindroma was on the posterior wall of the trachea, extending over the first three cartilaginous rings. A
tracheotomy was done with partial excision of the tumor and insertion of radium needles. The reaction was extremely violent, but the patient remained well for five years.

The authors apply the name cylindroma to growths composed of lobular masses of epithelium lying in a stroma of mucoid connective tissue; in the anterior of these lobules is an oval area filled with mucus, showing the characteristic metachromasia with polychrome methylene blue. Growths of this type can be divided into pure cylindromata, cylindromata associated with a mixed tumor morphology, and cylindromata which follow the removal of a mixed tumor. The authors regard the name as unsatisfactory and counsel its abandonment, suggesting in its place carcinoma cylindromatosa. They believe that the term mixed tumor can be properly continued as designating a particular type of neoplasm.

In the discussion Oppikofer gave short reports of three cases of cylindroma of the upper air passages.


Coley and Pierson record 15 cases of synovioma seen since 1900. Three of the patients lived five years or longer after local excision of the tumor and irradiation but one of these eventually died of chest metastases. The authors found 20 followed cases in the literature, which they tabulate. Combining these with their own series they obtain a five-year survival rate of 20 per cent, but no ten-year survivals are recorded. The tumors are radioresistant.

[The pathological features of these interesting tumors are not discussed, though one photomicrograph is reproduced. For this aspect of the subject, a fuller and more critical review of the literature, and a more comprehensive bibliography, see the paper by Knox (Am. J. Cancer 28: 461, 1936), which had not appeared at the time the present report was received for publication. Coley and Pierson, however, mention one case not included in Knox's paper (La Ferla and Demelas: Chir. d. org. movimento 19: 239, 1934).]


Report of a glomus tumor beneath the nail of the right thumb, in a woman of thirty-one. Excision was done and the patient was without recurrence eight years later.


Nine cases of branchial cyst and 2 of parotid gland tumor are recorded. The latter were an adenocarcinoma and a fibroadenoma, both of which were removed with the capsule intact. A recurrence in the second case was receiving x-ray and radium therapy at the time of the report.


A dermoid cyst measuring 2.1 × 1.6 cm., situated in the suprahypohoid region and projecting into the mouth, was removed surgically from a woman of thirty-four years. There was a typical granulomatous reaction in the wall of the cyst caused by the presence of large amounts of fat. A similar reaction could be produced in guinea-pigs by auto-implantation of a piece of the haired skin in the subcutaneous tissue, followed by subcutaneous puncture of the area of reaction, with subsequent passage of a portion of the contents into the surrounding tissue. Several photographs and photomicrographs illustrate the report.


This is a general discussion of the more common benign tumors of the back which include lipomas, sebaceous cysts, epidermoids, fibromas, moles, keloids, and osteomas. Photographs of gross specimens illustrate the article. Benjamin R. Shore
The Congo Red Test as an Indication of the Function of the Reticulo-Endothelial System in Tumor Cases and Surgical Tuberculosis, M. Battiloro. La prova del rosso congo per il saggio della funzionalità del sistema reticolo-endoteliale nei tumori e nella tuberculosi chirurgica, Ann. ital. di chir. 15: 783–796, 1936.

The amount of Congo red absorbed from the blood stream after intravenous injection of the dye is accepted by the author as an indication of the function of the reticulo-endothelial system. No characteristic changes were noted in 25 patients with various forms of malignant tumors, nor in an equal number of cases of surgical tuberculosis.

Milton J. Eisen

Diagnosis and Treatment

Including Experimental Studies on Radiation


A critical survey is given of the diverse methods of examination of the blood serum advocated as aids in the diagnosis of cancer. There have most probably been a greater number and a greater variation of diagnostic methods for malignancy than for any other disease or group of diseases. More than a hundred different reactions have been proposed as specifically capable of indicating the presence of cancer, some with relatively sound theoretical bases and others of a purely arbitrary nature, but none have proved of definite clinical value when subjected to accurate control studies. A large group of workers maintain that cancer is in its early stages a local disease, developing as a result of metabolic disturbances in tissues exposed to various irritating agents, associated with hereditary factors. If this be true, it would be difficult to conceive of general humoral modifications detectable with methods at our disposal. In late stages of the disease, any general modifications which may occur are not associated specifically with the malignancy.

The diagnostic methods considered are classified as follows: (1) immunological, based on the theory of specific antigens in tumors, and including complement-fixation and precipitin reactions; (2) enzymatic, including Abderhalden's test for protective ferments, the Freund-Kaminer cytological reaction, Fuchs fibrin test, etc.; (3) those indicating changes in the colloidal lability of the blood proteins, as the reactions of Sachs, Kahn, Roffo, Weltmann, Kopaczewski, etc.

An extensive bibliography is appended.

Milton J. Eisen


A review of the literature with a long bibliography.


A striking feature of the biological action of x-rays is the extraordinary difference in the response provoked in various biological objects. A dose of 40 r will kill one-half of a quantity of Calliphora eggs exposed to it; while 190 r is required for a similar effect on Drosophila eggs. Tumor cells require from 2,500 r and Colpidium colpoda, 330,000 r. The inhibition of mitosis, however, may be noted after one-thousandth of the lethal dose. The evidence indicates that the effect produced is on the nucleus, which, as Vintemberger showed, is even in the resting phase 25 times as sensitive as the cytoplasm.

Crowther discusses the two hypotheses usually offered in explanation of radiation effects. The "poison" hypothesis assumes the production of some poisonous material by photochemical action. The "target" hypothesis, on the other hand, focuses attention on the discontinuous nature of x-ray absorption and assumes that the action takes place whenever one of the important biological structures is "hit" by the radiation. On the hypothesis that a "hit" is registered when a pair of ions is produced anywhere within the sensitive particle, the sensitivity of the tissues should be independent of the
wavelength. The difficulty with the "poison" theory is that it requires the existence of a temperature coefficient, as chemical disinfectants show a rapid rise in effectiveness with temperature, but Packard and others have shown that with Drosophila eggs no such temperature coefficient exists. All the evidence is that the x-ray effect over wide ranges depends only on the dose administered and, in simple systems, not on the rate of administration. The author concludes that the "target" hypothesis at the moment seems the most satisfactory explanation of the results of radiation.


After a summary of the development of fractional roentgen therapy in theory and practice the author mentions his own experiments to determine whether there is a dissimilarity in the reaction of different tissues to a single massive or a fractional irradiation. Hair, epidermis, and blood-vessels showed a very unlike behavior, as already observed by other investigators. In spite of variations, however, the general rule is adduced that provided not more than 300 r are given in one sitting, with an interval of twenty-four hours between two treatments, a total dose can be administered twice or even two and a half times as great as when the entire dose is given in one sitting, and no lasting damage will result. The highest dose employed by the author in a single sitting is 2000 r, producing an epidermolytic effect.

Borak distinguishes multiform tissues, made up of several different types of cells, and uniform tissues consisting of one type of cell arranged in one layer and with different specific functions. The multiform tissues, such as the epithelia of the sexual glands or the epidermis, are more radiosensitive than vessels and can therefore be destroyed by the rays primarily, while the uniform tissues, as for instance sebaceous glands or spindle-cell elements of connective tissue, are less radiosensitive than vessels and therefore can be made to disappear only secondarily by injuring the vascular endothelia, with subsequent endarteritis. Roentgen epilation on the one hand and a roentgen ulcer on the other furnish a good example of the different reactions of these two types of tissue. The greater effect of fractional irradiation upon multiform tissues can be explained by their greater cumulative capacity, which is another expression of their greater radiosensitivity.

Concerning tumors, the author's theory is that they show the same reaction towards rays as the parent tissues from which they develop (Borak: Strahlentherapie 44: 601, 1932. Abst. in Am. J. Cancer 19: 682, 1933). In this way two types of tumors can be distinguished: those which originate from multiform tissues and are constitutionally radiosensitive and those which arise from uniform tissues and are constitutionally radioresistant. Lymphosarcomas, seminomas, granulosa-cell tumors, trichoepitheliomas, and squamous-cell carcinomas of the skin and mucous membranes belong to the first group; adenocarcinomas, most sarcomas and gliomas to the second group.

Fractionation shows its high effectiveness not only in the treatment of the constitutionally radiosensitive tumors, but also in constitutionally radioresistant growths, because this latter group contains also a certain number of elements which have a greater radiosensitivity than the parent tissue.

Five photographs illustrate the article and a short bibliography is appended.

F. Burgheim
Comparable results were obtained as early as 1915 by Rost, in a study of the erythema-producing effects on human and animal skin. Holthusen, Packard, and others have shown that there is no difference in the wavelength effect with Ascaris and Drosophila eggs, and Mallet, Dahl, and Murdoch in general agree with this opinion. Recent work on erythemas has shown little difference in the skin reactions with x-rays of various wavelengths, provided that the number of r units and the rate of administration are the same.

[In all such discussions it is important to remember that the backscatter, which is not wholly eliminated by the use of a very small portal, must be taken into consideration. At 200 kv. the back-scatter against the skin is about 45 per cent of the impinging dose, while at 800 kv. it is less than 5 per cent of the impinging dose.]

Webster correctly states that there is very little difference in the reactions of the skin and mucous membranes after treatment by highly filtered x-ray, distance radium radiation, and contact low-voltage x-irradiation. The importance of using tangential exposures with high-voltage x-rays for surface lesions is stressed.


