ABSTRACTS

EXPERIMENTAL STUDIES; ANIMAL TUMORS


Primary lung tumors appeared in over 90 per cent of strain A mice within four months after the intratracheal introduction of 0.1 mg. 1:2:5-6-dibenzanthracene or methylcholanthrene dispersed in 0.1 c.c. horse serum and cholesterol. The intratracheal route of administration, however, is not as convenient nor as efficacious as the intravenous. References are appended.


Twenty young female guinea-pigs were given 4 injections of 0.2–0.3 c.c. of undiluted thorotrast into the base of the nipple. A tumor was discovered in one animal about 138 weeks after the first injection. At that time only 8 others of the series were alive, and in 3 of these a tumor subsequently appeared. The tumors comprised one carcinoma, two sarcomata, and a fibrosarcoma; the first three were transplantable and the carcinoma had been transmitted through 15 generations. Photomicrographs and a bibliography are included.

Carcinoma of the Kidney in Rats Treated with Beta-Anthraquinoline, A. Sempronj and E. Morelli. Am. J. Cancer 35: 534–537, 1939.

Eleven rats were given two or more subcutaneous injections of 4 mg. of beta-anthraquinoline in lard. Among 8 animals which died in the eleven months following, 6 showed kidney lesions. Tumor nodules were present in the kidneys of 2; the microscopic structure was that of adenocarcinoma. Photomicrographs and references are included.


Three pituitary tumors developed in 131 female mice receiving prolonged treatment with estrone; none was present in 97 controls. Two of the tumor-bearing mice had also received inguinal implants of 1:2:5:6-dibenzanthracene.

Experimental Production of Sarcoma in Rats by Means of Chemical Substances, Y. Nishiyama. Experimentelle Erzeugung des Sarcoms bei Ratten durch chemische Substanzen, Gann 31: 223–225, 1937.

Repeated subcutaneous injections (more than 100 times) of 4 c.c. of 2.5 per cent glucose solution into rats fed with o-amido-azotoluene produced sarcoma at the site of injection in 18 out of 35 rats, or 51 per cent. Of 13 rats which received more than 200 glucose injections, 11, or 85 per cent, showed sarcomas. Injection of a larger dose of glucose solution produced still more sarcomas. On the other hand, in 22 rats fed with o-amido-azotoluene and injected with physiological saline solution, no evidence of tumor was obtained. Sarcomas were produced by glucose injection alone, but much less frequently than when glucose was given with o-amido-azotoluene. Three out of 5 induced tumors were successfully transplanted into normal rats for many generations. K. Sugiura

Subcutaneous injections of o-amido-azotoluol in olive oil produced a striking epithelial overgrowth in the livers of mice while in guinea-pigs similar overgrowth was noted in the thyroid. Prolonged feeding of this substance, mixed with rice, to white rats produced primary liver-cell carcinomas. Experiments were carried out on 360 white rats and in 86 cases typical malignant hepatomas were produced. It was found that malignant growth appeared after 250 days. In one case the interval was only 196 days. No certain evidence of inflammation was present in any instance. Growth appeared to be multicentric in origin and metastases were occasionally seen in the lungs and lymph nodes. Diminution of the size of the dose materially delayed the appearance of the tumor, but once growth was initiated discontinuance of the drug did not interfere with subsequent tumor development. These tumors were transplantable.


Repeated injections of cholesterol were found to have a stimulating influence upon the growth of Flexner-Jobling rat carcinoma and Fujinawa rat sarcoma. When cholesterol was injected into rats intravenously, it generally was retained in the reticuloendothelial system. There was deposition of cholesterol crystals in the liver, spleen, adrenal gland, thymus and testes. In rats fed with o-amido-azotoluene, hepatoma developed after a year. Nodular hyperplasia of the liver or adenomatous conditions occurred first and after 270 days transformation to hepatoma could be seen. Injections of cholesterol and lecithin during this period accelerated the development of the hepatoma. Male rats were much more susceptible to the tumor than females.


The alteration of tissue metabolism in the liver of rats was estimated by Warburg’s method during ingestion of o-amido-azotoluene for 281 days. The animals were divided into three groups. The first group received a weekly injection of 39 per cent cholesterol emulsion, the second group 19 per cent lecithin emulsion, and the third group no injection. The livers of the first group showed a decrease in respiration to two thirds of normal on the 7th day; the second and third groups showed no reduction in tissue respiration until the 33rd to the 44th day. Anaerobic glycolysis in the first group decreased on the 7th day, but between 33 and 40 days the anaerobic glycolysis in all three groups suddenly increased to once and a half or twice the normal value. Aerobic glycolysis remained at zero in all three groups. On the 62nd to 68th day the decrease in tissue respiration is slight, and by the 262nd to 281st day it no longer depends upon the progress of carcinomatous degeneration of the liver tissue.

A Case of Histiocytic Tumor (Fibrohistiocyteoma) in the Rat, K. Kiyono and T. Tomita. Ein Fall von histiocytärer Geschwulst (Fibrohistiocteytom) bei der Ratte, Gann 31: 216–217, 1937.

Among a large number of rats fed with o-amido-azotoluene the authors discovered one histiocytic tumor growing in the subcutaneous tissue on the 180th day. The tumor showed trypanosome infestation. In the protoplasm, lipoids and cholesterol were found. In only one variety of tumor cells, i.e., histiocytic cells, were trypanosomes enclosed. Transplantation of this tumor into normal rats was unsuccessful.

K. Sugiura

This article contains no new material, but gives a good summary of the literature on the Rous chicken sarcoma, Shope rabbit papilloma, and Klein's theories of carcinogenesis (see Arch. f. klin. Chir. 183: 194, 1935. Abst. in Am. J. Cancer 27: 149, 1936). There are no illustrations.

Edward Herbert, Jr.


The author applied 8 to 10 drops of a 0.3 per cent solution of methylcholanthrene or of cholanthrene to the skin of white mice three to four months of age three times a week. Mice of each group were killed at definite intervals until a malignant tumor appeared, after which each mouse was killed as a clinically malignant lesion or symptoms of illness developed. Immediately after the death of the mouse a piece of the skin from the treated area was removed. The cells were studied under the oil immersion lens, and the area of the nuclei and nucleoli was determined by a special method which the author describes.

The carcinogenic agents caused an immediate increase in the size of the cell, nucleus, and nucleolus, which was most marked in the nucleolus. In the group to which methylcholanthrene was applied, squamous-cell carcinoma appeared within seven weeks and in that to which cholanthrene was applied, it appeared within eighteen weeks. The average nuclear and nucleolar areas in the carcinomas were greater than those in the hyperplastic epithelium of the animals in which malignancy did not develop.

In a control group of animals to which benzene alone was applied there were no changes in the nuclei or nucleoli.

Photomicrographs are included.


A transplantable rat sarcoma, which had proved resistant to various substances which had been found by others to cause the disappearance of tumors, regressed completely in 20 of 51 rats following intraperitoneal injections of an aqueous emulsion of 1 : 2 : 5 : 6-dibenzanthracene and lecithin. In many of the other animals growth of the tumor was greatly slowed. Intratumoral injections were much less effective in bringing about this result. A bibliography is furnished including references to Haddow (Nature 136: 868, 1935. Abst. in Am. J. Cancer 26: 620, 1936) and Pybus and Miller (Brit. J. Exper. Path. 18: 126, 1937. Abst. in Am. J. Cancer 32: 460, 1938), who also observed inhibition of tumor growth following intraperitoneal injection of carcinogenic hydrocarbons.


The Ehrlich mouse carcinoma and sarcoma were transplantable in 100 per cent of the author's stock mice. Both tumors were also transmissible with organs of tumor mice, but this is conceded to be attributable to microscopic metastases or to the presence of dormant but virulent tumor cells. In the course of routine transplantation of the sarcoma, a sudden unexplainable increase in the virulence of the neoplasm was observed, characterized by more rapid growth and consistent production of metastases. This condition persisted for ten tumor generations during a period of three months. The possibility that the exaggerated virulence depended upon a temporary utilization of a uniform strain of animals better adapted for the growth of the Ehrlich sarcoma is not considered. The tumors were not transmissible with cell-free extracts, but it was possible to produce the sarcoma, at the time of greatest virulence, with a tumor suspension in Ringer's solution filtered through paper. While under ordinary circumstances 50,000 to 400,000 cells were required to transmit the sarcoma, 3000 to 10,000 now sufficed. [Transmission of tumors with a minimum number of cells has been described.

The author appends a lengthy discussion of the problem of virulence in tumors. Tumor cells are classified as to virulence by their ability to grow in transplants and their rate of growth. The second factor may differ from the first, and not uncommonly tumors which are readily transplantable have a slow growth rate. The virulence of a transplanted tumor depends upon the inherent resistance of the neoplastic cell to the destructive action of natural antibodies or immune substances of the host, the nature of which is as yet unknown. An increase in virulence in the course of transplantation follows the natural selection of more resistant tumor cells and their adaptation to the immune factors of the inoculated animals. This intrinsic characteristic of the cells does not disappear after long-continued cultivation in explants. Virulence may be influenced by exogenous factors, as excessive cold and heat or toxic agents, and supposedly by certain endogenous factors, as the general condition of the inoculated animals, their diet or hormonal balance. Many observations tending to demonstrate the possibility of influencing the growth of transplantable neoplasms appear, however, to be founded on inadequate evidence or utilize animals of variable and, not infrequently, of unknown genetic constitution.

Transplantability does not necessarily indicate a malignant nature of the neoplastic cells. Mammary fibro-adenoma in the rat is frequently transplantable in series, and the growth maintains its benign characteristics during many generations. An increase in virulence often does determine an accentuation of the malignant nature of a tumor, as demonstrated by more rapid infiltrative growth, a tendency to metastasize, and ability to kill the host rapidly. The author found that the Ehrlich sarcoma, at the time of its greatest malignancy, was capable of producing metastases within five to seven days after transplantation, while under ordinary circumstances it rarely metastasized. Not infrequently however, slowly growing tumors metastasize readily.

A bibliography is appended.

Milton J. Eisen


Walker rat carcinoma 256, mouse sarcoma 37, and mouse sarcoma 180, frozen once en masse to $-74^\circ$ C. continued to grow on subcutaneous transplantation. The incidence of takes was not affected significantly by the rate of freezing or the duration of the frozen state up to twenty-four hours. The Walker tumor survived a greater number of repeated freezings than did either of the sarcomata. Slowly induced repeated freezings were more injurious than rapid inductions of the minimum temperature. Saline suspensions of the tumors were more sensitive to cold, especially when this was prolonged. Squamous epithelial and connective-tissue cells of normal adult rat skin grew after a single freezing to $-74^\circ$ C.

Photomicrographs and references are included.


Two groups of mice bearing sarcoma 180 were given intravenous injections of a meningococcus filtrate. One group, consisting of 104 mice bearing ten-day-old tumors, received a dose of the filtrate (100 rabbit reacting units) known to cause tumor regression in a high percentage of animals. Seventy-six of these animals were killed between the second and the tenth day thereafter. Of those which were not put to death, 4 had actively growing tumors after three days and ultimately died from that cause; 4 died between four and six weeks without evidence of tumor; 20 were alive after thirteen weeks without tumors. The second group of animals received a smaller dose of filtrate (20–25 rabbit reacting units), known to cause tumor regression in only a small percentage of animals. Part of these animals, bearing ten-day-old tumors, were killed after periods varying from four hours to nine days. The others, with tumors three to twelve days old, were killed twenty-four hours after injection of the filtrate.
The authors present the findings for both groups. The three-, four-, and five-day-old tumors showed no response to the injections. The response of eight-, eleven- and twelve-day-old tumors was similar to that of the ten-day-old tumor, which was taken as the model for these studies. The observations may be summarized as follows: After an intravenous injection of meningococcus filtrate in a mouse bearing sarcoma 180 there is a brief period of congestion and hemorrhage, which reach a maximum approximately four hours after the injection. This is followed by necrosis of the tumor cells and extensive edema. If the dose is sufficiently large (about 100 rabbit reacting units) the entire tumor subsequently sloughs out, and healing follows with a granulation tissue response and restitution of the surface epithelium. With a smaller dose, renewed growth of the tumor takes place from residual undestroyed tumor cells, usually located at the periphery. Thrombi or other vascular alterations are not seen. In agreement with the findings of other investigators, the authors believe the effect of the intravenously injected filtrate on the tumor is directly on the tumor cells.


