ABSTRACTS

EXPERIMENTAL STUDIES; ANIMAL TUMORS


In a further contribution to his series of studies on carcinogenesis Shear records his experiments with the methyl derivatives of 1 : 2-benzanthracene and related compounds. Of 21 compounds examined 10 produced tumors in mice at the injection site. The more potent carcinogenic compounds were 5 : 10-dimethyl-1 : 2-benzanthracene, 5-methyl-1 : 2-benzanthracene, 10-methyl-1 : 2-benzanthracene, 5 : 9-dimethyl-1 : 2-benzanthracene, 9-methyl-1 : 2-benzanthracene, 4–10-ace-1 : 2-benzanthracene, 1′ : 2′ : 3′ : 4′-tetrahydro-4 : 10-ace-1 : 2-benzanthracene, 20-ethylcholanthrene. Tumors were also produced by 7-methyl-1 : 2-benzanthracene and 9 : 10-dimethyl-1 : 2-benzanthracene. Photomicrographs are included and there is a comprehensive bibliography.


In experiments on rats the age of the animal was found to bear little or no relationship to the latent period in the production of sarcoma by subcutaneous injection of methylcholanthrene. This is in accord with the findings of others with tar carcinoma (see Woglom: Arch. Path. 2: 731, 1926) and sarcoma produced by subcutaneous injections of dibenzanthracene and benzpyrene (Dunning, Curtis, and Bullock: Am. J. Cancer 28: 681, 1936).


Two doses of 0.4 c.c. of a solution of methylcholanthrene in arachis oil, with an interval of 49 days between them, were injected intracerebrally into each of 33 guinea-pigs. One animal died 110 days after the first injection, with a polymorphous-cell sarcoma of the heart. Other animals which died between 50 and 160 days after the injections had no tumors. It is uncertain whether methylcholanthrene produced the sarcoma.

L. Foulds


Benzpyrene as a carcinogenic agent is considerably less effective in the rabbit than in the mouse. A 1 per cent solution in chloroform was extremely toxic when applied locally twice weekly to the rabbit’s ear. Hyperkeratosis developed in the 13 of the original 50 animals that survived after two months of treatment. A local squamous-cell cancer developed in one animal that lived 587 days.

Intramuscular injections in the thigh of benzpyrene in fat were given to 42 rabbits three to four times a month. Polymorphic-cell sarcoma was observed in 4 animals that lived from 224 to 448 days. Generalized metastases were present in one rabbit which lived 360 days.

A photograph, photomicrographs, and a bibliography are included.

Milton J. Eisen

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The slight effects of carcinogenic compounds on cell respiration previously observed by the author (see, for example, Compt. rend. Soc. de biol. 112: 1222, 1933 and 113: 930, 1933. Abst. in Am. J. Cancer 19: 415, 1933) were possibly due to the insolubility of the compounds in water and the short life of the cellular material. To avoid these drawbacks the water-soluble carcinogenic compound styryl 430 was tested on baker's yeast. Respiration was reduced by 30–50 per cent in the presence of 1/100,000 styryl 430 and by 90 per cent with a concentration of 1/10,000. The inhibition persisted for forty-seven hours; respiration then gradually increased but remained below that of the controls. The inhibition was not due to the death of cells. Aerobic and anaerobic glycolysis were inhibited by 1/10,000 styryl but regained the same level as in controls in twenty-one hours. Styryl greatly increased the incubation period of zymase. It is suggested that styryl 430 disturbs the phase of "phosphorylation" by destruction of cozymase.


The effect of tobacco tar on the rabbit's ear was tested. A preliminary treatment consisting of the application of coal tar to one ear and a diet rich in cholesterin was given to three animals. After several months warts appeared and the coal tar was discontinued. Tobacco tar was then applied three times weekly to the non-treated ear. The animals succumbed after four to five years. Small warts developed on the ears treated with the tobacco product in 2 animals, and in the third there was a squamous-cell cancer which measured 4 × 3 cm. The last animal also had a papilloma on the nictitating membrane, multiple hemangiomata, and a spindle-cell sarcoma of the rectum. The relationship of the tobacco to the tumors in the non-treated areas cannot be established. Spontaneous tumors of this type are rare in rabbits. On the other hand, the mucosa of the mouth has proved resistant to long continued treatment with tobacco tar. No metastases are recorded.

Photographs showing the gross appearance of the lesions are reproduced, but there are no photomicrographs.

[For other experimental work by these investigators on tobacco and cancer, see Ztschr. f. Krebsforsch. 42: 76, 1935 (Abst. in Am. J. Cancer 25: 172, 1935).]

Milton J. Eisen


Spindle-cell sarcomas developed in 4 mice at the site of repeated injections of estrogenic hormones. In another mouse there was a sarcoma of the bladder. The ages of the animals varied from 381 to 533 days; most mice of strains susceptible to adenocarcinoma of the breast and injected with estrogenic hormones died of mammary cancer before this period. Lacassagne does not agree with Loeb et al (Am. J. Cancer 30: 47, 1937) that sarcomas of this kind result from non-specific irritation. He believes that the production of sarcomas supports his previously expressed opinion that the estrogenic hormone can exert its stimulation of cellular multiplication on varied tissues not belonging to the genital system provided a sufficiently prolonged local action is ensured.