Failla's dictum that the real or apparent radiosensitivities of normal and tumor tissues irradiated in the human body become more widely separated as the wavelength decreases from that of ordinary roentgen rays to that of gamma rays is accepted by Stebbing as a working hypothesis. [This may be an excellent dictum, but it is not supported by experimental or clinical evidence.—Ed.] He mentions, as concrete examples of the selective action of rays of shorter wavelength, carcinomas of the tonsil and pharynx and states that many such growths will disappear under x-ray therapy but only with the production of an intense reaction of the skin and pharyngeal mucous membrane; if, however, the growths are treated with gamma rays, they will disappear with a much less severe reaction. [Such an observation has no scientific value because the time factors and back-scatter with the two methods are entirely different. If the rate of administration of the x-rays and the gamma rays is the same, the same lesions will be produced. Stebbing's example of carcinoma of the skin is equally fallacious, for he assumes that x-rays cause a considerable reaction, which can be avoided by means of gamma rays. Again the time factor is forgotten. If the x-rays are given at the same rate as the gamma rays, the reaction will be the same. It is true that in treating cancer of the skin highly filtered radium applied over a long period of time will cause an admirable regression of the growth without serious damage, but if x-ray could be applied continuously for say forty-eight hours at a rate of 1 or 2 r per minute, which is the usual rate from a small radium pack, the results would be the same. Nor is the argument valid that severe systemic effects are seen more frequently as the wavelength is shortened. The size of the portal and the rate of giving the radiation are the decisive factors; 10,000 to 15,000 r can be given at 800 kv. without the patient suffering in the least from the application, but only if the rate of administration is low and the field is limited.—Ed.]


"Acquired radioresistance" is an interesting condition seen most often in tumors of the skin after treatment with small and repeated doses of radiation. The same phenomenon, however, is noted elsewhere, as for example in tonsillar carcinoma or reticulum-cell sarcoma of the neck. Here the effects of radiation are very different when the tumor recurs from those observed during the primary treatment, even with the best modern technic which, as everyone knows, has made some remarkable contributions to effective therapy.

The artificial change in a tumor due to improper radiation must be distinguished from the natural resistance which the tumor cells offer to destruction by radiation. Such natural resistance is a biological phenomenon and, as has been shown in transplantable tumors in animals, there is a fixed amount for each tumor. Attention was called to artificial immunization by Delbet (Bull. de l'Asso. franç. p. l'étude du cancer.
7: 191, 1914) and by Regaud and Nogier (Compt. rend. Acad. d. sc., Paris 158: 1711, 1914) at a time when the general practice was to administer repeated insufficient doses of radium or x-rays. There is some evidence that, if the resistance has been produced by x-rays, radium may be more effective for the second treatment, but this is probably merely an accidental observation. It is doubtful whether equal quantities of radiation from radium or of x-rays vary much in their destructive powers. For this reason the better way to treat such resistant tumors, if they are accessible, is to use electrocoagulation, excision with the radio knife, or surgical excision, for the reapplication of heavy doses of radiation is apt to produce more necrosis, necessitating extensive surgery or, if this is impossible, hastening the death of the patient.

The underlying processes which lead to acquired radioresistance have been much discussed. Dominici, Clunet and Barcat, in 1908, showed that the destructive effect of radiation lay not only in the death of the cancer cell, but that the surrounding connective tissues also played an important part, and that serious damage to these might wholly prevent an ultimate cure. This point was further stressed by Roussy, Laborde, and Leroux in 1923 (Congrès du Cancer, Strasbourg, 1923, Part II, p. 147, Assoc. franç. p. l'étude du cancer), who thought that the damage to the vascular and connective tissue was the important factor in radiovaccination. In 1928, Wood (International Conference on Cancer, London, 1928, p. 455) called attention to the fact that a large amount of the immediate reaction following heavy doses of radiation was due to the effect on the vessels rather than upon the tumor cells. Some experiments by Wood and Prime are also quoted, in which it was shown that it is impossible to produce any resistance in mouse tumor 180, for example, by repeated sublethal exposures, for tumors which had received these multiple exposures and others which had never been exposed to x-rays were killed ultimately with about the same dose, leading to the conclusion that it was the bed in which the tumor was growing that was injured and not the tumor cells.

There are no morphological criteria in the tumor cells to indicate that radioresistance has been induced in them, for it is obvious that the damaged cells, which have monstrous or extremely abnormal nuclei, are incapable of reproduction, and it is only from the more or less uninjured carcinoma cells that propagation takes place. In mouse tumors that have been repeatedly rayed and then transplanted to a fresh host no morphological indications of a radiation effect can be discovered.

The influence of the medium in which the cancer cell finds itself is well illustrated, for example, in carcinoma of the oral cavity, in which the primary tumor may disappear following moderate irradiation, while the lymph node metastases resist any dose which can be given without serious damage to the healthy tissues. Other examples are the carcinomata which arise in lupus, scars from burns or old radiodermatitis, for it is well known that such tumors do not react well to radiation, presumably because of the great damage which the connective tissue and the blood vessels of the stroma have received.

The author concludes from all this that the problem of the curing of cancer is not simply one of the destruction of the malignant cell, but a far more complicated process. Six gross photographs of patients with severe lesions illustrate the text together with two microscopic drawings. There is no bibliography.

Treatment of Malignant Tumors with Contact Radiation, C. Guarini. La cura dei tumori maligni con raggi roentgen a breve distanza focale, Arch. di radiol. 13: 41-45, 1937.

The author discusses the theoretical advantages of the Chaoul technic of contact roentgen irradiation in the treatment of cancer (see Absts. in Am. J. Cancer 29: 163, 772, 1937). In appropriate cases this method has been advocated as a substitute for treatment with radium. A number of photographs are reproduced to demonstrate the excellent results obtained.

Results of Roentgen Treatment of Some Very Advanced Malignancies, F. M. Hodges. Virginia M. Month. 63: 5-9, 1936.

The author believes that many cases of carcinoma of the skin and superficial tissues formerly considered hopeless can be cured by adequate roentgen therapy. He warns
especially against regarding basal-cell cancer as a benign condition. Photographs of a number of patients are reproduced.


A brief description of the procedure followed by the originators of the so-called "ensol treatment" for cancer without any attempt at its evaluation. [See Absts. in Am. J. Cancer 26: 213, 214, 1936.]

**THE SKIN**

**Pearl Formation in Basal-cell Carcinoma,** M. PRATES. Sôbre a presença e significação dos glóbulos côrneos nos carcinomas baso-celulares, Arq. de pat. 8: 153-172, 1936.

The author reviews the work of earlier workers on the so-called basal-cell carcinoma and finds little agreement as to its histologic classification, other than its slight tendency toward keratinization. A series of 56 cases of skin carcinoma are studied, and Körbl's claim (Arch. f. klin. Chir. 97: 752, 1912) that certain carcinomas show pearl formation following x-ray treatment, and that their malignancy is therefore enhanced, is refuted. Several of the author's cases showing pearl formation before treatment showed none after roentgen irradiation. The prognosis appears to depend rather on the location of the tumor than on its histology. Whether or not a difference exists between the basal-cell and squamous-cell carcinomas, tumors of the former group showing pearl formation are not more malignant than those not showing such a structure. [Many dermatologists will not agree with this conclusion. See, for example, MacKee and Cipollaro: Cutaneous Cancer and Precancer, published by the American Journal of Cancer, New York, 1937, pp. 127-128.]

Four photomicrographs accompany the article.

**Histological Modifications in Cutaneous Cancers Treated by Radiation,** P. TREROTOLI. Sul comportamento delle modificazioni istologiche nei cancri cutanei irradiati, Arch. di radiol. 12: 221-243, 1936.

The author studied histologically the reactions in five cutaneous cancers after radiation therapy. Concomitant with the regressive changes in the tumor cells, there was noted the formation of a very vascular granulation tissue often associated with infiltration with eosinophils. There may be production of fibrin, and Sudan III-staining material can often be demonstrated. A connective-tissue repair follows. The most pronounced reactions followed the initial treatments. Photomicrographs of the tumors before and after irradiation are included.

**Electrolysis or Diathermy Coagulation in the Treatment of Vascular Tumors of the Face,** R. POCHY-RIANO. Elettrolisi o diatermocoagulazione nella cura dei tumori vascolari del viso, Arch. di radiol. 12: 121-133, 1936.

A cavernous angiom of the eyelid in a child of eighteen months was removed successfully by means of diathermy coagulation. A discussion of the effect of electrolysis and diathermy on tissues is given.


A fifty-six-year-old man with a history of trauma to the nose two and one-half years prior to admission had a squamous-cell epithelioma of the left ala nasi 0.5 cm. in diameter, with metastases in the submaxillary and sublingual nodes. In spite of irradiation and excision of the involved nodes, the tumor continued to grow. The author believes that in this case trauma was a contributing etiologic factor.

This is a general discussion of the diagnosis and treatment of benign and malignant moles, warts, and keloids from the dermatologic standpoint. There are no illustrations.

Benjamin R. Shore


A twenty-two-year-old man had a large tumor of the scalp extending in cap-like fashion from the right forehead to the occiput and from the midline down to the ear. The tumor was hard and firm, with a convoluted surface, and movable with the scalp. It had been present since birth, slowly increasing in size and thickness. Radium had been used without effect and the patient had been advised by various surgeons against operation. The growth was removed by the author and the defect covered by Thiersch skin grafts from the thigh. Nine years later there had been no recurrence. Pathological examination showed a fibromatous pigmented nevus of the scalp without evidence of malignancy. Photographs of the patient and of the tumor are included.

Benjamin R. Shore


This is a general discussion of the electrosurgical treatment of malignant tumors of the scalp, with two case reports. The first patient was a twenty-five-year-old woman who had remained well for seven and one half years following the excision of a melanoma of the scalp. The second had remained well for twelve years following the removal of a large fibro-angiosarcoma.

Photographs of the gross specimens and photomicrographs are included.