Observations in a series of four experiments employing 76 rabbits and supported by a large collateral series indicate that an homologous material from the Brown-Pearce rabbit tumor described by the author is biologically different from the Duran-Reynals testicle extract factor. A single injection of 0.3 c.c. testicle extract two weeks before tumor inoculation failed to alter the incidence, volume, or distribution of primary or metastatic tumors, or to affect the mortality-longevity relationship, all of which values can be altered by homologous material similarly administered. A method of bio-assay of the homologous material is presented. References are appended.


Vitamin E was found to be without significant effect on the carcinogenic action of methylcholanthrene dissolved in lard or spermaceti and injected subcutaneously.

Spontaneous mammary carcinomata arose in strain A females whose vitamin E stores permitted a "first litter" fertility. On a rancid diet, in which all trace of vitamin E is destroyed, the incidence of mammary tumors was very much lower. Whether this is due to lack of vitamin E or to some other dietary influence has not been determined.

References are appended.


Injection of chloroform before implantation of Fujinawa rat sarcoma in rats caused retardation of tumor growth, while injection of the sodium salt of desoxycholic acid had an accelerating effect.

K. Sugiuura


With the idea that a virus in mouse sarcoma 37, if it contain one, might disclose its presence by stimulating benzpyrene reactions as the Shope papilloma and fibroma viruses initiate the malignant change in tar warts and tar granulomas respectively, finely mashed tumor was inoculated into mice bearing benzpyrene lesions at various stages from mere thickenings up to frank neoplasms. References are appended.


Sugiuura found that if mouse sarcoma 180 was irradiated in vivo with a dose of 1500 roentgens (measured in air) and subsequently removed, and fragments were implanted into non-irradiated mice [whether market mice or pure strain is not mentioned], the percentage of takes decreased with the time the tumor remained in the original host.
ABSTRACTS

after exposure. [This confirms in general the observations of Kok and Vorlaender (Strahlentherapie 14: 497, 1923; 15: 561, 1923), long since disproved.]

If small portions of the bodies of mice were irradiated with a dose of 1500 r and untreated tumor fragments were inoculated into the irradiated areas, a high percentage of tumor transplants failed to grow if the implantation was done within two hours after irradiation. If untreated tumor fragments were implanted in the irradiated areas seven days after irradiation, the number of tumor takes and the rate of tumor growth were almost normal.

The growth capacity of irradiated tumor tissue was reduced by immersion in isotonic and hypotonic Locke-Ringer solution but was increased by immersion in hypertonic solution.

Photomicrographs of irradiated tumors are included and there is a bibliography of references to support the author's views. It might have been well to refer to the opposition.

Changes of the Neuroglia in Intracerebral Transplantation of Tumors, F. Nakamura.


Fragments of Kato rabbit sarcoma and Flexner-Jobling rat carcinoma were injected into the cortex of the brain of rabbits and rats, respectively. At first the microglia and oligodendroglia cells between the transplanted tumor tissue and brain tissue showed an increase. Then the macroglia cells were increased. The microglia cells took part in phagocytosis and absorption of decomposed products.

K. Sugiura


The authors studied the effect of the growth hormone on two strains of hemocytoblastosis which produce both sarcoma and leukemia in inoculated fowls. Twenty adult chickens, 10 of which had received daily intramuscular injections of the growth hormone, were inoculated intravenously with leukemic blood. Eight of the 10 controls and 6 of 9 experimental animals (one having died of intercurrent disease) subsequently died of hemocytoblastosis.

Injections of growth hormone also failed to increase the production of hemocytoblastosis or sarcoma after intramuscular inoculation of leukemic blood or implantation of bits of sarcoma from tumor-bearing animals. A sarcoma originally produced by 1 : 2 : 6-dibenzanthracene, on the other hand, gave a higher percentage of takes on transplantation to chickens treated with the growth hormone than in untreated fowls but, as the author points out, the number of fowls (16 including controls), and especially of tumors, was too small to rule out the possibility of mere coincidence as an explanation of these results.

The effect of the gonadotropic hormone was also studied. It failed to prevent or delay the development of leukemia in either young or old fowls but exerted some inhibitory effect on the growth of transplanted sarcomas, which in the treated animals attained only about half the size reached in the controls.

References are appended.

Influence of Roentgen Radiation on Immunity to Shope Fibroma Virus, J. Clemmesen.


In view of the demonstration by various workers that a general exposure of mice and rats to roentgen radiation will decrease their resistance to subsequent inoculation of a tumor or a leukosis, the author attempted to discover whether a similar decrease in resistance could be demonstrated when a virus (Shope fibroma) was inoculated into irradiated rabbits. This was established, and it was shown that the effect must be explained as a delay of the development of immunity to inoculations of the virus employed, probably due to a temporary inactivation of the reticulo-endothelial system. Graphs are included to illustrate the experimental results and references are appended.

The author investigated the influence of different conditions upon the Lehmann-Faciis serum reaction. Since this reaction depends upon the interaction between the serum euglobulin and phosphatides, and since the thyroid plays an important rôle in protein metabolism, the effect of thyroid function was first studied. Two days after implantation of fragments of Kato rabbit sarcoma into rabbits, blood was withdrawn daily from the veins of the ear and the serum was employed for the test. Results showed that when thyroid function was eliminated, the serum reaction was very weak. When thyroxin was injected, however, the serum gave a stronger reaction than the control. Following cholesterol injections and lecithin injections the serum reaction appeared much earlier than in the control group, and was very strong. K. Sugiura

The Influence of Several Home Remedies on the Growth of Rabbit Tumor, Y. Saito.

Der Einfluss einiger Hausmittel auf das Kaninchengeschwulstwachstum, Gann 31: 275–281, 1937.

The growth of Kato rabbit sarcoma and Fujinawa rat sarcoma in animals fed with powdered Lactuca sativa (lettuce) was noticeably retarded, while the body weight was not affected. Although intraperitoneal injection of the aqueous extract of Tetragonia expansa Murr (New Zealand spinach) had an inhibitory effect upon tumor growth, it also had a toxic effect upon the animals. Prolonged feeding of shells and seeds of Trapa natans (water chestnuts), Conandro ramodioiides, fungus of plum tree, and crown gall of Kraunhia floribunda (wistaria vine) increased tumor growth. When these materials were cooked with water and the extracts were injected into tumor-bearing animals subcutaneously, the growth of tumors was also stimulated. K. Sugiura

Effect of Oil of Wintergreen on Spontaneous Tumors of the Mammary Gland in Mice.


Heptyl aldehyde was added to the diet of 53 mice with spontaneous mammary gland tumors. The growth rate of the tumors was retarded and extensive softening and liquefaction occurred, in some instances to the point of complete collapse of the tumor. The life of the animal was prolonged. The effects were not as pronounced, however, as were obtained with the low-boiling-point fraction of oil of wintergreen, of which heptyl aldehyde is a constituent (Am. J. Cancer 32: 227, 1938).


In an earlier preliminary report (Science 86: 566, 1937. Abst. in Am. J. Cancer 34: 602, 1938) the authors recorded the occurrence of adenomatous lesions of the stomach in mice of the I strain. This is a fuller description of the lesions with gross and microscopic illustrations.

This condition occurs in virtually all mice of both sexes of this strain and is the chief cause of death. It consists in an adenomatous, hypertrophic, hyperplastic overgrowth of the glandular rugae of the pyloric mucosa. Degeneration and infiltration by inflammatory cells are present together with development of atypical epithelium with limited penetration into the deeper gastric wall and blood vessels. Although histologic studies reveal certain features that are somewhat suggestive of malignant growth, there are contradictory criteria, such as the symmetric development of the process and the absence of metastases and of unlimited local spread, extensive ulceration, and destruction. Associated with the later stages of the disease there is a pronounced anemia.

A statistical analysis was made of the growth rate of spontaneous mammary carcinoma in 100 female mice of Strain A, beginning as soon as the tumors were palpable. This indicated that the cancer exists as a "progressively growing" unit from three to four weeks before it can be detected and that the precocious drop in the hemoglobin which has been described elsewhere (Am. J. Cancer 27: 500, 1936) precedes the actual onset of carcinoma.

A number of charts are reproduced and references are appended.


Benzpyrene, methylcholanthrene, and dibenzanthracene in water-soluble form were found to increase the growth rates of plant tissue cultures of pea rootlets and to stimulate regeneration of planarian tissues, as evidenced by the shorter time required for complete reconstitution of these animals from segments as compared to controls. Reproduction of whole animals was also stimulated by contact with aqueous solutions of the carcinogens. This ability to increase tissue regeneration, whole animal reproduction, or the rate of plant growth is not, however, a specific property of the carcinogenic hydrocarbons. References are appended.


The addition of 1 : 2 : 5 : 6-dibenzanthracene to yeast suspensions produced varying effects depending on the molar concentration. Whereas a concentration of $9 \times 10^{-4}$ M caused a 50 per cent increase in cell number, quantities both larger and smaller had less effect, and four times this amount was sufficiently toxic to be inhibitory. High concentrations stimulated respiration, but in the concentration range most effective for growth promotion a reversal of the respiration effect, from stimulation to inhibition, took place.

Tissue Culture


Twelve years ago five small fragments of the Frankfort strain of the Ehrlich mouse adenocarcinoma were cultivated as hanging drop cultures. Since then these fragments have multiplied to nearly 100,000 cultures. The culture medium used has, with minor modifications, consisted of a mixture of chick and rat plasma and chick embryo juice. Regardless of seasonal variations in the takes of the carcinoma cells inoculated from time to time into animals to test their malignancy, the malignant properties of the cells have remained practically constant during the twelve-year period of cultivation. The carcinoma cells have remained mouse cells besides maintaining the property of cancer cells, and have been able to synthesize their own specific cytoplasm from substances contained in the heterologous medium in which they were cultivated. The malignant character of cancer cells, it is concluded, is an inherent property which is maintained indefinitely although the cells are cultivated in media derived from animals in which they are not able to multiply.

A. F. Watson

Lewis describes a peculiar type of mitosis, characterized by extreme contortions, lobulations, and constrictions of the dividing cell, and for a short period thereafter of the two daughter cells, in a transplantable spindle-cell mouse sarcoma, C37, originally produced by dibenzanthracene. He explains this by the development of changing contraction bands of the so-called plasmagel layer. Photomicrographs and references are included.


The outgrowth of sarcoma cells from the venous blood of the rabbit spleen following irradiation in vivo with x-rays or ultraviolet rays was studied. With a dose of 500 r, the growth was noticeably reduced; with smaller doses there were marked changes in cell structure. Ultraviolet irradiation for more than ten minutes caused retardation of growth.


The authors describe various aids to the cultivation of tissues in vitro. These include a beef plasma, the use of thromboplastin by means of which the coagulation time of the plasma can be controlled, a sterile air tunnel, methods of cleaning and grading Chamberland-Pasteur filter cylinders, a simplified technic for making trypsin subcultures, and the use of trisodium phosphate for cleansing laboratory glassware. Illustrations are included.


From 1922 to 1936 there were encountered at the Mayo Clinic 22 tumors ventral to the sacrum. Prior to 1922 there had been recorded from that clinic 19 cases (Hundling: Surg. Gynec. & Obst. 38: 518, 1924). This area is the site of many complex fetal changes and the tumors are believed to arise from remnants of fetal structures. There are no characteristic symptoms, but pain, constipation and vesical and urinary incontinence may occur. Rectal examination is the chief diagnostic procedure and surgical removal through a modified Kraske type of posterior incision is the treatment of choice. Recurrence is frequent. The prognosis in the malignant cases is poor.