L. Foulds


Lacassagne previously reported a lymphoid sarcoma in a mouse which had received estrogenic hormone (Compt. rend. Soc. de biol. 121: 607, 1936. Abst. in Am. J. Cancer
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28: 152, 1936). Thirteen further examples are now described. Of the total 14, 11 originated apparently in the thymus. These usually appeared between the eighth and tenth months, the earliest being at 155 days and the latest at 403 days. The other three originated in lymph nodes and were observed at 458, 618 and 650 days. It may be suspected, therefore, that the majority of lymphoid tumors in mice originate from thymocytes. The affected mice belonged to four pure lines; one line had a high incidence of mammary cancer but no case of spontaneous sarcoma either spindle-cell or lymphoid was observed in any of the strains during five years. Although an hereditary factor has been recognized in the occurrence of lymphoid sarcoma in mice, it seems that the tumors now described must be attributed to hormone action.

L. FOULDS

Hypophysial Tumors Induced by Estrogenic Hormone, B. ZONDEK. Am. J. Cancer 33: 555–559, 1938.

Zondek obtained pituitary tumors in 29 of 35 rats of both sexes treated continuously with estrogenic hormone over a period of eight months. This effect seemed to depend on the duration of treatment rather than on the amount of the hormone administered, for one rat which received 1,640,000 mouse units had a smaller tumor than one receiving 420,000 units in an equal period. The treated rats showed retarded growth and inhibited sexual development, suggesting interference with the production of the growth and gonadotropic hormones. The pituitary tumors, however, contained the same amount of gonadotropic hormone as the hypophyses of normal animals, indicating that it is not the production of this hormone but its utilization that is inhibited.


The author records the continuation of previous experiments (Ztschr. f. Krebsforsch. 45: 1, 1936. Abst. in Am. J. Cancer 31: 298, 1937) on the development of uterine neoplasms in the rabbit following the subcutaneous injection of prolan or folliculin in combination with the application of tar to the ear. Observations on 20 animals are recorded in the present paper; the uteri of 17 animals were necrotic and therefore unsatisfactory for microscopic examination. Minimal tarring was used in one-third of the animals during the first three months of observation, but tarred animals did not react differently from the non-tarred. The animals were castrates. They received 0.1 mg. folliculin intramuscularly twice weekly. The experiments lasted from one to one and a half years.

The changes observed are attributed to hormonal factors and are classified in 4 groups, of which the first 3 represent different grades of simple endometrial hyperplasia.

1. Polypoid, cystic, and adenomatous proliferation of the mucosa, 7 cases.
2. Penetration of proliferating uterine glands in the myometrium, 6 cases.
3. Extension of proliferating glands to the serosa, 5 cases.
4. Production of tumor-like growths, 2 cases. In both these cases there was evidence of the hyperplastic changes described above. In one, solid areas of atypical epithelial cells were present in the muscular layer and serosa; cartilaginous tissue was present in some foci; the uterine ligament contained a circumscribed solid node of proliferating epithelial tissue. The other case showed infiltrating masses of compact epithelial cells in the uterine wall; in some areas the cells were of the squamous type; deposits of bone were also found. The condition is believed to be a cancer-like proliferation, but no transplantations were made and no metastases are recorded.

Photomicrographs are reproduced.

MILTON J. EISEN


Injections of progesterone or testosterone into mice receiving also injections of estrone did not prevent mammary carcinoma in the cancer strain R 111 nor cause its
development in three non-cancer strains of mice. Testosterone did not alter the incidence of spontaneous mammary cancers in the females. The dosage of progesterone and testosterone, however, was rather small.

L. FOULDS


Production of Sarcoma in Albino Rats as a Result of Feeding Crude Wheat Germ Oil, G. M. DORRANCE AND E. F. CICCONE. Ibid. 36: 426–427, 1937.

These are preliminary notes on work later recorded at length in Am. J. Cancer 31: 359, 1937.

Tumours in Rats and Mice Following the Injection of Thorotrast, F. R. SELBIE. Brit. J. Exper. Path. 19: 100–107, 1938.

Thorotrast (0.3 c.c.) was injected subcutaneously into 60 rats, the dose being repeated once after fourteen days. Tumors developed in 25 out of 43 animals which survived one year or longer. Twenty-two of the tumors were spindle-cell sarcomas and the remaining 3 fibromas. Autotransplantation succeeded with 11 out of 12 tumors and homotransplantation with 5 out of 13 tumors.