Benjamin R. Shore


A man aged sixty-six complained of a gradual closing of the left eye which had been proceeding for ten months. A tumor of the lacrimal gland seemed the most likely cause and in August 1935 the lacrimal gland, enlarged to about two and a half times its normal size, was removed without any great difficulty. The histologic diagnosis was plasmocytoma. Signs of recurrence appeared six months later. In September 1936 there was a mass slightly less than the original growth and adherent to the frontal bone with some erosion of the floor of the frontal sinus. The mass was removed and the surrounding area was cauterized by diathermy. Radium was applied six weeks later. No further recurrence was apparent for ten months, but in July 1937 there was a tumor as large as the original. Radium needles were then inserted deeply into the mass and at the time of writing, three months later, there was no apparent recurrence though the time is obviously too short to assume that the tumor is permanently eradicated. The author found no previous record of plasmocytoma of the lacrimal gland. He discusses the nature and origin of plasma cells and the occurrence of plasma-cell tumors. Examination of this particular tumor supports the theory that the plasma cell is of endothelial origin.

The paper is illustrated by a photograph of the patient and four photomicrographs, and a bibliography is given.

L. Foulds


A neoplasm in the orbit, but outside of the optic nerve and its sheaths, was suspected in a man aged thirty-six with failing vision in one eye. A Krönlein operation was performed and an encapsulated cavernous hemangioma was removed without causing severe hemorrhage and without damage to the central retinal vessels and the optic nerve, which were in close relationship to the tumor. There was evidently some damage to the
ciliary nerves causing dilatation of the pupil and to the external rectus, producing some limitation of abduction. These relatively trivial mishaps produced no unpleasant subjective symptoms whereas vision was restored to 6/9 and proptosis disappeared.

The operation is described in detail with the aid of two diagrams. Photographs of the gross specimen and of a histological section and a roentgenogram of the orbit after operation are included in the paper.

L. FOULDS

THE EAR


A thirty-year-old male had occasional gastric complaints, headache associated with vomiting, progressive loss of vision, and diminution of hearing on the right side. Clinical examination showed normal caloric reactions on the right with only slight auditory sensation and increased caloric reactions and good hearing on the opposite side. Three months later the caloric and rotation reactions on the right were reduced and eight months after the initial examination the caloric reaction was negative, with nystagmus toward the left side on rotation of the head toward the left and marked nystagmus and dizziness on rotation in a chair toward the left. Autopsy showed an extradural neurinoma of the right 5th trigeminal nerve with destruction of the middle fossa. The apex and median half of the right pyramid were completely destroyed, the orbital roof and clivus were eroded, the sella turcica was completely lacking. Microscopic examination showed stasis in the perilymphatic space of the cochlea, vestibule and ampulla with closure of the perilymphatic duct on the affected side. Smooth atrophy of the organ of Corti and atrophy of the nerves and ganglion cells in the inferior portion of the basal convolution were probably due to a congenital defect, together with other defects in this portion of the cochlea. The auditory loss was attributable to a partial developmental defect and stasis in the perilymphatics, and the loss of vestibular reaction to the latter, which in turn was due to compression of the lymphatic duct. The horizontal nystagmus to the side opposite the lesion and rotary phenomena were due to pressure in the 4th ventricle. The loss of caloric reaction on the side of the tumor as well as the increased rotary reaction on both sides is often seen in brain tumors and is perhaps to be explained by a separation of the fibers for caloric and rotary sensation with different degrees of sensibility.

SEATON SAILER


Melanoma of the auricular appendage is not common. A woman of twenty-eight had a large, dark mass hanging from the ear, and gave the usual history of a small mole which had been present for six years, after which, for no apparent reason, it began to increase in size. The mass was removed with the external ear, and radiation therapy was given. Subcutaneous regional metastases developed five weeks later; there was also a mass in the pelvis and the patient showed increasing cachexia. She succumbed after seven weeks, but necropsy was not obtained. The primary growth was a typical melanoma. A photograph and several photomicrographs illustrate the report.

MILTON J. EISEN

THE BREAST


Of 518 cases of breast carcinoma, 88 per cent gave a history of some form of dysfunction. In 48 per cent the normal breast function was never established; in 38 per cent there was a distinct irregularity of lactation; in 10 per cent there were histories of abscesses, definite and repeated trauma, or infected nipples. These observations, together with studies of animals and the low incidence of mammary carcinoma in groups
of women with a high birth rate, suggest that some type of obstruction or irritation may be an etiologic feature, especially in women constitutionally predisposed to malignant disease.

Radical surgical removal with irradiation is indicated in practically all cases. Preoperative irradiation the author considers of the utmost importance. He records the following results obtained in the past twenty-five years. Prior to 1920, when radical surgery alone was employed, the percentage of five-year cures was 22. Between 1920 and 1924, with the addition of radium therapy, 30 per cent of five-year cures were obtained, and from 1924 to date, with preoperative and postoperative x-ray treatment in addition to the radium and radical surgery, the percentage of five-year (or over) cures has risen to 55. These figures include all cases, operable and inoperable.

References are appended.


In the Roentgen Institute of the University of Zurich (Schinz) 44 single (12.87 per cent) and 298 married women (87.13 per cent) with cancer of the breast were treated from 1920 to 1932. Even when the relationship between married and unmarried women to the total population was considered, carcinoma was found to be more frequent in married women. If different ages were compared the number of cancer cases became still more prevalent with advancing age in married women.

F. Burgheim


This is a general discussion of treatment of carcinoma of the breast. The author recognizes two groups of patients: (1) the possibly curable and (2) the incurable. For the former he advocates the radical operation, including removal of the pectoral muscles, without preliminary irradiation and with postoperative irradiation only in highly malignant cases. All women who have not passed the menopause are sterilized by x-ray. The patients classed as incurable should be given heavy x-radiation, no surgery, and usually no radium. Patients with recurrence following radical operation should have palliative treatment by x-ray and occasionally by radium. This course of action should result in 43 per cent five-year cures in the operated group, including patients both with (25 per cent) and without (75 per cent) involved nodes. References are appended.


This is a detailed description of Greenough’s technic for radical breast removal, illustrated by drawings showing the various steps.


General remarks on breast tumors accompanied by notes on illustrative cases with photographs and photomicrographs. The author does not use postoperative x-ray therapy as a routine for breast cancer. Preoperative irradiation is used as a rule, but no results are reported.


The authors describe the roentgenographic delineation of intracystic papillomas of the breast with the aid of a contrast medium such as thorotrast, a method which they consider of value in diagnosis and the choice of treatment. The thorotrast is introduced into the discharging duct by means of a cannula. Photographs illustrate the article.

[See also Absts. in Am. J. Cancer 32: 301, 302, 1938.] Benjamin R. Shore

Although bleeding from the breast may undoubtedly be caused by benign intracanalicular papilloma of the lactiferous ducts, it is always to be considered seriously. The author presents 3 cases in which bleeding had been present for periods of six and five years and one year respectively. All these patients had cancer at the time of operation, but whether this developed in lesions which were previously benign it was impossible to state. Photomicrographs are reproduced. Milton J. Eisen

THE ORAL CAVITY AND UPPER RESPIRATORY TRACT

Two Cases of Lingual Cancer Localized in the Foliate Papilla, L. Schreyer Bandeira.


Among 118 cases of carcinoma of the tongue seen in the surgical clinic of Prof. F. Gentil and 200 cases in the Portuguese Institute of Oncology, only two involved the foliate papilla. Such cases are probably often included among the carcinomas of the posterior third of the tongue.

The first patient was a fifty-five-year-old woman with an indurated nodule, 2.0 x 0.5 cm., on the left border of the tongue, having a short pedicle. The growth was removed by electrocautery and postoperative radiotherapy was applied to the parotid and suprACLavicular region. Histologically the tumor showed three distinct zones. The most superficial subepithelial zone showed an adenomatous structure composed of irregularly dilated gland spaces beneath which was a carcinomatous zone overlying a deep layer of muscle. The histologic diagnosis was cylindromatous basal-cell carcinoma.

In the second case an almond-sized tumor removed from the posterior third of the left border of the tongue was diagnosed as a squamous-cell carcinoma.

Three photomicrographs and three gross photographs illustrate the paper.

Seaton Sailer


These two papers were inspired by a report of a mixed tumor of the lip by Pilcher (Brit. M. J. 1: 967, 1937. Abst. in Am. J. Cancer 32: 594, 1938). Loke encountered two cases in the course of routine examination of biopsy material from the University Surgical Clinic at Hong Kong. Both patients were Chinese women. The first, aged twenty-four, had a lump on the lip of four years' duration, the size of a walnut. The second patient, aged thirty-six, had a slow-growing swelling on the upper lip for thirteen and one-half years. It measured 3 x 2.5 cm. The histologic features of the growths are briefly described but the after-history is not recorded. Reports of similar cases in other parts of China are lacking.

Collins' patient was a Hindu woman aged twenty-five who had a lump the size of a walnut in the right side of the upper lip. The swelling had started without apparent cause three years previously. The tumor was removed with ease. Histologically it resembled the mixed tumors of the salivary gland.

L. Foulds


A report of five cases of angioma—one of the tongue, three of the palate, and one of the tonsil. Bleeding from the growths was slight. All were cured by surgical removal and cauterization.

Milton J. Eisen
Congenital Epithelial Sinuses and Cysts of the Bridge of the Nose, C. E. Benjamins.


Small epithelial-lined cysts and sinuses of the bridge of the nose are often symptomless until duct obstruction and inflammation occur. Occasionally small tufts of hair project from a duct lumen. Characteristic of all cysts in this location is the lack of connection with the nasal cavities.

The author presents 4 cases, in one of which the lesion was demonstrated by means of lipiodol. Another showed the histologic structure of a dermoid cyst and was connected to the dura. Embryologically the supranasal sulcus forms the border between the brain and root of the nose. In certain parts of the sulcus, particularly the midportion, adhesions may arise between the opposing epithelial surfaces leaving small ectodermal pouches from which cysts arise. The growth of the cysts is most rapid at about the age of puberty. Treatment consists of radical removal of the cyst and ducts. Photographs, roentgenograms, and photomicrographs are included.