The authors’ series included 8 chordomata, 9 dermoid cysts, a teratoma, a fibrosarcoma, a chondro-myxosarcoma, a squamous-cell carcinoma, and a fibroma. One photomicrograph of a chordoma is included. References are appended.


A girl nineteen months of age had a congenital tumor of the sacral region which had continued to grow since birth. It was removed surgically and was found to be a complex teratoma containing adult tissues from all three germ layers. Two photographs are included.


The authors record 2 cases of glomus tumor involving the fingers, in which they made a special study of the vasomotor changes. Immersion of both hands in cold water is normally followed by their gradual synchronous reheating. In the presence of a glomus tumor, however, the reheating of the involved hand is greatly accelerated, so that within
ten minutes its temperature may exceed that of the other by 6° to 8°. This evidence of vasodilatation affects the entire hand and disappears following removal of the tumor, though some time may elapse before a complete return to normal—three to eight weeks in the authors' patients. The persistence of the vasodilatation was correlated with discomfort in the scar, which suggests that pain acts as the afferent stimulus producing the phenomenon. References are appended.


A glomus tumor of the finger tip is reported. The attacks of pain were associated with the appearance of beads of perspiration over the terminal phalanx of the finger. There was no discoloration of the overlying skin nor was it visibly elevated or dimpled. Photomicrographs and references are included.


A general description of the types of striated muscle tumors is given and a case is reported of a man seventy-five years of age who developed a facial paralysis. A tumor was found in the lateral cervical region. Biopsy showed it to be a rhabdomyosarcoma. Radiotherapy was given with no improvement and the patient died. Autopsy confirmed the diagnosis. Four photomicrographs are included.

EDWARD HERBERT, JR.


Gamna and Forconi do not believe that there exists an absolute relationship between Cushing's syndrome and basophile adenoma of the hypophysis. In 39 cases from the literature, basophile adenomas of the pituitary were present in 21; in 2 there was simple basophile hyperplasia; in one each an eosinophile adenoma and a basal-cell adenoma; in 14 there was no pituitary disturbance. Of this last group of patients, 5 had suprarenal cortical tumors and practically all of the series had hypertrophy of the suprarenal cortex.

After mentioning a case of their own in which a suprarenal cortical adenoma was present, the authors cite two cases from the literature, one of a malignant, metastasizing tumor of the adrenal cortex (Hare, Ross, and Crooke: Lancet 2: 118, 1935. Abst. in Am. J. Cancer 27: 612, 1936); the other of an eosinophile adenoma of the pituitary associated with a cortical adenoma of the adrenal (Horneck: Ztschr. f. klin. Med. 129: 191, 1935. Abst. in Am. J. Cancer 29: 633, 1937).

The authors believe that basophile hyperplasia is simply one of the most constant findings in the complex endocrine dyscrasia bearing Cushing's name. Even more impressive is the constancy of suprarenal cortical changes and these should always be investigated when the syndrome is suspected.

ADOLPH MELTZER


An example of multiple mesenchymal hemendothelioma is recorded with a detailed microscopic study, and the literature is reviewed. The author summarizes his case as follows:

"A sixty-five-year-old man was in the hospital for six weeks before he died of bronchopneumonia. Three days before admission, after several months of generalized aches and pains, complete paralysis appeared below the level of the second thoracic vertebra. At necropsy there were numerous vascular neoplasms throughout the body—in viscera, soft tissues and skeleton. The largest (18 by 13 by 10 cm. weighing 1,170 gm.) was in the right iliac fossa. The lymph nodes were not involved.

Microscopically the tumors were basically similar. A primitive endothelial syncytium formed the chief tissue, with areas strongly suggestive of mesenchyme. Bone formation was seen in the largest new growth, where hematopoiesis was most marked.
Collagen fibers were formed in some places, but building of elastic tissue was not noted. It was thought that the multiplicity of tumors was due in part to multiplicity of primary foci and in part to metastasis."

A possible relationship to Kaposi's disease, in which there are also multiple vascular foci, is suggested. Photomicrographs are included, and a bibliography.


Only one of the two cases referred to in the title was of neoplastic origin. A twenty-two-year-old man had a painful swelling, approximately 12 cm. in diameter, in the upper portion of the left thigh immediately below the greater trochanter. Three years previously an abscess in this area healed after incision. Roentgen examination of the thigh revealed deposits of calcium in the mass, but no involvement of the femur. The tumor was removed and histologically proved to be a spindle-cell sarcoma containing areas of osteoid tissue and bone. The further course is unknown. Three roentgenograms are included.


Putzu mentions some 40 biological tests which have been reported as of value in the diagnosis of cancer, quoting about twice as many authors to demonstrate the uncertainty of all of these methods. He concludes that diagnosis must be based on a coordination of clinical, biological, endoscopic, radiologic, and pathologic facts. Some general statements on therapy complete the paper.

There is no bibliography; only 3 sources are specifically mentioned in the text.


The method described is briefly as follows. The specimen supposed to contain nodes is fixed in Kaiserling solution 1, washed in running water, and then dehydrated in several changes of alcohol, working from 85 per cent up to absolute alcohol. The duration of each change is about two to three days. The specimen is then transferred to a solution of methyl salicylate U. S. P. and allowed to clear. The time required for complete clearing varies from a few hours to several days, depending on the thickness of the tissues and the degree of dehydration accomplished by the alcohol. In the cleared specimen the nodes appear as more or less opaque nodules, which stand out in contrast with the almost transparent fat tissue, so that they can be picked out and sectioned in the usual manner. Very small nodes can be found with this technic.


Frogs injected with the blood serum of carcinoma patients mixed with the melanophore hormone, in the form of Hypophysin, failed to show the changes in the skin color that occur in animals treated with the hormone mixed with normal serum. The melanophore hormone is not destroyed but is slowly inactivated by the carcinoma serum, due apparently to the action of a specific anti-hormone. On the basis of this ability of carcinoma serum to inhibit the melanophore hormone from exerting its color-changing effect in frogs, the author has devised a diagnostic test. Thirteen hundred sera were tested, but the number of false positives appears to invalidate the usefulness of the measure.

The authors advocate protracted radium irradiation [at one time extensively used at the Curie Institute in Paris by Regaud], especially for intracavitary and interstitial treatment. They describe the technic of application for tumors of the nasopharynx, nasal cavities, the larynx, the maxillary antra, and the base of the tongue. In most instances the technic is intended for use in conjunction with roentgen therapy. No results are quoted. Two drawings of applicators are reproduced and a bibliography of three references is appended.


These studies on the wavelength dependence of radiobiological reactions were carried out with seedlings of Lycopersicum and Triticum exposed to 200 kv. and 700 kv. roentgen rays. The results confirm previous findings (Am. J. Roentgenol. 40: 906, 1938) with these organisms indicating wavelength dependence.

THE SKIN


This article is a summary of the work of Roffo on the carcinogenic properties of ultraviolet light. It contains no new material, and is not illustrated.

Edward Herbert, Jr.


In a period of ten years Fèvre has seen 6 cases of the calcified epithelioma of Malherbe in children under twelve years of age. In 3 the lesion was located on the face, in 2 on the neck, and in 1 on the forearm. The diagnosis was made clinically in all but the first case, the bony hardness, attachment to the skin, and lack of adherence to the deeper layers being almost pathognomonic. The tumor is benign, does not recur after removal, and is probably a congenital remnant. One roentgenogram is included.

The first of the papers listed above is a report of the case involving the forearm. The patient was a six-year-old girl.

Edward Herbert, Jr.


The danger of incomplete treatment of skin cancer is illustrated by two cases, in one of which inadequate radiotherapy had been employed and in the other local caustics. In both the tumor metastasized. The only proper treatment is biopsy followed by surgical excision for squamous-cell cancer and excision or radiotherapy for basal-cell tumors. There are no pictures.

Edward Herbert, Jr.


The author describes his technic for operating on carcinoma of the mucous membrane of the cheek and records 10 cases in which it was employed. In this series there was a
single recurrence; 2 patients had died of intercurrent disease; 7 were well, 2 for over
eleven years after operation and 2 others for more than eight years.

A skin incision is made, starting at the level of the lower attachment of the pinna and
continuing along the posterior border of the ascending ramus of the mandible as far as
its angle, thence following the inferior border until it reaches the symphysis. The skin
is then dissected from the underlying structures far enough upward and forward to make
certain that the area of skin raised is greater than the internal attachment of the tumor.
The facial artery and vein are divided between ligatures where they cross the lower
margin of the mandible and are then dissected as far as the anterior and upper limits of
the upturned skin flap, where they are ligated, the intervening portions being excised.
A quantity of ribbon gauze is packed between the skin flap and underlying soft tissues
and the tumor is removed by diathermy excision through the mouth. The gauze pack-
ing is then taken out, the flap replaced, and the wound closed. Drawings illustrate the
steps in the procedure.


A series of 48 cases of cancer of the eyelids proved by biopsy is recorded. Among
etiologic and contributory factors the author mentions chronic irritation from eye-
glasses, burn scars, repeated styes, contact with oil and its derivatives, and exposure to
sunlight. Thirty-eight of the lesions were of the basal-cell type, 8 were squamous-cell
cancers, 1 was of mixed type, and 1 was metastatic from a cancer of the pancreas. In
3 instances the eyelid was involved by extension from the adjacent skin. Fourteen of the
patients had recurrences after treatment elsewhere.

Irradiation was employed in this series with excellent results. Forty patients were
alive and free of disease—in 18 cases for three years or longer; 7 had died of intercurrent
disease; 1 was followed only eight months. The type of treatment varied: in 18 patients
superficial radium therapy was given, the application being made to the growth for a
dose of 450 to 650 mg. hours in a single treatment. Sixteen patients, including all with
squamous-cell carcinomas, were treated by implantation of radium needles or radon
seeds. For the more extensive growths combined surface and interstitial irradiation
was employed. Three small growths were removed surgically, with postoperative
irradiation in two cases.

Six case histories are appended and pictures of patients before and after treatment
are included.

Radiotherapy in Cancer of the Eyelid, E. Ebehoj. Om radiologisk behandling af

The ideal of radiotherapy in cancer of the eyelid is to give adequate dosage to the
cancer cells to ensure their death, as little as possible to the surrounding tissues, and
none to the eye itself. Forty cases are reported. In 13 of them radium application on a
mould was used, with unsatisfactory results and a large number of complications, es-
pecially cataract formation. Radium implantation, employed in 14 cases, gave much
better results. In the remaining cases, more recently treated, radiotherapy with soft
roentgen rays, at 12 to 25 kilovolts, has been used. The immediate outcome has been
excellent, and no recurrences or complications have yet appeared. Only a year has
elapsed, however, since treatment. Sixteen photographs are included.

Edward Herbert, Jr.

Large Angioma of the Upper Lip Treated by Intratumoral Injections of Quinine Salts
with Subsequent Surgical Removal, E. Sorrel. Volumineux angiom de la lèvre
supérieure traité par injections intra-tumorales de sels de quinine et extirpation

A boy eight years of age had a large angioma of the upper lip which deformed the
nose but did not involve the skin or buccal mucous membrane. A solution of 25 gm.
each of quinine chlorhydrate and antipyrine in 100 c.c. of water was injected into the
center of the tumor. The amount of the first injection was 0.25 c.c. After two days a
second was given, of 0.5 c.c. One week later 0.75 c.c. was given and then 1.0 c.c. every
three days until a total of fifteen injections had been given. After three weeks the tumor became smaller and more firm, and two months after the beginning of the treatment it was reduced to a hard fibrous nodule. This was shelled out surgically through an incision on the inner surface of the lip which left no scar and gave a perfect result. This method has been used successfully in several cases by Sorrel, and he believes that it should be employed more widely. Four drawings are included.