A fibro-angioma in the nasal cavity in a child of nine caused repeated epistaxis, and difficulty in respiration. The tumor was extirpated successfully. Photomicrographs are included.

Centro-Facial Method of Citelli in the Treatment of Nasal Tumors, E. Rubalteelli.

Contributo al metodo centro-facciale di Citelli nel trattamento dei tumori del naso, Arch. ital. di otol. 49: 64–70, 1937.

A boy of sixteen gave a history of progressively increasing, unilateral exophthalmos of five months' duration. A mass could be palpated in the inner wall of the orbit. The nasal sinuses were approached by an external transmaxillary incision and a chondroma, 2 cm. long, was removed from the ethmoid region, in addition to a mucocele in both frontal and maxillary sinuses. There was complete cure. Photographs of the patient before and after operation are included.


Report of a case with successful surgical removal.


Loss of weight and unilateral pain and swelling of the orbital and frontal regions developed in a woman of sixty-three. A mass was removed from the frontal sinus and proved to be a metastasis of a hypernephroma. Although the primary tumor had given no localizing symptoms, it was palpable in the kidney region and visible on a pyelogram. Photomicrographs are included.


For malignant tumors of the pharynx and larynx the author employs a modification of the Coutard technic. With a kilovoltage of 220 and a tube current of 20 ma, he finds it possible to give a daily dose of 300 roentgens in twenty minutes. The technic is in general that recommended by Martin and McNattin (Am. J. Roentgenol. 32: 717, 1934. Abst. in Am. J. Cancer 24: 702, 1935). In primary laryngeal cases it is sufficient to include the adjoining soft tissues and nodes within a radius of 3.5 cm. With pharyngeal tumors the anterior half of the floor of the skull and cervical region should be irradiated even when no metastases can be demonstrated.

The author's experience has not yet extended over a five-year period, but he quotes five-year results obtained by others to support his claim that irradiation is the method of choice in malignant tumors of the pharynx and larynx. Of 9 patients of his own with
intrinsic carcinoma of the larynx, treated more than a year ago, 7 are free of disease for periods varying from a year to four years and five months. Four of 8 patients with pharyngeal cancer are well for periods from a year to two years and a half. Six case reports are included, with illustrations. There is also a bibliography.

Case of Malignant Granuloma of the Pharynx (Atypical Lymphosarcoma), S. Kanas.
A forty-seven-year-old potter complained of difficulty in nasal breathing and swallowing. A large ulcerating mass was present, encroaching on the soft palate, with intermittent edema. Biopsies taken from the tumor showed granulation tissue. Death occurred in three and one half months from vessel erosion and hemorrhage from the upper pole of the right tonsil. Autopsy showed a lymphosarcoma of the pharynx surrounded by a wide zone of necrotic granulation tissue which completely masked the tumor and accounted for the negative biopsy. No regional node metastases were present. The course of the illness was septic and apparently due to secondary infection. The literature is reviewed, and differential diagnosis and clinical course of these unusual growths are discussed. A photomicrograph illustrates the report.

Twelve carcinomas of the vocal cords, one of the ventricular cord and one of the sinus Morgagni, were examined histologically, and a number of variations were noted in tumors of approximately the same age. Some showed a sharp borderline between growing carcinoma cells and the adjacent hypertrophied epithelium; in others gradual transitions were noted. Some appeared to have several points of origin. Many vocal cord tumors ulcerate, but this is not due necessarily to late changes, for early growths may show progressive degenerative changes. Other lesions form scirrhous patterns at an early stage. Since all the tumors studied occurred in a limited area it would seem that the structural variations must be accounted for by a tendency inherent in the growth rather than by the nature of the surrounding tissue. A tumor of the sinus of Morgagni showed both adenomatous and medullary types of structure. In this instance the author believes it more probable that the carcinogenic agent stimulated both surface epithelium and cells of the gland ducts to proliferation than that metaplasia of one type into another occurred.

All of these tumors, except the very early ones, penetrate the deeper tissues, sometimes even invading the muscle. Elastic fibers seem to be particularly resistant to the neoplastic growth and can often be found even in the midst of the tumor area.

Ten photomicrographs are included.

Invasion of the Cartilage in Malignant Tumors of the Larynx, F. Carnevale-Ricci.
Among 23 cases of carcinoma of the larynx there was apparently no gross involvement of the cartilage in 70 per cent. On histologic examination, however, it was found that the tumors were rarely confined to the mucosa, but that infiltration of the deeper structures was common. With such invasion a perichondrial reaction was also observed, with leukocytic infiltration and connective-tissue thickening. This barrier proved ineffectual, and infiltration of the cartilage was the rule. There was destruction of the elastic fibers of the perichondrium. Rarely the tumor invaded the cartilage by way of the blood vessels, without direct penetration of the perichondrial tissue. Senile degeneration with subsequent ossification of the cartilage favored carcinomatous infiltration. Finally the tumor may almost completely replace the cartilaginous tissue. Photomicrographs illustrate the changes described.

Milton J. Eisen
Association of Syphilis, Tuberculosis and Cancer of the Larynx, F. Carnevale-Ricci.


A man of thirty-six gave a history of respiratory distress of one month duration. The Wassermann reaction was positive, and biopsy of a laryngeal ulceration revealed syphilis. Antiluetic treatment was instituted. A mass in the neck developed one month later, and serous fluid was removed by puncture. Despite continued treatment, the patient did not improve, and biopsy of the larynx after four months revealed a tuberculous process. Apical pulmonary tuberculosis was also present. The mass in the neck was excised. Pus was present, and there was histologic and bacteriologic evidence of tuberculosis. A third biopsy of the larynx, approximately a month later, showed beginning development of a squamous-cell cancer. Radiation therapy was to be employed.


There is a general review of laryngeal papilloma, and several experiments are recorded in which attempts were made to transmit the growths. Papillomata of 3 patients were removed surgically and suspended in saline. Inoculations were made into the vagina, mouth and conjunctiva of different animals (dog, goat, rat, rabbit), and in the mouth of one child, by means of scarification or intramucosal injection of the resulting emulsion. The results were completely negative. Photomicrographs of the excised papillomata are reproduced.


A record of 160 malignant tumors—114 carcinomata, 46 sarcomata—seen in the years 1929–1934.


Paralysis of the vocal cord and tracheal stenosis are not infrequent complications in patients with malignant goiter while growth of the tumor may not be apparent. Particularly are voice changes and cord paralyses apt to occur early. The author's patient was a twenty-three-year-old male who complained of hoarseness of six months' duration with eventual loss of voice. Laryngoscopic examination showed paralysis of the right vocal cord but no evidence of tumor. About two months later a hard mass, some 3 cm. in its longest diameter, was visible on the right side of the neck. The esophagus was indented at the level of the lesion. Removal of the tumor under local anesthesia was followed by visible improvement in the cord paralysis but ten days later an esophageal fistula developed and in two weeks there was an enormous overgrowth of the mass with invasion of the trachea and destruction of its rings. The left vocal cord was soon involved and the trachea compressed, necessitating tracheotomy. The patient died within three months. Histologically the tumor was a spindle-cell sarcoma.

Four rather poor photomicrographs and one photograph illustrate the report.
ABSTRACTS

INTRATHORACIC TUMORS

Malignant Tumors of the Lung and Bronchopulmonary Suppuration, L. PIETRANTONI.

A report of 3 cases of pulmonary suppuration that on bronchoscopic examination proved to be secondary to a malignant lesion of the bronchus. In one case there was metastatic pulmonary involvement from cancer of the lip; the other two were primary bronchial tumors. The diagnoses were confirmed at necropsy. The importance of bronchoscopy as a method of possible early diagnosis of lung tumors is stressed. Roentgenograms, photographs, and photomicrographs illustrate the report.

Milton J. Eisen


Two cases of coincident bronchogenic carcinoma and pulmonary tuberculosis are recorded. In the first case, in a man of sixty, the ante-mortem diagnosis was primary carcinoma of the lung with cerebral metastases. Autopsy confirmed the diagnosis of cancer and revealed in addition an unsuspected fibrocaseous tuberculosis. The second patient, a man of fifty-nine, complained of severe chest pains, loss of weight, and cough. Roentgenograms of the lungs were normal and, though the sputum contained an occasional acid-fast bacillus, the diagnosis was still in question when death occurred. Autopsy showed adenocarcinoma in the left hilum and areas of caseation suggestive of tuberculosis, though no giant cells were found.

Roentgenograms, photomicrographs and references are included.


Necropsy of a stillborn, full-term infant revealed an angiosarcoma occupying a large portion of the left side of the thorax. The tumor was attached to the chest wall but independent of the lung. While the development of intrauterine fetal neoplasms might be considered an argument against the importance of extrinsic factors in the causation of cancer, it is possible that such factors could gain access to the fetus by way of the maternal circulation. Photographs and photomicrographs are reproduced.

Milton J. Eisen

Dermoid Cyst of the Anterior Mediastinum; Metastatic Pulmonary Carcinomatosis, G. LANZA. Cisti dermoide del mediastino anteriore; carcinomatosi pulmonare metastatica, Arch. per le sc. med. 63: 71–122, 1937.

A man of thirty-nine, with a history of progressive heart failure of three weeks' duration, showed at necropsy a large dermoid cyst of the mediastinum and diffuse carcinomatosis of the lungs arising in a small laryngeal polyp in which malignant degeneration had taken place. There were also metastases in the cervical and mediastinal lymph nodes, and in the wall of the dermoid cyst. A photograph and several photomicrographs are included.

Milton J. Eisen


This is a general review of diseases of the thymus gland.

Milton J. Eisen

THE DIGESTIVE TRACT


Respiratory tract complications occurred in 18 of 24 cases of esophageal cancer observed. These may be classified as follows: tracheal stenosis, 1 case; fistula into
A general discussion of cancer of the stomach and small and large intestine, with emphasis upon early diagnosis and prompt surgical treatment.

General remarks with a few typical case histories, no illustrations, and no references.

A general discussion of gastric cancer with four inconclusive case histories and roentgenograms.

Diagnosis and Surgical Treatment of Carcinoma of the Stomach, J. W. Hendrick.
A general discussion of carcinoma of the stomach based largely on the literature. Two illustrative cases are included, in one of which the patient was well for five years after removal of a grade 2 adenocarcinoma. Photomicrographs, roentgenograms, and references are included.

General discussion with references to the literature.

A fifty-seven-year-old man complained of constipation of three months' duration. Recently he had experienced two severe attacks of intestinal obstruction. In the region of the sigmoid flexure was a palpable mass, and roentgen studies led to a diagnosis of carcinoma at the junction of the sigmoid flexure and the descending colon. At operation there was found, in addition to this tumor, a large ulcerating carcinoma of the pyloric end of the stomach, which the authors believe was entirely independent of the tumor of the colon. The latter was removed and about three weeks later a subtotal gastric resection was done. In each instance the pathological report was adenocarcinoma grade 2. A year later there was no evidence of recurrence of either growth.
Thirty-five cases (including the present one) of independent carcinomas involving the colon and stomach have been recorded and in only four was the sigmoid flexure involved. This case, the authors believe, is the only recorded instance of successful surgical removal of simultaneous independent carcinomas of the stomach and sigmoid flexure [see, however, following abstract].
There are no illustrations. References are appended.

Pemberton and Waugh (Abst. above) stated that they had found no record of a previous successful surgical removal of simultaneous independent carcinomas of the stomach and sigmoid flexure. Maingot now reports a similar case in which both the growth in the sigmoid colon and the cancer of the stomach were removed at a single

The author reviews in a general way the subject of benign tumors of the stomach and records two cases. The first patient was a man of fifty-six years with a history of repeated hemorrhages which led to a diagnosis of gastric ulcer. Roentgen examination showed a niche on the greater curvature, 2.5 cm. above the pylorus. Operation revealed a leiomyoma near the pylorus, involving the greater curvature and the anterior wall of the stomach, and deeply penetrated by a large ulcer of the gastric mucosa.

The second case, exemplifying malignant change in a previously benign tumor, occurred in a woman of seventy. She gave a long history of mild digestive disturbances and anemia, blood was found in the stools, and roentgen studies showed multiple polyloid tumors. At operation four papillomatous growths were removed and in two of these evidence of malignant change was observed. The outcome is not stated.

Photomicrographs are included and there is a bibliography of 25 references.


A woman aged fifty-nine had symptoms suggestive of carcinoma of the stomach. Radiography revealed a large filling defect but normal peristalsis. At operation a tumor the size of a tennis ball was found growing from and invaginating the lesser curvature at the junction of its upper and middle thirds. The tumor and a small area of stomach were excised with the diathermy knife. The patient made a good recovery but as only three months had elapsed since the operation it is a matter for speculation whether the growth will recur. Microscopically, the bulk of the tumor consisted of plain muscle and was reported as leiomyoma. The literature concerning leiomyoma of the stomach was reviewed by Conway (Arch. Surg. 33: 792, 1936. Abst. in Am. J. Cancer 30: 628, 1937).


To previous series of carcinoma of the small intestine reported from the Mayo Clinic (Rankin and Mayo: Surg., Gynec. & Obst. 50: 939, 1930 and Plunkett, Foley, and Snell: Canad. M. A. J. 34: 289, 1936. Abst. in Am. J. Cancer 15: 445, 1931, and 32: 311, 1938) the authors add 7 cases, bringing the total from that clinic to 76. The reported cases are now said to be considerably in excess of 200.

In 31 of the Mayo Clinic series the tumor was in the jejunum and the clinical and pathological features in these cases are tabulated. Twenty of the patients were men and 11 were women. In about 80 per cent of the patients there was a rather typical clinical history of a lesion of the small intestine—recurrent episodes of cramps, nausea, and vomiting for several months, tending to increase in frequency and severity. Weakness and fatigability are prominent symptoms and these and anemia often antedate the gastro-intestinal symptoms. Loss of weight usually occurs. A positive roentgen diagnosis was made in 10 of the 31 cases. Roentgen exclusion of a lesion in the stomach or colon in the presence of suggestive symptoms furnishes presumptive evidence of disease of the small intestine. Occult blood in the stool is a useful sign.

In 15 of these patients resection was done with entero-anastomosis. Of the palliative surgical procedures, entero-anastomosis was performed in 11 (35 per cent) of the cases, while gastro-enterostomy was performed in only 2 cases. In 2 cases the abdomen was closed after an exploratory laparotomy, and in 1 case no surgical treatment was given. The operative mortality was 20 per cent, while the average duration of life was 17.6 months following operation. Two patients in the series recorded are alive seven years after operation.

References are appended and a roentgenogram and two photographs of gross specimens are included.

Two cases of primary melanoma of the intestinal tract are described; one originating in the small intestine of a woman of forty-two, with peritoneal, hepatic, diaphragmatic, and pulmonary metastases, and the other in the descending colon of a woman of fifty-five, associated with hepatic metastases. Melanotic areas are described in various situations in the subperitoneal tissue—they may be found incidentally during routine necropsy—and the author concludes that the melanotic tumors may develop in these areas of abnormal pigmentation. A number of photographs and photomicrographs illustrate the cases.

Milton J. Eisen


Four cases of polypoid tumors of the small intestine are recorded. In one the site was the bulb of the duodenum, in the remainder the terminal portion of the ileum. With the exception of a pedunculated sarcoma of the ileum, all were benign adenomatous polyps. A preoperative diagnosis is difficult to establish. The duodenal case presented symptoms suggestive of ulcer and showed a large filling defect in the roentgenogram. Intussusception is usually associated with tumors in the ileum, so that intestinal obstruction of varying degree results. The growths are treated by excision or resection of the involved loop of gut. Photographs and roentgenograms illustrate the report.

Milton J. Eisen

Intussusception of the Small Intestine Associated with Benign Tumors, G. Capitolo. L'invaginazione dell'intestino tenue per tumori benigni, Arch. per le sc. med. 62: 393–412, 1936.

A man of forty-four years showed signs of partial intestinal obstruction. At operation, a fibroma was found in the terminal portion of the ileum, associated with intussusception. Recovery followed resection of the affected portion of the bowel. There are photographs of the tumor.

Milton J. Eisen


Perforating lesions of the colon may be either neoplastic or non-neoplastic. The non-neoplastic lesions are invariably infectious processes, and these are essentially perforative in character. The neoplastic lesions, on the other hand, are only potentially perforative, but it seems not unreasonable to assume that any neoplastic lesion of the intestine will eventually be attended with perforative-inflammatory manifestations, provided only that it be permitted to go its own way for a sufficient length of time; and the higher the grade of malignancy the greater will be the tendency in this direction.

The author describes the roentgen picture in both types of perforating lesion and reproduces roentgenograms. Whether complicated by infection or not, neoplastic lesions demand radical treatment. Intraperitoneal vaccination preoperatively is advocated.


A series of 158 cases of carcinoma of the colon is reviewed and methods of diagnosis are discussed. Treatment depends on the location of the lesion. The author favors a two-stage procedure and regards the Mickulicz operation as the method of choice wherever it can be employed. The tumor is excised between clamps at the first operation. For carcinoma in the region of the cecum, two methods can be employed. A portion of the ileum, cecum, and ascending colon may be excised and the ends sutured in the wound as a double-barreled ileostomy and colostomy. Another method, which is preferable because it eliminates a colostomy, is first to perform an ileotransversecolostomy with closure of the abdomen, the ileum and the colon including the growth being
removed later. The ends of the ileum and colon are closed. This operation may also be performed in one stage, with an added Pezzer ileostomy as a protection against distention. The ideal operation in the constrictive type of carcinoma of the colon is a preliminary colostomy with resection of the tumor and an end-to-end anastomosis. These constrictive types are usually found in the ascending and descending colons. A tumor of the rectosigmoid junction or rectum is probably best treated by the Lahey or Rankin type of operation. Occasionally when cancer attacks the rectosigmoid junction and a modified Mickulicz operation is chosen, the tumor with the colon must first be mobilized. Carcinoma near the anus can be excised. The rectum is mobilized and a new anus is made by suturing the rectum to the skin, without a preliminary colostomy. Stricture of the new anus is prevented by the use of rectal bougies. Electrocoagulation of the ulcer can also be employed. Preoperative preparation and postoperative care are important factors in reducing the mortality.

The author does not give his end-results. He places the operative mortality at about 10 per cent, and states that most of the patients in his series had recurrences within three years.

Illustrations are included and there is a bibliography.


Roentgen Ray Diagnosis in Carcinoma of the Colon and Rectum, C. F. Crain. Ibid. 32: 517-519, 1936.


These four papers, presented as a symposium, cover the various aspects of carcinoma of the colon and rectum. Six photomicrographs illustrate Goforth's discussion of pathology.


The author emphasizes the importance of early diagnosis and describes and illustrates with drawings the operative technic in carcinoma of the right and left colon. He concludes that "it is better to apply radical measures to an early cancer of the bowel with the greater assurance of cure, than to attempt a too limited removal which may give a somewhat less immediate operative mortality but a larger percentage of recurrences."