EDWARD HERBERT, JR.

THE BREAST


The author seeks to arrive at an accurate guide to prognosis in mammary carcinoma by taking into consideration both the clinical and histologic features. His clinical classification, based on the extent of the growth, includes 11 primary groups with a 12th for cases occurring during pregnancy or lactation. His histologic classification is that of Haagensen (Am. J. Cancer 19: 285, 1933). On this basis he has studied 70 cases, which were admitted for treatment from one month to four years after the onset of symptoms. At least four years had elapsed since the institution of treatment in every instance.

The cases are grouped first clinically and then histologically. Thus the 25 cases in the first clinical group (early non-adherent tumor without metastasis) are divided as follows:

<table>
<thead>
<tr>
<th>Total</th>
<th>Well</th>
<th>Dead</th>
<th>Unknown</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grade 1</td>
<td>11</td>
<td>7</td>
<td>1</td>
</tr>
<tr>
<td>Grade 2</td>
<td>6</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Grade 3</td>
<td>5</td>
<td>4</td>
<td>1</td>
</tr>
<tr>
<td>Unknown</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Totals</td>
<td>25</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>Per cent</td>
<td>40%</td>
<td>40%</td>
<td>20%</td>
</tr>
</tbody>
</table>

The five other definitely operable groups are similarly analyzed. The conclusion reached is that the most important prognostic factors are duration of the disease before the institution of treatment and its extent. Histologic classification seems to be of less significance than clinical study but is of some value in prognosis.

No attempt was made to determine the value of any method of treatment. Most of the operable cases in the series were treated by radical mastectomy, sometimes supplemented by irradiation.


Five cases are reported in which there were axillary recurrences of breast carcinoma following mastectomy. Though these were cases which ordinarily would be considered hopeless, a complete resection of the upper extremity, clavicle, and scapula was performed. Two patients died from shock, one died with lung metastases after six months, and two were symptom-free four years and eighteen months respectively after operation. The technic is briefly described.

EDWARD HERBERT, JR.


A woman of thirty had hypercalcemia and numerous bone lesions demonstrable roentgenographically. A biopsy showed metastatic adenocarcinoma and at autopsy the primary tumor was found in the breast. There were metastatic tumors in the peri-aortic lymph nodes and the liver, and deposits of calcium in the alveolar septa of the
lungs, the media of the pulmonary veins, the submucosa of the bronchioles, and the left auricle of the heart. In the kidneys, calcific casts were present in the tubules, and calcium granules studded the glomerular tufts. A photomicrograph is included and there are a number of references.

THE ORAL CAVITY AND UPPER RESPIRATORY TRACT

Influence of Blood Dyscrasias on the Development of Hyperplastic Tumors, Especially Those of the Gums (Epulis) and of the Maxillae (Localized Osteitis fibrosa and Giant-cell Tumors, M. DECHAUME. Influence de la dyscrasie sanguine sur le développement des tumeurs hyperplasiques en général et en particulier des gencives (épulis) et des maxillaires (ostéites fibreuses localisées, tumeurs à myéloplaxes), Sang 11: 211–215, 1937.

Dechaume believes that the hyperplastic tumors referred to in the title are due to a primary blood dyscrasia, such as anemia and increased bleeding and clotting time, and that they represent an inflammatory attempt at regeneration in the presence of these abnormal blood findings. No new material is included in the paper and there are no illustrations. EDWARD HERBERT, JR.


At the Radiumhemmet, Stockholm, the general plan of treatment of malignant tumors of the oral cavity is as follows:

Stage I (without clinical signs of lymph node metastasis): Teleradium therapy to the primary tumor and lymph node region simultaneously. The patient is then followed and if metastases appear, a complete dissection of the lymph node area is done. If metastases do not develop, the patient later receives a series of teleradium treatments in small doses.

Stage II (with node metastases well defined, movable, and operable): Teleradium treatment as for Stage I. If the clinical metastases disappear, the patient is followed carefully and a few series of teleradium treatments are given, with small doses. If the metastases do not disappear, they are dissected out en bloc.

Stage III (with metastases showing fixation or infiltration of adjacent tissues or bilateral metastases): Teleradium alone.

The attempt is made to attain on the tumor surface and the surrounding mucous membrane an epithelitis and in the skin an epidermitis. By suitably adjusted protraction and fractionation the reactions in the uninvolved tissues are kept relatively mild. Several fields of entry are used and the usual dosage is 100 to 150 gram hours, with 5 mm. lead filter, 6 cm. distance, and a daily dosage of 6 to 7.5 gram hours for about three weeks. Cases are recorded illustrating the technic and calculation of dosage.

In the period 1916–30 there were treated 457 malignant tumors of the oral cavity with 114 five-year cures, or 25 per cent. In spite of improved methods of treatment, the five-year cure rate for cases of this group treated in 1927–28 and 1929–30 showed no improvement over those treated in the earlier years (1916–21).

Malignant epithelial tonsillar tumors include the radioresistant cornifying squamous-cell tumors and the very sensitive lympho-epitheliomas. The former, as a rule, are treated like tumors of the oral cavity and the latter by small doses of roentgen rays. Among 39 cases in these two groups there have been 41 per cent of five-year cures. There were also treated 49 cases of sarcoma of the tonsils with 35 per cent of the patients symptom-free after five years. The primary results in this latter group are excellent, but peripheral metastases develop in a number of cases.

One hundred and four cases of cancer of the hypopharynx were treated in the period 1929–34. Forty-five cases received roentgen radiation only, 34 both roentgen and teleradium therapy, and 25 teleradium only. A two-year healing of 12 per cent was obtained in the entire group.

A case report illustrated by a photograph and roentgenograms. The tumor was resistant to irradiation and electrolysis was impracticable because of the proximity of major arterial branches. It was successfully removed by a transantral approach. References are included.


Cushing in 1927 (Surg. Gynec. & Obst. 44: 721, 1927) reported 4 cases of osteoma of the fronto-ethmoidal region in which operation was done by means of an osteoplastic flap allowing exposure from above. Two of the patients died of meningitis.

Since most osteomas of the paranasal sinuses are associated with a sinusitis, the author regards this method as particularly hazardous. He suggests a fronto-ethmoidal approach as permitting both removal of the tumor and adequate handling of infection. If, in the course of operation, it becomes evident that there is danger of tearing the dura, operation can be stopped after thorough drainage has been established and after the sinusitis has been cared for; the tumor can then be removed at some future time by the method used by Cushing.

Two cases are recorded: an osteoma of the ethmoid region and an osteoma of the mastoid. Photographs of the gross specimens and roentgenograms are included.


A twenty-six-year-old man gave a history of convulsive attacks and headaches, the former occurring over a period of two months and the latter of more than a year's duration. He complained also of a noise in his head, "like water running," and a faint splashing sound could be heard when he nodded quickly. Roentgen examination six weeks before admission had revealed a large osteoma of the left frontal sinus. Further roentgen study showed air in the lateral ventricles with the head in the lateral position but when the head was rotated so that the forehead was up, the air was shown to have left the ventricles and to have collected outside the left frontal lobe and just above the osteoma.

At operation, in addition to the osteoma there was found a mucocele extending into the anterior horn of the left lateral ventricle. Removal was followed by an uneventful recovery and complete relief of symptoms. Illustrations are included.


A man fifty-three years of age with a very large basal-cell epithelioma of the right tonsil was treated by roentgen irradiation to the neck and perorally to the tonsil. The tumor disappeared and the patient was well six months later. There are no illustrations. Edward Herbert, Jr.


While the results of irradiation in laryngeal cancer prior to the year 1930 were generally so unsatisfactory as to contraindicate its employment even in inoperable cases, the more recent improvements in technic have led the authors to revise their views so that they now believe it to be justified not only in cases which are inoperable because of
the extent or location of the disease but also in certain patients otherwise unsuitable for operation.

They report a series of 17 patients in which the cancer itself was deemed inoperable but in which 4 three-year cures were obtained by a modified Coutard technic.

The authors then seek to draw the line between the various types of operation and irradiation. Endoscopic excision they limit to small extremely early tumors located centrally on the tip of the epiglottis. Growths originating or extending below the margin of the epiglottis are of questionable operability, and for these irradiation is the first choice. In cases where the choice lies between laryngofissure and irradiation, the authors advise the latter for patients whose life expectancy is seriously shortened by such organic conditions as diabetes, pulmonary tuberculosis, or cardiovascular disease—not because of the operative risk but because of the probability that the patient will live out his short expectancy without recurrence after irradiative arrest. Since laryngectomy and lateral pharyngotomy are accompanied by an operative risk this must be taken into consideration in the choice between these procedures and irradiation, as must also the mutilating effect of the operation. The authors include cancers of the posterior wall of the larynx among the extrinsic cancers, for which irradiation is the procedure of choice.

So far as degree of malignancy is concerned the authors summarize their present conclusions as follows:

"(a) We deem laryngofissure advisable for every small early growth anywhere in the intrinsic area in a patient free from general organic disease regardless of the degree of malignant aggressiveness.

"(b) For an advanced but still intrinsic growth of grade 1 or 2 in a patient free from other organic disease we would advise laryngectomy, but we would deem irradiation preferable for cancer of grade 3 or 4.

"(c) For intrinsic growths with glandular metastases we deem irradiation preferable regardless of grading.

"(d) In a general way it may be said that extrinsic growths are less amenable to operation and more amenable to irradiation as compared with intrinsic lesions. We are inclined at present to regard tumors of grade 4 as more sensitive but yielding results less permanent as compared with tumors of grade 1. Grades 2 and 3 are relatively similar but less sharply contrasted."

In discussing the operative indications for tumors of the anterior commissure the authors advocate for small growths the anterior commissure operation described by Jackson in 1922 (Ann. d. mal. de l'oreille, du larynx 41: 1221, 1922). When the growth infiltrates the subglottic region any operation by the laryngofissure route is contraindicated.

**Tomography or Planigraphy in Laryngeal Cancer, G. Canuyt and Gunsett.** Le méthode des coupes radiographiques; tomographie ou planigraphie appliquée au cancer du larynx, Presse méd. 45: 1559–1561, 1937.

The authors again outline the advantages of tomography for the diagnosis of laryngeal carcinoma and for determining the effect of treatment (See Abst. in Am. J. Cancer 33: 595, 1938). A photograph, eleven roentgenograms, and several references are included.

Edward Herbert, Jr.


A man sixty-eight years of age with a squamous-cell carcinoma of the larynx was treated by simple excision followed by thyrotomy and resection of the vocal cord. Following operation he was given prolonged oral treatment with an extract of the tumor. He was symptom-free five years later, when he died of coronary thrombosis. There are no illustrations.

Edward Herbert, Jr.
**ABSTRACTS**

**THE THYROID GLAND**


A case of teratoma of the thyroid in a stillborn infant is recorded. A wide variety of tissues was found in the tumor and there were cystic areas containing cuboidal and columnar epithelium, squamous epithelium with immature hair follicles, and papillary and adenomatous structures. There were evidences also of abortive attempts at organ formation. A picture of the child is reproduced but there is no photomicrograph of the tumor. Reference is made to the review of Pusch and Nelson (Am. J. Cancer 23: 791, 1935), which includes a full bibliography.


Among 943 cases of goiter the author found 88 in which the enlargement consisted of a single localized nodule. He believes that both the clinical features and microscopic findings indicate strongly that these solitary nodules are true benign neoplasms arising from adult thyroid tissue in the same way that a fibro-adenoma arises in the breast. They vary considerably in their degree of differentiation, and range from a very cellular tumor composed of undifferentiated cells up to tumors at the other end of the scale which have the characters of the adult thyroid gland. They show a general tendency to develop into the adult type of thyroid tissue as they grow, and are prone to early degeneration leading to the formation of cysts.

Drawings in color and photomicrographs are included and references are appended.