There is considerable evidence to show there is a common sequence in the large intestine of hyperplasia → adenoma → carcinoma. Malignant tumors [almost] invariably supervene in polyposis intestini and it is to be expected that localized adenomatosis should show the same tendency. Adenomata or minute hyperplastic nodules are often found around early cancers of the rectum. On a few occasions the author has dealt with a very early growth by local measures and subsequently found another malignant growth developing nearby. It seems that the whole area is potentially malignant and that the removal of one tumor may stimulate further malignant change. Some observations on tarred mice support this view.

Over 700 excised rectums have now been examined at St. Mark's hospital and an anatomical classification has been adopted (see, for example, Dukes: Proc. Roy. Soc. Med. 30: 371, 1937. Abst. in Am. J. Cancer 30: 410, 1937). Apparently lymphatic spread precedes penetration of the growth through the rectal wall in not more than 1 per cent. The regional nodes against the deep surface of the growth are invaded first; invasion then follows the nodes along the superior hemorrhoidal vessels upwards to the
inferior mesenteric group. Save in advanced cases, lateral or downward lymphatic spread is so rare as to be negligible, and there is no tendency for spread against the lymph current from the inferior mesenteric chain along the paracolic vessels which drain the pelvic colon. Four or more invaded nodes were found in less than half of 62 cases with lymphatic spread. Apparently, therefore, lymphatic spread proceeds slowly and even when it has begun there is a considerable time lag before the limit for radical excision is exceeded. Early venous invasion is an accident due to the growth entering a vein. A few patients who escape lymphatic spread succumb to venous invasion and secondary growths in the liver without extensive extrarectal spread.

In the light of the present knowledge of the paths of dissemination, the type of operation should depend on the situation of the growth and the presence or absence of lymphatic invasion. All growths below the peritoneum that are reasonably early and mobile should be removed by the perineum rather than by a combined method, or else by a sacral resection-anastomosis in selected cases. Those that are partly above and partly below can often be dealt with in the same way provided that they are not advanced, that lymphatic spread has been excluded by a preliminary laparotomy, and that the pelvic colon is long enough to allow of a high division from below. The combined operation is easier but has about double the mortality. Growths entirely above the peritoneal reflection, with a reasonable margin of normal bowel below, are best dealt with by means of the Hartmann operation, for which the operative mortality is low. The author is convinced that many lives which could have been prolonged or saved by this method have been cut short unnecessarily by a combined operation.

A survey by Dukes and Lloyd-Davies of 400 consecutive cases of perineal and combined excisions led to the conclusion that 129 could have been dealt with successfully by some form of conservative resection, while about an equal number were incurable by any operation. Judging by this series, in about half the cases that are curable by surgery, the disease can be eradicated as well by local excision as by total proctectomy. Some conservative methods are discussed. Time is required to perfect and standardize them and they are suitable only for those cases without lymph node invasion, at present about 50 per cent of the whole. For more advanced cases an abdominoperineal or perineo-abdominal operation is required, but these are difficult operations and, whenever possible, should be reserved for the specialists in this field. Despite some brilliant results, radium is considered too uncertain at present to justify its use in operable cases.

There are diagrams showing the operability rate, anatomical classification, and survival rates after perineal excision. Four illustrations and a bibliography are included.

L. FOULDS

Radical Operation for Cancer of the Rectum with Preservation of the Sphincter Muscle,


Westhues (Die pathologisch-anatomischen Grundlagen der Chirurgie des Rektumkarzinoms, Leipzig, G. Thieme, 1934, reviewed in Am. J. Cancer 22: 128, 1934) has shown by the most painstaking studies that rectal carcinoma practically never extends by way of the lymphatics to the perirectal tissue below the cancer, while the spread by continuity is limited to about half an inch beyond the visible or palpable edge of the tumor. This makes possible the preservation of the anal sphincter in selected cases and for this purpose Gehrels advocates the sacral operation according to the method described by Goetze (Zentralbl. f. Chir. 61: 796, 1934). He operates in four stages as follows: (1) low midline exploratory laparotomy; colostomy on the left side of the transverse colon; (2) main operation by Goetze method; (3) closure of posterior defect of the rectum by utilization of a large skin flap already partly formed at the second stage; (4) closure of the colostomy. For the details of the technic and possible variations the original paper must be consulted.

References are appended and there are three illustrations.
THE PANCREAS


A man aged sixty-nine had an illness simulating acute pleurisy. He made a partial recovery but died a few weeks later. An extensive primary growth was found in the pancreas, which, however, had not compressed the bile duct. A metastatic growth measuring about 3 in. in all diameters was present at the root of the left lung but had produced no pressure signs, and the patient showed little or no emaciation. L. Foulks


A sixty-nine-year-old man with carcinoma of the head of the pancreas infiltrating the duodenal wall was treated by resection of the head of the pancreas and practically all of the duodenum. The operation was done in two stages and the patient survived eighty-five days, death being due to multiple metastases. Gross and histologic examination of the liver, stomach, and small bowel revealed no evidence that the removal of practically the entire duodenum had resulted in significant metabolic disturbances during the survival period.

Drawings showing the operative technic, a photograph of the surgical specimen, and a photomicrograph are included. There are four references.

THE FEMALE GENITAL TRACT


The author discusses the various types of carcinoma of the uterus from the standpoint of etiology, histological type, clinical course, diagnosis and treatment, with practical examples from an experience of over forty years. The dangers of biopsy in carcinoma of the uterine body and its occasional shortcomings are mentioned.

Seaton Sailer


This is an extensive review of the association of uterine cancer and pregnancy, with an analysis of 12 cases seen by the author. These cases occurred in 36,513 pregnancies of the Obstetrical Service in Milan, the incidence thus being 0.035 per cent. The incidence of pregnancy in 356 known cases of cancer of the uterus was 3.37 per cent. The tumors were of the usual types. There is a pronounced tendency to such complications as abortion, placenta praevia, prolongation of labor, rupture of the uterus if cervical obstruction is present, hemorrhage and infection, more rapid growth of the neoplasm during and immediately following the pregnancy. If the patient goes to term, the child is usually unaffected by the maternal condition. The signs and symptoms are those commonly associated with uterine cancer, but they are more difficult to evaluate during pregnancy.

Modifications must be made in the treatment indicated in uncomplicated cases. In operable cases, if operation is performed after the sixth month of pregnancy, the immediate mortality is high and there is little possibility of lasting cure—34 per cent mortality and 17 per cent cures, compared with 13 per cent and 62 per cent in the first six months [duration of cure not noted]. During the seventh and eighth months radium therapy may be employed to advantage, giving 26 per cent cures in types of malignancy in which such treatment is indicated. If properly executed, this procedure will not injure the fetus. A cervical stenosis may develop, and cesarean section may be necessary. During the ninth month it is preferable to avoid treatment until cesarean section is opportune, at which time hysterectomy may be performed if possible, followed by the
application of radium. In the puerperium the treatment may be operative or radium may be used.

Milton J. Eisen


Biopsy confirmed the diagnosis of cervical cancer in a woman of twenty-eight in the seventh month of pregnancy. Treatment with radium was instituted and the cervical lesion regressed. At term, cesarean section and panhysterectomy were performed. The child was normal. No neoplastic elements were found in the sections of the uterus examined histologically. Photographs and photomicrographs are included.

Milton J. Eisen


The method of treating carcinoma of the cervix usually followed in the small hospital having only a small amount of radium at its disposal consists in a simple intracervical application of 0.05 to 0.1 gm. of radium for a total dosage of from 2,000 to 3,000 mg. hr. The time varies with the amount of radium available and is rarely less than 30 hours. This may or may not be supplemented by deep x-ray therapy, the dosage of which rarely approaches that given by the Coutard method. An effective dose is given only opposite the center of the tubes and does not extend beyond the limits of the cervix. The remainder of the tumor-bearing area receives a sublethal dose. This method of treatment is not only inadequate for cure but it has the further disadvantage that the tumor cells are increasingly radioresistant after a sublethal exposure. Regaud's method with equally small amounts of radium applied over a long period of time for a total dosage up to 8,000 mg. hrs., and supplemented by roentgen radiation, though requiring a long period of hospitalization has the advantage of greater effectiveness. It is shown to deliver a relatively satisfactory dose to the important routes of extension as well as to the tumor site, as compared to Healy's method requiring large amounts of radium (Radiology 14: 217, 1930).

Diagrams are included to show the distribution of radiation with the three methods mentioned. A bibliography is appended.


The author outlines the routine method of treating carcinoma of the uterine cervix at the Misericordia Hospital in New York City. Intrauterine and vaginal irradiation of 5500 millicurie hours is given routinely in all cases, followed in eight to fourteen days by a second similar application if indicated. Subsequently the patient receives deep x-ray therapy or telecurie therapy as necessary. Several drawings illustrate the method of applying the radium.

Benjamin R. Shore


This paper is a critical review of Heyman's report for the Radiologic Subcommittee of the Section of Hygiene of the League of Nations (Abst. in Am. J. Cancer 32: 316, 1938), based upon the material of six great institutes. Summarizing the 1930 figures presented in the original report for these institutes individually, Schinz finds that altogether 757 women with carcinoma of the uterine cervix were observed in 1930, but of these 83, or 11 per cent, were not treated because of the hopelessness of the case, lack of facilities, refusal of treatment by the patient, etc. After five years 207 patients, 31 per cent of those treated, were free of symptoms. Only 9 per cent of all patients belonged to stage I, and in this group the five-year-cure rate was 63 per cent; 30 per cent
belonged to stage II, and the five-year-cure rate was 42 per cent; 45 per cent belonged to stage III, cure rate of 23 per cent; 16 per cent belonged to stage IV, cure rate, 12 per cent. The considerable differences in the results of the six clinics cannot be explained by accidental selection or statistical error. Knowledge of the radiotherapeutic technic and information as to the race and age of the patients, which are not mentioned in Heyman's report, might furnish further enlightenment on this problem. F. Burgheim


Hysterectomy for fibromyoma was performed in a woman of fifty. In addition to a typical fibroid tumor of the body of the uterus, there was an independent cervical mass, which proved to be a leiomyosarcoma. The patient was free from disease after three years. Photomicrographs of the sarcoma are included. F. Burgheim


A neurinoma approximately 8 cm. in diameter was removed surgically from the broad ligament in a woman of forty-seven. Microscopically, in addition to the typical structure of neurinoma, normal nervous tissue was observed in the mass. Photographs and photomicrographs of the tumor are reproduced. Milton J. Eisen


Two uncommon tumors of the female genitalia are described: a solitary neurinoma situated in the broad ligament in a woman of twenty-four, and a ganglioneuroma of the body of the uterus in a patient of twenty-nine. The symptoms and signs did not vary from those usually associated with neoplasms of this region (lower abdominal pain, bleeding, palpable mass). Recovery followed excision of the tumors. Photomicrographs are included. Milton J. Eisen


A report of two cases of chorionepithelioma. In one case, in a woman of thirty-six whose last pregnancy had occurred five years previously, the primary localization was in the vagina. A decidual reaction was present in the uterus. In the second case the lesion was in the body of the uterus, in a patient of forty, who gave a history of amenorrhea of two months' duration. Both cases terminated fatally despite radiation therapy in the first and operative treatment in the second. Photographs and photomicrographs are reproduced. Milton J. Eisen


A chorionepithelioma of the body of the uterus with perforation into the peritoneal cavity and pelvic peritonitis was found in a patient thirty years of age, who died four months and a half following a normal delivery. Metastases were present in the vagina and lungs. Photographs and photomicrographs illustrate the report. Milton J. Eisen


Abnormal vaginal bleeding developed three months after a normal delivery in a patient twenty-three years old. The symptoms continued for five months. Hysterectomy was performed, and a chorionepithelioma of the cervix was found. The tumor
recurred after one month, and treatment with radium was instituted. The patient succumbed several weeks later with signs of cerebral metastases. Necropsy was not obtained. A review of the literature is given and photographs and photomicrographs are included.

Milton J. Eisen


Hemiplegia developed suddenly in a woman of twenty, three months after spontaneous delivery of a normal full-term child. The patient succumbed one month later, and necropsy revealed a chorionepithelioma involving the entire body of the uterus, with metastases in the cerebral cortex, kidney, and first portion of the jejunum. Photographs and photomicrographs are reproduced.

Milton J. Eisen


Among 1621 cases in which operation was performed for uterine fibromyomata during a period of seven years, the author observed 13 (0.77 per cent) in which the tumor was in the cervix. The growths were solitary, usually one to several centimeters in diameter, and pedunculated or sessile. When large, such tumors may cause difficulty during labor. The accepted treatment is excision. The prognosis is excellent.

Milton J. Eisen


Subtotal hysterectomy was performed in a patient of twenty-eight years for fibromyoma. The uterus was enlarged to about the size of a four months pregnancy; there was a tuberculous endometritis, and tuberculous infection of the numerous interstitial fibroids. Roentgen evidence of possible tuberculosis of the lumbar vertebrae was present. There is a review of 13 similar cases. Photomicrographs are included.

Milton J. Eisen


The fluid from 12 follicular cysts of the ovaries removed at operation was tested for the presence of estrin. The uterus was removed at the same time from 8 of the patients. Two uteri contained fibromyomatous tumors, which may have caused the menstrual symptoms; the remaining 6 showed the characteristic changes of metropathia haemorrhagica. All the cyst fluids contained estrin in at least the same concentration as is found in normal follicles, and owing to the increased volume of fluid the absolute amount of estrin in the ovary was considerably increased.

Seventy ovarian tumors of varying kinds and the corresponding pre-operation urines were examined for prolan A and B and for estrin. Estrin was found only in follicular cysts. Prolan A was found in all types of tumors but was present in larger amounts in cyst fluid and urine when the tumor was malignant. Prolan B was found in the cyst fluid in 2 out of 3 pregnant patients.

There are two tables showing the menstrual history associated with different ovarian tumors and the association of pain and swelling of the breasts before and at the beginning of menstruation with various types of ovarian cyst.

L. Foulds


Cesarean section was performed in a woman of thirty-five at term, as a pelvic mass 8 cm. long precluded normal delivery. The mass proved to be a calcified and ossified ovarian fibromyoma. Photographs and photomicrographs are included.

Milton J. Eisen

Three cases of adenomyoma of the inguinal region are recorded, in two of which the round ligament was involved. The literature on adenomyoma of the round ligament is reviewed and the theories of its origin are discussed. Photomicrographs are included and there is a bibliography.

THE GENITO-URINARY TRACT


This is a rather general discussion of malignant kidney tumors. The origin of the hypernephromas is discussed at some length, but the author concludes that it cannot yet be regarded as established. Although the microscopic structure frequently suggests that of carcinomas of the adrenal derived from the adrenal cortex, and the microscopic grouping of the cells mimics that of the zonae fasciculatae (and reticulatae) of the adrenal, this is not absolute evidence against a possible origin from the renal parenchyma. The mixed or Wilms tumors, seen for the most part in children, are congenital neoplasms made up of derivatives of the three layers of the embryo. In addition to these two main types there is a group of renal carcinomas which infiltrate the kidney parenchyma and another of papillary tumors arising in the kidney pelvis, calyces, and ureter.

Metastases along the ureter in the Grawitz hypernephromas, in the true renal carcinomas, and in the Wilms tumors are most exceptional, while in the papillary group they are sufficiently frequent to demand an aseptic nephro-ureterectomy with excision or destruction of the ureteral meatus in the bladder.

The technic of operation for hypernephromas involving the renal veins is described. Retrograde pyelography the author considers the greatest diagnostic aid. Pyelograms are reproduced showing some of the problems encountered. The technic of transperitoneal and lumbar nephrectomy is also described. The end-results are poor. Few patients with Wilms tumors survive five years and late recurrences are frequent in the hypernephroid and carcinoma cases. The author states that some 34 per cent of his nephrectomized patients were alive after five years, but the number of cases treated is not given.


A girl of two and a half years gave a history of abdominal pain and the passage of blood clots in the urine. The abdomen was enlarged and palpation revealed a hard mass filling the entire right side, extending from the flank to the umbilicus. Pyelograms showed a large mass involving the lower and middle portions of the right kidney and causing the ureter to be pushed across the midline. No metastases were demonstrable roentgenographically. Following radiation therapy a right nephrectomy was done. The tumor was made up of a dense connective-tissue stroma through which ran parallel striated muscle fibers with elongated spindle-shaped nuclei. Postoperative roentgen therapy was given; but death occurred five months after nephrectomy.

Autopsy revealed masses of tumor in both lungs containing striated muscle fibers, while the inferior vena cava was completely filled by a tumor thrombus in which striated muscle was identified. Clinically there had been nothing to suggest occlusion of the inferior vena cava and the authors assume that as the tumor thrombus grew in diameter as well as length, collateral venous circulation was completely established. The authors have found in the literature five other instances of thrombosis of the inferior vena cava by embryonic renal tumors, all involving the right kidney, two of which extended into the right heart.

A pyelogram, photograph of the tumor, a photomicrograph, and references are included.

A woman of fifty succumbed five months after nephrectomy for hypernephroma. Necropsy revealed a local recurrence, and metastases in the lungs, liver, and vagina. Photographs and photomicrographs are reproduced.


This is a general discussion of primary carcinoma of the ureter based on one autopsied case and 40 others collected from the literature. The lower third of the ureter was the seat of the tumor in 77 per cent of the series. In 13 patients distant metastases were present without local extension of the disease. The metastases were distributed to the abdominal viscera and skeleton, but in only 8 instances were they observed above the diaphragm. Nineteen or 54 per cent of the patients lived from two to nine months from the onset of the first symptom; fourteen or 40 per cent lived from one to three years. One photomicrograph illustrates the article.


A thirty-eight-year-old man fell and struck his right side, following which he complained of right renal pain and transient hematuria. Urinary symptoms of increasing severity occurred in the next five months and there was loss of weight. The bladder was greatly distended and attempts at cystoscopy provoked excessive hemorrhage. Suprapubic cystotomy was done and the bladder was found to be filled with cauliflower-like masses of necrotic tumor tissue. These were removed and the broad cartilaginous base together with a wide area of apparently normal bladder mucosa was fulgurated. A suprapubic fistula was established. Two months later necrotic hemorrhagic tumor tissue appeared at the suprapubic opening and examination showed recurrence in the bladder. This was removed and a second fulguration was performed, but the patient was in poor condition at the time of the report.

Sections of the tumor showed varying appearances. One suggested a diagnosis of spindle-cell sarcoma, while a second showed squamous-cell carcinoma. In another transition between these two extremes was found. The diagnosis was spindle-cell epidermoid sarcoma.

The literature of epithelioid sarcoma of the bladder is reviewed and the question of the pathogenesis is considered. The authors are inclined to Borst's view (Echte Geschwülste in Aschoffs Pathologische Anatomie, 1923, vol. 1), that the epithelium overlying an original sarcoma undergoes carcinomatous change.

Photomicrographs and a bibliography are included.