**INTRATHORACIC TUMORS**


Seventeen cases are reported of primary carcinoma of the lung, observed over a period of fifteen years. An increase in frequency was observed in the last five years. The frequency of the various clinical symptoms is given and the general course of the disease is discussed. Five patients received radiotherapy, with subjective improvement in a single instance. None of the cases was unusual. Two roentgenograms are included.


A study of the incidence of primary bronchiogenic carcinoma in Veterans Administration hospitals has shown a steady increase from 1931 to 1937. The percentage relation of primary bronchiogenic carcinomas to all autopsies varied from 2.4 per cent in 1932 to 5.3 per cent in 1937, an increase of 121 per cent, while the percentage relation of primary bronchiogenic carcinomas to all carcinomas varied from 13.8 per cent in 1932 to 23.4 per cent in 1937, an increase of 70 per cent. That the increase in bronchiogenic carcinoma is absolute and not solely dependent on an increase of all carcinomas is shown graphically. There is, however, a relative increase as well, due to the improved facilities for and greater interest in the diagnosis and treatment of the disease in the Veterans Administration and to the fact that the veterans group is now attaining the so-called cancer age.

The factors which may be responsible for the absolute increase are the large percentage of preceding diseases of the respiratory tract and the fact that a comparatively large number of persons in this group were in occupations which were accompanied by exposure to irritations of the respiratory tract and traumatization of various kinds.


The author attempts to isolate as a pathological entity a type of carcinoma of the lung which is associated with marked sclerotic involvement of parenchyma and pleura. One case report is given. The patient, aged thirty-four, entered the hospital com-
plaining of pain in the right chest of two months' duration. Eighteen months before admission he had recovered from a right bronchopneumonia. A supraclavicular swelling had been present for several months, as well as marked frontal headache, fever, and productive cough. X-rays revealed massive involvement of the right upper lobe and infiltration of the lower lobe; the diaphragm was elevated and the mediastinum was pulled to the right. There was evidence of progressive superior vena cava compression, with production of edema of the upper extremities and distention of the neck veins, as well as of the portal and systemic collaterals. Within two months roentgen examination showed complete opacity of the right chest. The supraclavicular nodes, however, disappeared. Signs of progressive tracheal stenosis developed within a year. Death occurred twenty-two months after admission.

Autopsy revealed cancer of the right upper lobe of an intermediate cell type with adenocarcinomatous features and a marked sclerotic reaction. The pleura was 7 mm. thick and fused to the chest wall. The remaining parenchyma showed diffuse caseation and bronchiectasis. The superior vena cava was encased in cancer and practically occluded. One small metastasis was present in the right suprarenal capsule.

Although the author states that this type of cancer follows no particular clinical course, he points out various noteworthy features in the case recorded: a rather long course with practically no metastases, even to the hilar nodes, a predominantly mediastinal symptomatology from the onset, and death from mechanical factors. Thirteen references and eight illustrations are included.

Apical Lung Tumors. Further Observations with Report of Seven Additional Cases,

This paper is based on 15 cases of so-called superior pulmonary sulcus tumors. Eight of these were previously recorded (Texas State J. Med. 33: 293, 1937) and the histories of 7 are presented here for the first time. All the patients were men, and in all pain in the shoulder and arm of the affected side was the first symptom. Horner's syndrome was present in 13 cases. In one instance the lung tumor was secondary to an osteogenic sarcoma of the left femur. In all the other cases the growth was believed to arise in the terminal bronchioles and in 13 instances this origin was confirmed histologically. The prognosis in tumors of this type is poor. Surgery is contraindicated by their location and mode of extension, and irradiation has little effect. Twelve of the author's series were dead after an average duration of thirteen months. The longest period of survival was thirty-two months from the onset of symptoms.

Roentgenograms and a single photomicrograph are reproduced. References are appended.

Morphological Resemblance of Pulmonary Adenomatosis (Jaagsiekte) in Sheep and Certain Cases of Cancer of the Lung in Man,

Bonne records the case of a Chinese patient of thirty years with diffuse carcinomatous changes in the lungs, closely resembling certain pulmonary diseases in animals, notably Jaagsiekte of sheep, which is known to be of infectious character. There is practically no invasive growth and metastases are absent. Death is due to replacement of the lung tissue by the tumor cells. The possibility of a virus origin is suggested. Photomicrographs and references are included.

Metastasizing Fibromyoma of the Pleura. Report of Two Cases,

Two cases are reported of fibromyoma arising from the parietal pleura. Both patients were women. The tumor in each instance was composed of smooth muscle fibers and connective tissue. One showed much calcification and focal ossification and caused the patient's death by compression of the inferior vena cava. The other, which was an incidental autopsy finding following death from cancer of the uterus, contained xanthomatous areas. Histologically neither growth showed any evidence of malignancy, but in both cases there were neoplasms of identical structure in the regional
lymph nodes believed to be metastatic. The two cases thus support the contention that certain tumors which are histologically benign may occasionally produce metastases to distant organs. In this respect the pleural fibromyomas may behave like the myomas of the uterus or stomach (see Melnick: Am. J. Cancer 16: 890, 1932).

The microscopic findings are given fully and photomicrographs are included. There is a bibliography.


This is an account of a tracheal tumor which was diagnosed roentgenographically. The pathologic diagnosis was indefinite but the tumor was provisionally labelled a rhabdomyoma. The author points out that while the anteroposterior view is the best for diagnosis of compression of the trachea by an extratracheal lesion, a lateral view is more likely to reveal an intratracheal growth. Such tumors generally extend from the posterior wall and the tumor is best apparent in profile against the air in the trachea. Roentgenograms are included.

Three Cases of Intrathoracic Neurinoma, L. P. DYGGE. Tre fall av intrathorakalt neurinom, Finska läk. sällsk. handl. 79: 133–140, 1936.

Three examples are reported of intrathoracic tumors in women from the ages of forty-four to sixty-two. On the basis of the slow growth, paucity of symptoms, and the sharply defined round x-ray shadow, a diagnosis of neurinoma was made, but in no instance was it confirmed histologically. Six roentgenograms are included.


At autopsy on a woman of thirty-eight who had been under treatment for syphilitic meningo-encephalitis there was found a polypoid tumor attached to the wall of the left auricle by a wide stalk. It was composed of a homogeneous reddish gray tissue, and similar tissue was present in the right pulmonary veins and portions of the lung near the hilus. Microscopic examination of the main tumor showed closely packed spindle cells, obviously of myogenic origin and relatively benign, but in the stalk and the pulmonary extensions sarcomatous changes were observed. Here the cells were of irregular size and shape, with large hyperchromatic nuclei, large nucleoli, and scanty cytoplasm, in which no cross-striations were present. Many of these cells contained mitotic figures. The author could find in the literature no other case of primary benign rhabdomyoma with malignant change to rhabdomyosarcoma. Another unique finding was the presence of a large nerve trunk in the stalk of the tumor and of nerve fibers throughout the tumor, many of which could be traced directly to endings in the nuclei of the tumor cells. Small nodules were found in the kidneys resembling the main cardiac tumor.

Photomicrographs and references are included.

THE DIAPHRAGM


A case of malignant tumor of the diaphragm (rhabdomyosarcoma) in a fourteen-year-old Negro boy is presented, with autopsy findings. The tumor appeared to metastasize entirely by the lymphatic route. Photomicrographs and four references are included.

THE ABDOMINAL WALL


Lazarus reports a tumor of the abdominal wall in a woman of forty-two who had been operated on thirteen years previously for an ovarian cyst believed to be benign
(though no record of the histologic findings was available). The tumor extended from the symphysis pubis up to the level of the umbilicus, involving both sheaths and body of the right rectus muscle. Exploration failed to reveal any involvement of the pelvic or abdominal viscera. A portion of the tumor was removed for examination. It showed carcinomatous areas and large cells suggestive of arrhenoblastoma. Roentgen therapy was given and the tumor diminished in size, but a hard node appeared in the groin. This was responding to irradiation at the time of the report.

The author reviews the literature on abdominal wall tumors. He found fourteen references collected by Dvorak (Surg. Gynec. & Obst. 50: 907, 1930) and Polano (Ztschr. f. Geburtsh. u. Gynäk. 56: 416, 1905) to abdominal wall carcinoma following removal of a supposedly benign ovarian cyst without fistulous communication with or direct extension from an abdominal organ harboring carcinoma. In one of these cases a carcinoma of the stomach was found post mortem. In only 4 others was autopsy obtained, and in none of these was an intra-abdominal tumor discovered.

Photomicrographs and a bibliography are included.

**THE DIGESTIVE TRACT**


Of 110 patients with esophageal carcinoma 9 were women and 101 men; 95 per cent were habitual users of alcohol, drinking from two to twenty glasses of spirits a day. The authors believe that alcohol is an important etiologic agent in the production of these tumors. There are no illustrations.


The authors by rather arbitrary reasoning conclude that esophageal carcinoma is due to the action of folliculin, which after the decrease in activity of the antagonistic male sex glands, exerts a sensitizing carcinogenic influence on the esophagus. They therefore supplement radiotherapy in these cases by both oral and parenteral treatment with lutein, another antagonist of folliculin. They claim excellent results but do not give any figures.


Wyatt reviews the literature on carcinoid tumors, presenting in tabular form those cases in which metastases have been found. These include 36 cases primary in the small intestine (22.5 per cent of 159 recorded cases of carcinoids of the small intestine), 6 primary in the appendix, 1 in the stomach, and 2 in the large bowel. Three new cases are recorded—two of appendiceal carcinoids and one of a multicentric carcinoid tumor of the cecum with metastases in the liver. This last case is the ninth of the large bowel to be reported and the third in that location to show metastases.

The author concludes that all “carcinoids” are to be considered as slow-growing malignant tumors. The prognosis after surgical intervention is good even when the regional nodes are involved. Photomicrographs and a bibliography are included.

**Occult Bleeding as an Indication for Early Exploratory Laparotomy, T. Jersild.** Oc- cult blodning som indikation for tidlig explorativ laparotomi, Hospitalstid. 79: 1053–1064, 1936.

In eight cases occult blood was present in the stool but x-ray examination, test meals, blood count, proctoscopy, and other methods of examination failed to lead to a diagnosis. Exploratory laparotomy was performed in these cases and there were found 3 carcinomas of the stomach, 1 of the jejunum, 3 of the colon, and a diffuse
peritoneal carcinoma, the primary site of which was not determined. The author regards continuous or intermittent bleeding in the intestinal tract, in the absence of any obvious cause, a sufficient reason for an exploratory laparotomy. There are no illustrations.

EDWARD HERBERT, JR.


A study is made of anemia in 75 proved cases of gastric carcinoma, cases with gross hemorrhage being excluded. The average hemoglobin content was 72.8 per cent. Thirty-one of the patients had no anemia, the criteria being below 90 per cent for men, and 80 per cent for women. The anemia had no relation to sex, age, duration of illness, presence or absence of hydrochloric acid, or the amount of occult blood in the stool.

Two cases are reported in detail which represent the two main types of anemia in these cases. One was a microcytic hypochromic anemia which was due to under-nourishment and responded readily to iron administration. The other was a hyperchromic macrocytic anemia and was greatly improved by liver therapy. In this case the condition was probably due to a lack of the intrinsic factor.

Anemia in cases of gastric cancer should not be regarded as hopeless, as good results can often be obtained by intensive therapy with iron or liver, or both, the type of treatment being indicated by the blood picture.

EDWARD HERBERT, JR.


Of 93 operations for gastric cancer, 30 were exploratory laparotomies, 13 gastro-enterostomies, and 50 gastrectomies, of which 4 were total and 46 partial. Twenty of the cases in which gastrectomy was done were easily operable. One patient of this group died after operation, 2 died within a year, and the other 17 were alive from three to eight years later. Among the other 30 cases, which were advanced, there were 10 deaths following operation; one patient was well after three years, and the remainder died after an average survival of sixteen months. There are no illustrations.

EDWARD HERBERT, JR.


A forty-five-year-old man had indefinite symptoms referable to the digestive tract and blood in the stools. Roentgen examination showed a well circumscribed tumor in the wall of the stomach near the lesser curvature, with niche formation. Resection was done at operation and the tumor proved to be a neurinoma without evidence of malignancy. The author attributes the niche formation to necrosis with loss of the central area of the tumor into the lumen of the stomach. A case recorded by Nordlander (Upsala läk. förhandl. 38: 1, 1932. Abst. in Am. J. Cancer 19: 933, 1933) showed a similar roentgen picture.


A boy twelve years of age developed an obstructive jaundice and a large inoperable tumor was found in the abdomen. Biopsy was done and death occurred shortly afterwards. Autopsy revealed an enormous tumor arising from the duodenum and invading the pancreas and adjacent tissues. Histologically it was a lymphocytoma. There are no illustrations.

EDWARD HERBERT, JR.


Report of an adenocarcinoma of the jejunum clinically suggestive of gastric carcinoma. A photomicrograph is included and several references are appended.

This paper is concerned chiefly with the technic of operation for rectal carcinoma, which is presented in great detail, with numerous illustrations. The author has found that preoperative "defunctioning" of the rectum and sigmoid adds a considerable element of safety to operative procedures in this region. He describes an exaggerated lithotomy position with a sacral sling which makes it possible to carry out simultaneously the perineal and abdominal stages of the combined perineo-abdominal procedure, considerably shortening the time of radical resection and thus lessening shock. In this position, with the defunctioned rectum closed at its lower end with a special box clamp, dissection of the rectum can be carried out from the perineum toward the abdomen, the dissected segment with its vessels intact being delivered abdominally—a method which offers numerous advantages. Important among these is the fact that it enables the surgeon, when the whole of the diseased area is in view and before the vessels are divided, to judge whether a conservative operation can be carried out; while, as a corollary to this advantage, it permits the more frequent performance of the conservative operation, and, furthermore, permits its performance on a sound basis.

While the author does not wish his remarks to be taken as a plea for conservative surgery, he does believe that this may be employed more frequently than heretofore and with a more consistent success where it is pathologically and anatomically possible.


The technic of combined abdominoperineal resection of the rectum in a single stage, as originated by Miles, is described and illustrated by drawings. Rankin employed this procedure in 75 of 139 private patients with cancer of the rectum and rectosigmoid, in 106 of whom resection was possible. Five of the 75 patients died, an operative mortality of 6.6 per cent. The late results are not given. Drawings clearly illustrate the operative technic.


In 318, or 77.7 per cent, of a series of 409 cases of malignant disease of the large bowel in which there was metastasis to one or more organs, as evidenced by biopsy, celiotomy, roentgenograms or necropsy, the primary site was in the anus, rectum, or sigmoid colon. In 239 cases the primary lesion was in the rectum, in 75 in the sigmoid, and in 4 in the anus. The average period between the onset of symptoms and the observation of extension or regional metastasis was eleven months and two weeks, whereas the average period between the onset of symptoms and observation of distant metastases (lungs, pancreas, vertebrae, spleen, renal capsule, and heart) was nineteen months. Assuming a latent interval of six months, the authors thus obtain an average period of seventeen months and two weeks for the growth before the appearance of regional metastases, and twenty-five months before the discovery of distant metastases. More than half the cases in the series (165 or 51.9 per cent) were of grade II. Metastasis was most prevalent in the liver (40 per cent), followed in order by the regional nodes (31 per cent), the peritoneum (19 per cent), lungs (15 per cent), and bladder (9 per cent). Bony metastases most frequently involved the sacrum (7 per cent of the entire series), with the coccyx (6 per cent), pelvis (2 per cent), and vertebrae (2 per cent) following.

The authors quote extensively from the literature and include a bibliography.


In a series of 951 proctologic cases in which histologic studies were made, the percentage of clinically unrecognized cancers was 1.9 per cent. These constituted about a third of all the malignant tumors in the series—18 out of 52.

A considerable variety of tumors may occur in the anal canal. In the upper zone, which is lined with typical intestinal epithelium with columnar cells and Lieberkühn glands, glandular neoplasms are of frequent occurrence. The authors' series included
15 adenomas and 35 adenocarcinomas. In the intermediate zone, lying between the recto-anal bone and the anocutaneous or dentate line, tumors are relatively rare. The authors found 4 benign papillary tumors, a melanoma, and 2 adenocarcinomas in this region. In the lower, cutaneous zone they found 4 squamous-cell carcinomas, a basal-cell carcinoma, and a melanoma. In addition to these tumors there were in various parts of the canal 12 benign and 6 malignant tumors of connective-tissue origin. Six of the authors' cases arose in previously existing anal lesions.

Four cases histories are presented. One photomicrograph and 3 photographs are included and there is a bibliography.

**RETROPERITONEAL TUMORS**

**Retroperitoneal Teratoma, P. M. Mecray, Jr., and W. D. Frazier.** Arch. Surg. **35:** 358–367, 1937.

Mecray and Frazier attribute the origin of teratoma to a misplaced blastomere and distinguish two types: (1) the true teratoma, containing organized tissues and (2) and the teratoid tumor, containing no formed organs even though it may embody representatives of all the embryonal elements. A retroperitoneal tumor of the latter type is described.

The patient was a man of twenty-nine with a mass in the right upper abdominal quadrant above and posterior to the transverse colon, which it displaced downward. At operation the tumor, which proved to be encapsulated, was shelled out and the patient made a prompt recovery. Postoperative roentgen therapy was given. Ten months later orchidectomy was required for a tumor of the right testicle, which was found to contain typical teratomatous tissue, and ten days after this two abdominal masses, apparently extensions of the original tumor, were discovered. As these were believed to be inoperable, roentgen therapy was given. The tumors decreased in size and pain was relieved, but the outcome is not stated. Sections of the primary tumor from the abdomen showed it to be made up of numerous cysts, some containing sebaceous material, some a serous fluid, and some both. Representatives of all the primary embryonal layers were seen but no formed organs were present and the growth is therefore a teratoid tumor rather than a true teratoma. [Obviously in view of the studies of Prym (Deutsche med. Wchnschr. **51:** 1149, 1925) and others the possibility of the abdominal tumor being a metastasis from the testicle must be considered.]

In the literature the authors found records of 35 retroperitoneal teratomatous tumors for which data were available. Of these, nearly two thirds were true teratomas. The patients are seldom over thirty and 40 percent of the recorded cases occurred in the first decade. The chief complaints are the presence of an abdominal mass and pain. In 23 cases surgical removal was attempted but only 7 patients survived the operation and of these 1, from whom only a biopsy specimen was taken, is known to have died eight months later. There is no record of recurrence or further symptoms in the other cases.

The case reported is illustrated by photographs of the tumor and photomicrographs. A bibliography is appended.

**A Case of Retroperitoneal Cyst, with a Clinical Study of the Subject, Mahmoud Hafezi.** Brit. J. Surg. **25:** 267–276, 1937.

This is a report of a retroperitoneal cyst in a woman of thirty-one, discovered at exploratory laparotomy and removed successfully. The cyst was attached to the spleen and appeared to have arisen between that organ and the stomach in the gastrolienal ligament. In its inner wall were two solid areas. Histologically several types of tissue were distinguished. There were areas containing large polygonal cells with abundant clear cytoplasm resembling hypernephroma but interpreted as macrophages; other areas contained numerous spindle cells, giant cells, and transitional forms suggestive of malignancy, but the greater part of the tumor appeared to be made up of intestinal glandular epithelium. It was regarded as a congenital cyst of enteric origin.

This is a report of a retroperitoneal dermoid cyst in a woman of forty-six, diagnosed roentgenographically. It was removed surgically and found to contain fat and masses of détritus. Roentgenograms are reproduced showing the layering of the cyst contents into an upper thinner and lower thicker layer.

The case report is followed by a general discussion of retroperitoneal cysts and their treatment. Photomicrographs are included and there is a short bibliography.


This is a report of a retroperitoneal dermoid cyst in a woman of forty-six, diagnosed roentgenographically. It was removed surgically and found to contain fat and masses of détritus. Roentgenograms are reproduced showing the layering of the cyst contents into an upper thinner and lower thicker layer.

THE BILIARY TRACT


The authors state that among the 386 cases of hemochromatosis in the literature there have been 28 with an associated carcinoma of the liver [though in one of these cases the growth was diagnosed as simple adenoma]. Another case in which there were both hemochromatosis and a neoplasm is recorded here. The tumor was a malignant hepatoma with metastases in the lymph nodes, parietal pleura, and lung. In both the primary growth and the involved lymph nodes there was moderate pigmentation of some of the malignant cells. The tumor cells in most of the recorded cases have been pigment-free. Photomicrographs and references are included.


A woman of forty-four years, who was believed to have tuberculous peritonitis, was found at autopsy to have a primary liver-cell carcinoma with metastases throughout the spleen. No other metastases were found, but tumor cells were seen free in the sinuses of portal lymph nodes, suggesting a lymphatic mode of spread. Photomicrographs and references are included.


An eight-month-old girl had a hard abdominal mass which was found on exploratory laparotomy to occupy the right lobe of the liver. The child died at the age of fourteen months and autopsy showed hepatic carcinoma. The liver also contained, at a distance from the tumor, large and small foam cells; similar cells replaced the splenic pulp and were found in sections of the small intestine. There was no evidence to suggest any causal connection between the two disease processes. Photomicrographs and references are included.


An instance of primary endothelioma of the spleen with metastases limited to the regional lymph nodes is reported in a woman of sixty-five. She suffered from severe secondary anemia, progressive cachexia and, late in the course of the disease, from pain in the upper part of the abdomen. Death occurred following peritonitis as a result of necrosis and perforation of the colon adjacent to the tumor. Photomicrographs and references are included.


This is a report of a primary reticulosarcoma of the spleen in a boy of nineteen, with necropsy findings. Adopting Oberling’s classification (Bull. de l’Assoc. franç. p. l’étude du cancer 17: 292, 1928), the author describes the tumor as a reticulolymphosarcoma. Photographs, a photomicrograph, and references are included.
THE SUPRARENAL GLANDS


This is a general discussion based on previous work and reports, maintaining that arteriosclerosis is a disease and not a natural accompaniment of old age, and that it is associated with adenomatous hypertrophy of the cortex of the adrenal. There are no illustrations. Edward Herbert, Jr.

Hypertension with a Suprarenal Tumor, Lafargue, Broustet, and Demiollis. Hypertension par tumeur surrénale, Gaz. hebdom. de sc. méd. de Bordeaux 57: 200, 1936.

A boy sixteen years of age whose blood pressure had been 140/70 three months previously, suddenly became blind and his blood pressure was found to be 300/150. This persisted with only minor variations for a year, at the end of which time a tumor was felt in the left lumbar region. Radiotherapy was without effect and finally operation was performed. A large paraganglioma of the adrenal medulla was found, but could not be removed in its entirety. During the operation the pressure rose steadily until finally it was 280 systolic and 220 diastolic. Death was due to postoperative shock. Edward Herbert, Jr.


The author's patient was a woman of forty-eight who complained of severe epigastric pain. In the region of the gallbladder was a palpable mass but no connection between this and the gastro-intestinal tract could be demonstrated roentgenographically. An exploratory laparotomy revealed a large retroperitoneal tumor which was inoperable. The patient died seventeen days later. The chief autopsy finding was a retroperitoneal cyst, measuring 12 X 15 X 34 cm., in the walls of which were numerous dark brown granules which gave all the staining reactions of melanin. It was believed to have arisen from the adrenal medulla.

The authors discuss the various stains for brown pigment. They regard 5 per cent aqueous silver nitrate at 37° C. the best differential stain for melanin. Photomicrographs and references are included.

THE FEMALE GENITAL TRACT


Martzloff believes that the iodine test for carcinoma of the cervix and the use of the colposcope do not offer the great advantages over ordinary methods of careful inspection that enthusiasts have claimed for them. He concludes that for the present the recognition of cancer of the cervix uteri in its early stages still rests on painstaking visualization and inspection and microscopic examination of tissue from suspicious areas.