The prognosis of malignant tumors of the testicle is not necessarily so bad as commonly taught. In a series of patients treated in St. Bartholomew's Hospital from 1920 to 1933, 15 out of 38 were cured for five years or longer, and 2 who had been operated on within five years were well for more than four years. The diagnosis of each tumor was verified histologically. There were 19 "teratomas," including all tumors with a definitely mixed structure, and 19 "semimomas," including tumors previously classed as alveolar sarcoma. Of the patients surviving five years or longer, 8 had teratomas and 7 seminomas. The treatment consisted in local orchidectomy, sometimes combined with local excision of inguinal nodes and some form of radiotherapy. There is evidence that the tumors are radiosensitive and, although the best method of irradiation is in dispute, it seems that every patient ought to receive irradiation after orchidectomy. It should be possible to reduce considerably the interval between the onset of symptoms and operation. In this series there was a surprisingly long delay, averaging seven and a half months. The details for the individual patients are summarized in a table.

L. Foulds

Cerebral tumor often produces vestibular symptoms. Six autopsied examples of brain tumor, chiefly of the 4th ventricle, with such symptoms as papillary stasis, abnormal eye findings, and increased intracranial pressure, were investigated from the standpoint of labyrinth pathology. In 3 cases in which no operation was performed, the middle and internal ear was normal. Degenerative and hemorrhagic changes were observed in the other cases. Only one patient showed stasis in the labyrinth. The author concludes that symptoms from the vestibular system, chiefly abnormal eye movements, are not due to labyrinthine changes but to alterations antral to the labyrinths.

SEATON SAILER


Four cases of cerebral tumor are reported in which no abnormality was detected in the ventriculograms although the growths had produced well marked physical signs. The tumors were: a right fronto-parietal astrocytoma, two instances of left frontal spongioblastoma multiforme, a left parietal astrocytoma. Histologically they did not differ notably from other gliomata which produced ventricular deformity. In 3 patients the size of the growth when ventriculograms were obtained was not known. One patient, however, died five days after examination and the tumor measured 6.5 × 4.5 × 3.8 cm. It is evident, therefore, that even large diffuse gliomata may occasionally run their complete course without producing any gross ventricular deformity and that normal ventriculograms do not necessarily prove the absence of tumor. It seems that a small infiltrating glioma in an eloquent site may cause signs and symptoms before it produces ventricular deformity and is more likely to do so than a meningioma of the same size and location.

L. FOULDS


A careful review of the literature and a case report. A woman of fifty-one had had generalized convulsive seizures since the age of two years. At forty years of age she became mentally incapacitated. Death was due to bronchial pneumonia. Autopsy revealed (1) an extensive lipomatosis of the meninges extending over the left parietal, temporal, and occipital lobes, (2) diffuse fibrosis of the involved meninges, (3) microgyri of the underlying lobes, (4) cellular maldevelopment of the involved hemisphere with considerable atrophy and sclerosis, (5) considerable calcification throughout the involved hemisphere.

EDWIN M. DEERY


In three generations of a single family there were encountered 7 instances of tumors of the sheaths and enveloping membranes of the nervous system, appearing as a hereditary trait transmitted as a mendelian dominant. The first generation patient was not seen but was said to have had lumps in the skin and to have become blind and paralyzed before death. In two patients autopsy showed the presence of multiple intracranial and skin nodules; in one, a nine-year-old child, there was intracranial tumor formation but no external evidence of the disease. Two children, still alive, had multiple skin nodules while a third without skin lesions showed evidence of early central neurofibromatosis.

Photographs, photomicrographs, and a bibliography are included.

A case is recorded of primary carcinoma of the lung with metastatic carcinomatosis limited to the meninges of the spinal cord and the base of the brain, particularly the pons. Only two similar cases were found in the literature. Photomicrographs illustrate the report.


A short review of the literature with the addition of three cases. The clinical syndrome described consists of a cutaneous facial nevus and cirrroid aneurysm of the brain on the same side. Clinically the patients showed contralateral focal (jacksonian) seizures, contralateral hemiplegia, and imbecility. In only one of the three cases was an autopsy obtained.


A review of the literature, including a section on neoplasms. The bibliography should be useful.


This is a general discussion of the diagnosis and treatment of diseases of the region of the sella and the chiasm.

THE BONES AND MUSCLES


Radiation therapy was employed in four cases of malignant bone tumor. One tumor was situated in the head of the fibula, two were in the distal portion of the femur, and one was in the skull, presumably metastatic from a femoral tumor previously treated by amputation of the limb. The growths were considered to be sarcomata, although biopsy was performed in only one case.

The results were encouraging. Rapid regression of the tumor and symptoms occurred in all cases but the period of observation was short, five, eighteen, sixteen, and fourteen months respectively.

Photographs and roentgenograms are reproduced.

Milton J. EISEN


A four-year-old girl was admitted with a tumor of the right temporo-parieto-occipital region 7 to 8 cm. in diameter. This was extirpated and found to be independent of the scalp. A recurrence was removed seven months later and subsequent recurrences were treated with radiation. Histologically the tumor was regarded as a metastatic reticulum-cell sarcoma but autopsy over two years after the original operation showed Ewing's sarcoma with pulmonary metastases.

Seaton SAILER


A sixty-four-year-old woman who had undergone a radical mastectomy for carcinoma with axillary node involvement, three years previously, was seen with signs of right...
middle ear involvement. A temporal trepanation for mastoiditis revealed carcinoma cells in the base of the zygomatic process. Postoperative roentgen therapy was given, but metastases appeared in the ribs and the patient died about a month later. A bibliography is appended.

Seaton Sailer


This is a general discussion of angiomas of skeletal muscles, illustrated with the reports of two cases.

Benjamin R. Shore

Hodgkin's Disease; Chloroma


Among 4050 post-mortem examinations, there were discovered 11 instances of Hodgkin's disease, an incidence of 0.27 per cent, which the authors believe is fairly representative for a general hospital with no special tumor clinic. There were five negroes in the series, which would indicate an equal frequency in the white and black races, since the autopsies were equally distributed between the two groups. Ten patients were males; the average age was forty-two and a half years, with extremes of twelve and seventy-seven years. Fever, weakness, and fatigue were present in all cases. Other clinical features were loss of weight and appetite, night sweats, and edema. All the patients had some pulmonary symptoms. Two had skin involvement, 7 both splenomegaly and hepatomegaly, and 2 splenomegaly alone. Enlargement of the cervical, inguinal, or abdominal nodes was the presenting symptom in 5 cases. The average duration from the first clinical diagnosis of Hodgkin's disease to death was twenty-seven months. Six of the patients had an associated pulmonary tuberculosis. Pathologic studies showed involvement of the spleen in 10 cases, generalized lymph node involvement in 10, involvement of the liver in 8, and of the lungs in 7. Lesions were found in one case each in the heart, spinal cord, brain, and kidneys. Bone involvement was not determined.

Photographs of gross specimens and photomicrographs are included, also a short bibliography.


A girl aged seventeen was admitted to the hospital with protrusion of the left eyeball, general weakness, and evidences of anemia. Her illness had begun ten weeks previously with vomiting and neuralgic pains in the face. Anti-anemic treatment, including a blood transfusion, was given, and the orbital tumor was irradiated, but death occurred two months after admission.

The first blood count gave the following figures: hemoglobin 25 per cent; red cells 1,080,000; color index 1.3; while cells 60,000, with 43 per cent myelocytes and 9 per cent myeloblasts. Later counts showed a gradual increase in myeloblasts. In sternal puncture films the most numerous cells were about twice the size of a red cell and had large, rounded, pale nuclei and non-granular cytoplasm. The orbit contained a green tumor $\frac{1}{2} \times \frac{3}{2} \times \frac{1}{2}$ in. in size. The posterior surface of the sternum was covered by a flat, yellow-green tumor, and the ovaries were replaced by green tumor. There was widespread permeation of the sinuses and perivascular portal sheaths of the liver with "chloroma" cells and the splenic pulp was packed with them. Numerous enlarged mesenteric glands contained "chloroma" cells. Accumulations of these cells were found, also, in the kidneys, pancreas, appendix and bone marrow. The predominant cell in the bone marrow measured 12 to 20 microns and had a large nucleus, usually round. In fresh films stained for oxidase by the Goodpasture technic most of the large mononuclear cells gave a marked positive reaction but they had a dense nuclear membrane not typical of myeloblasts.

L. Foulds

A boy aged six was admitted to the hospital with a three weeks' history of double exophthalmos and died twenty-four hours later. He was emaciated, with a disproportionately large skull and swellings at the angles of the jaws. The swellings consisted of green sarcoma-like tissue. The liver was enlarged and there were green infiltrations along the portal tracts. The spleen was five or six times the usual size and was deeply congested. There were greenish infiltrations in the cortex of both kidneys, but the genital and endocrine glands were normal. The lymph nodes of the neck, mediastinum, and mesentery were enlarged, discrete, and green. Thin deposits of green material were found beneath the temporal muscles and along the sutures of the skull. Rather soft, broad, flat green masses were scattered over the internal surface of the dura, but the brain was not invaded. The orbits were packed with green material. The bone marrow had the same green color, which faded to grey on exposure. Microscopic examination of the dural tumors showed the chloroma to be of the large lymphoid-cell type.

L. Foulis


This paper includes a brief section on cancer, and a map is reproduced showing the distribution of cancer mortality in the United States. The average is shown to be much higher in two unbroken groups of contiguous States—one extending from Maine to Maryland on the east and to Colorado on the west, and one comprising the Pacific Coast States—than in other parts of the country. Even when allowance is made for the fact that these states have a considerable population in excess of sixty years of age this difference is still observed. Five states were selected for comparison of the death rates in persons of the same age-sex groups because the basic data for them are available, and because three of them—Massachusetts, Connecticut, and New Jersey—are fairly representative of one of the higher-cancer-death-rate zones, and two of them—Virginia and Alabama—are fairly representative of one of the low-cancer-death-rate zones. In each group of thirty years of age and over the rates for Massachusetts, Connecticut, and New Jersey were found to be consistently higher than those for Virginia and Alabama.


General discussion touching on cancer institutes, statistics, lay education, and the responsibility of the physician.