From 1914 to 1930 there were 76 patients with cancer of the uterine corpus referred to the Radiumhemmet, Stockholm, for postoperative irradiation. The results published here are based on 65 cases in which the diagnosis was verified histologically. Fifty-one of the patients, or 78.5 per cent, were alive without symptoms after five years. There were 11 recurrences, of which 9 occurred within six months and none after a year and a half. In 6 of the 8 cases with local recurrence radical operation had not been performed because of carcinomatous involvement of the parametria preventing removal of the cervix. Of the 57 cases in which the tumor was confined to the uterus, 47 had total and
10 subtotal hysterectomy. The results in the latter group were as favorable as in the former.

Of 36 patients observed for ten years or longer 22, or 61.1 per cent, were alive and symptom-free.


In ten years there were performed at the Mayo Clinic 523 abdominal myomectomies for uterine myomas; 409 of the patients were under forty years of age and 114 were older. In 55 per cent of the latter group the operation was incidental to some other surgical procedure.

In about half the cases the tumors were single (51.2 per cent). Small tumors (less than 4 cm. in diameter) were slightly in excess of larger ones, but in many of these the primary operation was undertaken for some other pelvic condition.

The position of the tumor is an important factor in myomectomy. As far as possible, the authors state, all myomas should be enucleated through the anterior surface of the uterus or through the anterior half of the broad ligament so as to minimize the risk of subsequent intestinal obstruction. Myomectomy during pregnancy is advocated only in exceptional instances. In this series 33 of the patients were pregnant. Excluding 7 cases of ectopic pregnancy and 4 in which cesarean section and myomectomy were performed at the same time, there remain 22 cases of intra-uterine pregnancy in which myomectomy was done. In three instances a very early pregnancy was not known to exist. Seven, or 31.8 per cent, of these patients had a miscarriage postoperatively. Fifteen, or 68.2 per cent, did not have a miscarriage. Eleven had normal births.

The recurrence of leiomyomas in this series was approximately 20 per cent, which is somewhat higher than that currently reported but is accounted for by the fact that 229 of the myomectomies were secondary procedures. It is of importance that 25 per cent of those less than forty years of age were known to have recurrences, as contrasted with 8.9 per cent more than forty years of age. Of the group of 111 who had recurrences, only 26 required subsequent surgical treatment.

Subsequent to myomectomy, 68 of the 409 patients who were less than forty years of age at the time that myomectomy was performed became pregnant. This represents 34.7 per cent of 196 patients for whom postoperative fertility could be accurately determined and among whom pregnancy could reasonably be expected.

References are included.


The incidence of fibroma in several large series of ovarian neoplasms is placed at about 2 per cent. Pugliatti found 7 cases in 3450 autopsies on women (Ann. di ostet. e ginec. 56: 469, 1934). Almost all were small tumors discovered incidentally; all were unilateral.

A case is reported here of a sixty-year-old woman who complained of acute lower abdominal pain associated with vomiting. For three months her abdomen had shown some increase in size and she had had slight tenesmus. A mass was felt filling the pelvis and extending nearly to the umbilicus. Operation revealed an ovarian tumor the size of a fetal head, incarcerated in the pouch of Douglas and twisted on its pedicle. It was a fibroma weighing 1350 gm.

Numerous theories are cited as to the origin of these neoplasms. The author believes that no single theory holds for all cases. Adolph Meltzer


A report of a case in a four-year-old Negro girl. The tumor was successfully removed after preliminary roentgen therapy. The author found no other record of ovarian ganglioneuroma in the literature. Photomicrographs are included.

This is a single case report amply described by the title. Recovery was uneventful after operation. There are no illustrations. Edward Herbert, Jr.


The author quotes various authorities to the effect that the lipid content of the blood is altered in cancer patients. He utilizes an observation made by Ascoli, that cold ether extracts unsaturated lipids from the serum of cancer patients with greater ease than from controls and describes in detail a technic for determining the “iodine number” on such serum extracts.

Four groups, totalling 40 patients, were tested: (I) 8 with benign tumors treated surgically; (II) 18 with malignant tumors (10 of the uterus and 8 of the breast) removed surgically; (III) 7 in the eighth or ninth month of pregnancy; (IV) 7 with malignant uterine tumors treated by radium or roentgen therapy. In group I the iodine number preoperatively ranged from 0.26 to 0.53; postoperatively from 0.20 to 0.52. The changes due to operation were inconstant, varying from +0.02 to −0.10. In group II the preoperative iodine number ranged from 0.40 to 1.80; postoperatively it varied from 0.15 to 0.67. One patient with a uterine tumor showed a gain of 0.05, while in the remaining 17 cases there were losses of from 0.10 to 1.26. In group III, the iodine numbers ranged from 0.68 to 1.64; following delivery they varied between 0.25 and 0.70, a loss of 0.15 to 0.94. In group IV, 3 of the 7 cases treated showed an increase in the iodine number, from 0.10 to 0.61. The patient with the greatest increase grew rapidly worse.

The significance of these interesting findings would be considerably enhanced if a larger series were reported, including more controls. A bibliography of thirty-eight papers is included. Adolph Meltzer

THE GENITO-URINARY TRACT


The recorded cases of so-called dermoid cyst of the kidney, 14 in number, are reviewed and tabulated. They fall into two groups of equal numbers. Those in the first group can be positively identified as dermoid on account of the presence of hair, squamous epithelial lining, etc.; in the other are those cases having many of the macroscopic attributes of the dermoid, but lacking complete proof as to their origin. The case reported by the author on a man of thirty-nine years belongs in the latter group.


The different methods of operation for tumors of the bladder are described and the technic of each is illustrated by drawings. The author regards any operation involving ureteral implantation as unjustified for use upon elderly and enfeebled subjects such as the majority of bladder tumor patients, and at best as a hazardous procedure with a highly uncertain outcome. He advocates a combination closed method as fulfilling the requirements of conservative practice in the great majority of cases. This calls for removal of the exuberant portion of growth by the resectoscope, followed by intravesical implantation of radon seeds, and in some cases external x-ray therapy. No cases are recorded. A bibliography is appended.

A report of a carcinoma arising about the mouth of a rectovesical fistula presumably established forty-eight years earlier when, as a child, the patient underwent an operation for stone in the bladder. A suprapubic cystostomy was performed but the patient died postoperatively.


A case of spindle-cell sarcoma of the bladder is reported in a girl of ten years. The tumor was removed with half an inch of healthy bladder wall all around it and the child was apparently well eleven months after admission to the hospital. The author, however, is not hopeful as to the ultimate prognosis, basing his judgment on the cases recorded in the literature. A photomicrograph of the tumor is included. References are appended.


The authors record a case of leiomyosarcoma of the bladder in a man of fifty-nine. A cystostomy was done but the tumor proved to be inoperable and death occurred a month later. No metastases were found at autopsy. Only 4 other authentic leiomyosarcomas of the bladder are said to have been recorded (Röder: Deutsch. med. Wchnschr. 30: 485, 1904; Hager and Hunt: J. Urol. 21: 129, 1929; Caylor and Walters: J. Urol. 24: 303, 1930; Krauskopf: Am. J. Obst. & Gynec. 24: 133, 1932). Other cases appearing in the literature are all open to some objection. [No reference is made to the case of Burlakof: Ukrain. Med. Arch. 1: 39, 1927.]

Photomicrographs are included, with high-power views showing large cells with myofibrillae. There is a bibliography.


A man sixty years of age with a large periurethral carcinoma of the bladder proved by biopsy was treated by cystotomy and implantation of radium into the tumor. Four and a half years later the cystoscopy findings were normal and the patient was symptom-free. Six months after this, five years after treatment, he had a sudden severe hematuria and died. Autopsy and careful histologic studies showed no recurrence, but revealed a new tumor, about 1 cm. in diameter, in a different part of the bladder. There are no illustrations.

THE NERVOUS SYSTEM


Cerebellar astrocytomas, seen for the most part in children, are solid or cystic, well circumscribed gliomas which can usually be readily and successfully enucleated. They are composed predominantly of fibrillary and protoplasmic astrocytes in variable proportion, in association with a very small percentage of other adult and embryonic cells of the spongioblastic series. They contain no ganglion cells or nerve fibers other than those engulfed as a result of the invasion of the cerebellum by the tumor, and no neuroblasts. They not infrequently invade the subarachnoid space and in such areas glial bridges may be found. Degenerative changes involving the cells, their processes and fibrillae, and the blood vessels are common. Various attempts have been made to classify these tumors but no one has improved upon the original classification of Bailey and Cushing, (A Classification of Tumors of the Glioma Group, J. B. Lippincott, Philadelphia, 1926) into fibrillary and protoplasmic astrocytomas. Photomicrographs and a bibliography are included.

A woman forty-five years of age was operated upon three times for a recurrent brain tumor. She died following the third operation. Sixteen other cases of cerebral tumor are briefly reported. Nine of the patients died as a result of operation, the other 7 within six months. There are no illustrations.

Edward Herbert, Jr.


This is a general discussion based largely on the work of Dandy and containing no new material. Eight roentgenograms are included.

Edward Herbert, Jr.


A nineteen-year-old laborer suddenly experienced serious loss of vision, especially on the left, and examination showed left anosmia as well. A month later light and color perception were entirely gone, papilledema was present, and there was beginning optic atrophy. Roentgen studies led to a diagnosis of meningioma of the olfactory groove though the clinical evidence was incomplete, primary atrophy of one of the optic nerves and mental symptoms being absent. A well encapsulated meningioma, 4 × 6 cm., was removed by a frontoparietal approach. It arose from the meninges overlying the left wing of the sphenoid. The report was made fifteen days after operation.

Three roentgenograms and a photograph of the tumor are included.

Adolph Meltzer


In 1929 Bailey recorded 2 cases of perivascular sarcoma of the brain, which he designated as perithelial sarcoma (Arch. Surg. 18: 1359, 1929). A similar case is recorded here. The patient was a fifty-year-old man with uncontrollable diabetes. His chief complaints were drowsiness, headaches, vomiting, and some weakness of the left arm and leg. The tumor, discovered at autopsy, occupied the central portion of the right hemisphere. Morphologically it was a reticulum-cell sarcoma such as is found most frequently in the lymph nodes. In sections stained with silver carbonate the tumor cells displayed the histologic characteristics of transitional forms of microglia cells. The author believes that the case furnishes further evidence of the histiocytic nature of the microglia.


The author reports the sudden death of a patient one half hour after drinking a quantity of water. Autopsy showed a chromophobe adenoma of the pituitary with extension in the right frontal lobe. Death apparently resulted from sudden increase in the intracranial pressure following the ingestion of water. This appears to be a danger where tumors exert pressure in the region of the third ventricle.

Seaton Sailer


A report of an intramedullary dermoid cyst in the lumbar region in a boy of three. In the cyst wall was a nodule to which caseous material and hair were loosely adherent. The cyst was evacuated and the nodule excised. The author believes that this represents a developmental defect in the cleavage of the surface and neural ectoderm similar in many respects to the developmental anomaly responsible for extramedullary
dermoid and epidermoid tumors elsewhere in the central nervous system and to the congenital dermal sinuses reported by Walker and Bucy (Brain 57: 401, 1934).

Roentgenograms, photomicrographs, and a drawing showing the location of the tumor in the spinal canal are included and there is a bibliography.


A child nine months of age who died of bronchopneumonia had a large neurofibroma of the flank, multiple pigmented nevi of the chest and extremities, and an enormous hairy pigmented nevus which covered the entire mid portion of the body from above the knees to the umbilicus, and even higher posteriorly. One photograph is included.


Two cases are recorded of Paget's disease of the bone, in both of which multiple bone sarcomas of spindle-cell type were found at autopsy. In neither case were any pulmonary or other visceral metastases present which would suggest that the numerous bone tumors were the result of dissemination through the blood stream. In both cases also there were present smaller tumors of apparently benign osteoclastomatous structure. Unlike the larger sarcomatous growths, which were periosteal in character, these smaller tumors were embedded in the bony corticalis. In both cases there were some changes in the thyroid and parathyroid glands but the significance of these is regarded as questionable.

Reviewing the literature, the authors find it to be generally accepted that Paget's disease predisposes the affected bones to the development of osteogenic sarcoma, though estimates as to the frequency of sarcomatous change vary widely. The incidence is higher in men than in women, which is to be expected in view of the preponderance of both Paget's disease and sarcoma in males. The average duration of the Paget's disease before the appearance of sarcoma is placed at about eight years. The sarcomatous changes are limited to those bones which are affected by Paget's disease. In 15 of 49 cases collected by the authors multiple tumors were present. Both the etiology of Paget's disease and the nature of the stimulus initiating malignant change are matters of speculation.

Roentgenograms and photomicrographs are reproduced. A bibliography is furnished.


A woman thirty-eight years of age had skeletal metastases from a mammary carcinoma, with diffuse involvement of all the bones except those of the hands and feet. She also had a hyperchromic, macrocytic anemia with megaloblasts and normoblasts, due probably to overactivity of certain bone marrow areas as a compensation for the destruction of other areas. Three roentgenograms are included.


Two cases are recorded in which sarcomatous changes occurred in diaphysial aclasia, a familial disease characterized by multiple exostoses believed to be due to an arrest of periosteal extension at the ends of the diaphysis (Keith: J. Anat. 54: 101, 1920). In the first patient, a woman of twenty-five with a tumor attached to the left pubic bone, a biopsy led to the diagnosis. Death occurred in spite of roentgen therapy but autopsy was not done. The second patient was a boy of eighteen years with a tumor attached.
to the femur. The diagnosis was made roentgenographically. X-ray therapy was given but the late result is not recorded. Seven cases from the literature are also reviewed.

These tumors are described as locally malignant cartilaginous growths. Wide excision or amputation is regarded as the treatment of choice. One patient was known to have lived eighteen years after amputation (Boyer: *Traité des maladies chirurgicales*, Paris, vol. III, 1814, p. 594).


This is a report of a giant-cell tumor of the lamina of the fourth cervical vertebra in a nine-year-old girl. A laminectomy was performed, followed by a single course of roentgen therapy, and the child was well and without roentgen evidence of recurrence a year later. Sections of the tumor showed giant cells in a stroma of round and spindle cells. References are given to eight other instances of involvement of the cervical spine by giant-cell tumor. Roentgenograms and a photomicrograph are reproduced.


This is a radiological report of multiple bone lesions in a man of forty-eight, who was admitted to the hospital in a state of cachexia with complete paralysis of the lower extremities. The outcome is not stated. The findings on roentgen examination suggested (1) an osteoclastoma of the right femur with changes at the periphery resembling osteogenic sarcoma; (2) an osteogenic sarcoma of the left clavicle with invasion and destruction of the first rib and the upper border of the scapula on that side; (3) metastatic deposits in the third left rib, the inferior angle of the scapula, the skull, and the dorsal and lumbar vertebrae. The vertebral metastases were of two types: some resembled osteoclastoma and in others the lesion was of a more destructive type as in osteogenic sarcoma. Roentgenograms are reproduced. [The absence of microscopic examination of the tissues vitiates very largely the value of the report.]

**HODGKIN’S DISEASE, LEUKEMIA, LYMPHOSARCOMA, RETICULO-ENDOTHELIAL TUMORS**


This clinical lecture is based on 60 cases of Hodgkin’s disease in which intrathoracic lesions were present. In 57 patients there was enlargement of the mediastinal nodes demonstrable roentgenographically; 21 had involvement of the pulmonary parenchyma, and in 17 there was pleural effusion. The author states that roentgen therapy is often life-saving and if adequate will probably prolong life, but he does not say in what proportion of his cases it was used. Forty-five of his series were followed until death, the average duration of life being forty months; 2 were not followed; 13 were still alive. The average duration among those still living was fifty months and 7 of them had survived seventy-two months. The author mentions one patient who lived twenty-six years after the onset of the disease but does not include this case in his statistics.

Roentgenograms and references are included.


The Gordon test for Hodgkin’s disease depends upon the occurrence in rabbits or guinea-pigs of a characteristic encephalitic syndrome following intracerebral inoculation
of an emulsion of the patient's lymph nodes. Both Turner and his associates and McNaught found this response to be correlated with the presence of eosinophils in the nodes from which the emulsion was prepared.

Turner and his associates studied 11 cases of the disease proved histologically and obtained 5 positive and 6 negative results. In all the positive cases eosinophils were present in the corresponding sections and the rapidity of the response paralleled their number. Eosinophils were rare or absent altogether in sections from the negative cases. In 12 control cases giving a negative response eosinophils were also absent. Suspensions of normal leukocytes containing as many as 2000 eosinophils produced a paralysis indistinguishable from that seen in the positive Hodgkin cases.

McNaught obtained a positive reaction in 10 of 13 proved cases of Hodgkin's disease and in 2 of 37 patients with other types of lymphadenopathy. A review of sections of the tested nodes showed that all those eliciting a positive response were rich in eosinophils, while in the remainder few or no eosinophils were present. Extracts of human tissues from patients known to be free of Hodgkin's disease, containing many eosinophils, and a leukocytic cream with a high eosinophil count were then tested and found to produce the characteristic paralysis in rabbits.

Both papers refer to Friedemann's finding of an encephalitogenic agent similar to that of Gordon in normal bone marrow and conclude that the two are identical, being apparently derived from the eosinophil. McNaught points out that since this cell is easily demonstrable in the lymph nodes, the Gordon test is superfluous. Both papers include bibliographies.


A boy eleven years of age had Hodgkin's disease, primarily hepatic, with an enormous liver and enlarged cervical nodes. The spleen was not enlarged. The unusual feature was a bilateral infiltration of the tarsus of the eye. There are no illustrations.

Edward Herbert, Jr.


A boy seven years of age developed a hemorrhagic syndrome with enlargement of lymph nodes, spleen, and liver. He died following a profuse hematemesis one month after the appearance of the first symptoms. The blood count was normal at first but showed a progressive anemia; terminally immature mononuclear cells appeared, but the white count never rose above 15,000. Apparently no autopsy was performed.

Edward Herbert, Jr.


A man twenty-two years of age who complained of dyspnea and swelling of the neck was found to have an acute lymphoblastic leukemia with a mediastinal tumor and enlargement of the thyroid and both parotid glands. The diagnosis was made from the blood count, which showed 64,000 white cells with 69 per cent of the cells of the lymphocytic series. Radiotherapy brought about an improvement in the symptoms, but the disease progressed and caused death at the end of two months. No autopsy was performed.

Edward Herbert, Jr.

A man fifty-one years of age had a myelogenous leukemia, with generalized lymph node enlargement, splenomegaly, and hepatomegaly. The white count was 60,000, but rose to 120,000 after an injection of adrenalin. The diagnosis was confirmed by biopsy of a cervical lymph node. In spite of radiotherapy the patient died six weeks after he was first seen. Emphasis is laid on the difficulty in differentiating certain types of myeloblasts from monocytes, and it is suggested that possibly some of the cases reported as monocytic leukemia are in reality ordinary cases of myeloblastic leukemia. Two photographs are included.

Subacute Myeloid Leukemia in a Patient with Hereditary Tremor and with the Aran-Duchenne Type of Muscular Atrophy, F. Micheli. Leucemia mieloide sub-acuta in soggetto affetto da tremore ereditario e da atrofia muscolare tipo Aran-Duchenne, Minerva med. 1: 249-255, 1936.

A fifty-nine-year-old man gave a three-month history of malaise, anorexia, progressive weakness, increasing pallor, and low-grade intermittent fever. The white cell count was 117,000 with 80 per cent of immature myelocytes. A fine tremor of the upper extremities, increased by voluntary movement and on emotional disturbance, had been present from infancy and was regarded as hereditary, although no family history was available. A thenar, hypothenar and interosseous atrophy was present, the last more marked on the left, where the shoulder girdle musculature was involved. This is classified as the Aran-Duchenne type of muscular atrophy, due to progressive degeneration of the anterior horn cells of the cervical cord. This type of atrophy may occur as a result of infiltration of the cord by lymphoid cells (Sega: Arch. di pat. e clin. med. 14: 387, 1935. Abst. in Am. J. Cancer 25: 241, 1935), although the leukemia and atrophy were believed to be unrelated in this case. The patient was given intense arsenical therapy, followed by roentgen therapy. The white cell count fell from 150,000 to 15,500 but the patient died.

Two other cases of acute leukemia are briefly presented, one in the aleukemic state, to illustrate the frequency of fever in these cases. The author holds that there is no correlation between the rapidity of the course and the blood picture. He cites Rosenthal and Harris (J. A. M. A. 104: 702, 1935. Abst. in Am. J. Cancer 25: 241, 1935) who obtained remissions lasting several months in acute forms of leukemia with irradiation of the spleen, dorsal spine, and ribs.


A girl five years of age had abdominal pain and vomiting of one year’s duration and numerous palpable masses in the abdomen. She developed a pleural effusion and died. At autopsy a small-cell lymphosarcoma was found, apparently arising in the mesentery of the small intestine. A review of the literature is given. There are no illustrations.


A child of eighteen months had several large tumors of the scalp without invasion of bone. Biopsy showed the tumors to be reticulum-cell sarcomas. Large doses of x-ray were given but without any appreciable effect on the tumors, which continued to grow and produced generalized metastases. A photograph and a photomicrograph are included.

The author discusses the various classifications of diseases of the reticulo-endothelial system, which Epstein (Med. Klin. 21: 1501, 1542, 1925) calls """"histiocytomatoses"""" and Uehlinger (Beitr. z. path. Anat. u. z. allg. Path. 83: 719, 1930) """"reticuloses."""" The present paper is devoted to simple hyperplastic histiocytomatosis, of which Epstein recognized two varieties: (1) hyperplasia of the endothelial cell (leukemic endotheliosis) and (2) hyperplasia of the reticular histiocytes of the hemolymphopoietic organs and skin (aleukemic reticulosis).

One case is recorded. The patient, aged twenty-seven, gave a history of fever, malaise, and fatigability for four months and of enlarged axillary and cervical nodes for two months. Treatment for tuberculosis and syphilis and roentgen therapy had been tried without relief. On admission there were palpable nodes in the cervical, submaxillary and axillary regions and the liver and the spleen were enlarged. There was slight anemia; the leukocyte count was 10,760 with a normal differential count. Death occurred nine months later. Autopsy was not obtained.

The importance of biopsy for the differential diagnosis of diseases of the reticulo-endothelial system is emphasized. In the case recorded an excised node showed loss of normal architecture. The lymph channels were dilated by proliferating phagocytic cells, larger than lymphocytes, with a tendency to polymorphism and syncytial formation, and an argentophile reticulum was present.

Clinically there are two types of simple hyperplastic histiocytomatosis: an acute type, called acute aleukemic monocytic leukemia by some, with features similar to acute or subacute monocytic leukemia, and a chronic type with either hepatosplenomegaly or lymphadenopathy predominating, or a combination of the two. X-ray therapy and medication are ineffective.

Six photomicrographs are included and a bibliography of about ninety sources is appended.


The author studied the cancer incidence in the more goitrous and the less goitrous states of the United States as determined by Draft Board examinations at the time of the World War. In the more goitrous states the mean cancer incidence per 100,000 was found to be 28.6 ± 8 and in the less goitrous 18.56 ± 1.8. The findings of Stocks (Biometrika 16: 364, 1924; 17: 159, 1925) for Switzerland and America and of Stocks and Karn (Ann. Eugenics 2: 395, 1927) for England and Wales also indicate a positive correlation between the occurrence of goiter and of cancer.

References and two maps are included.