A similar experiment was carried out on 60 mice which received 2 doses each of 0.1 c.c. thorotrast. Tumors developed in 9 mice. The first appeared at thirty-nine weeks. At fifty-two weeks 1 mouse was dead with tumor and there were 34 survivors; the second tumor did not appear until the sixty-second week, when there were 20 survivors. A tumor was found in the last surviving mouse at ninety-four weeks. There were 6 spindle-celled sarcomas, one osteosarcoma which apparently originated on a rib at the upper limit of a deposit of thorotrast, one histiocytoma, and one capillary angio-endothelioma. Autotransplantation succeeded with 5 out of 5 tumors and homotransplantation with 2 out of 8.

In a further series of experiments rats were killed, at varying intervals after injection of thorotrast, to study the early stages of tumor formation. The thorotrast was taken up by macrophages which after six days formed a closely packed mass surrounded by a capsule of fibrous tissue in which most of the fibroblasts contained thorotrast. Subsequently the fibrous tissue increased. Thorotrast-laden macrophages were usually present in regional lymph nodes but apparently very little thorotrast was removed from the site of inoculation. The earliest tumor originated from the fibrous capsule of a thorotrast deposit. Fibroblastic proliferation was noticeable in many of the tumor rats and it seemed that tumors were formed when the inflammatory reaction was intense. The unexpectedly long latent period in mice was due probably to the insensitivity of their connective tissue in comparison with that of rats.

Thorotrast seems to act primarily as a foreign body, producing an inflammatory tissue which is more susceptible to radiation than normal tissue. The process is probably analogous to the production of tumors in rabbits by x-radiation of chronic inflammatory lesions, the amount of x-radiation being insufficient to produce tumors in normal rabbits (Burrows, Mayneord and Roberts: Proc. Roy. Soc., Ser. B 123: 213, 1937. Abst. in Am. J. Cancer 32: 136, 1938). [While this explanation may be the correct one, it must not be forgotten that freshly prepared thorium emits 4500 alpha particles per second per gram and in equilibrium with its decomposition products 27,000 alpha particles per second per gram. If Martland’s theory that the bone sarcomata are due to alpha particle bombardment (Am. J. Cancer 15: 2435, 1931), this is easily supplied by a moderate amount of thorotrast. The commercial preparations may also furnish an appreciable amount of beta and gamma radiations, which the experiments of Biltris (Bull. Assoc. franç. p. l’étude du-cancer 22: 438, 1933. Abst. in Am. J. Cancer 20: 644, 1934) and others have shown to be carcinogenic if the exposure is sufficient.—Ed.] L. FOULDS

In several previous communications the author has reported the production of carcinoma and sarcoma in rats by solar rays. In further studies multiple tumors were observed, limited, as in the earlier experiments, to regions unprotected by hair. The process usually starts in about two months with small hyperkeratotic skin lesions and local hypercholesteremia, with frank tumor development in seven to nine months and widespread lymph node metastasis and death in twelve to eighteen months. A series of 16 animals exposed to the sun's rays all developed spindle-cell sarcomas, multiple tumors being present in 10, or 62.40 per cent. Photomicrographs are included.

SEATON SAILER

Influence of Spleen and Adrenals on Tissue Cholesterol Content Produced by Ultraviolet Radiation in Relation to Cutaneous Cancer, A. H. ROFFO. Influencia del bazo y las cápsulas suprarrenales sobre la colesterina tisular por irradiación ultra-violeta, en relación con el cáncer cutáneo, Bol. Inst. de med. exper. para el estud. y trat. del cáncer 14: 19–30, 1937.

The author extirpated the spleen in one series of rats and the adrenals in another, and then exposed the animals to local irradiation to the ears. The cholesterol content of the tissues treated was assayed at intervals. While control animals showed a notable increase in cholesterol, those with extirpated glands exhibited no such change, indicating a cholesterol-regulatory function on the part of the spleen and adrenals.

SEATON SAILER


This paper contains a general review of the previous literature on the relation of artificial and natural sunlight, skin cholesterol and photosensitizing compounds to the etiology of skin tumors, and a description of the author's experimental work with the problem. Three groups of 240 white mice were given subcutaneous injections, on an average of twice weekly, of 0.25 c.c. 1 per cent eosin, 0.05 mg. hematoporphyrin, or 0.2 c.c. of a 5 per cent aqueous emulsion of tar. They were placed almost daily in the sunlight for periods of four to five hours. The mortality was considerable; at the end of the experiment (210 days), only 15, 29, and 7 mice were alive in the three groups.

Local and general reactions began early, but a relative tolerance to the treatment developed after two or three weeks. The type of photosensitizing substance employed did not determine essential differences in the reactions in the animals. The skin lesions have been divided into three stages:

1. Inflammatory: During the first weeks conjunctivitis, diffuse reddening of the skin, vesicle formation, eczema and ulceration occurred. Many animals succumbed after the development of alternating convulsions and paralysis.

2. Atrophy and Beginning Skin Proliferation: These changes usually become manifest after the second month. Increasing alopecia and atrophy of the skin developed, together with a very characteristic hypertrophy of the subcutaneous connective tissue and an infiltration with mast cells. Somewhat later hypertrophic changes occurred in areas not involved by the atrophic process. The connective-tissue proliferation was progressive.

3. Tumor Development: The last stage began approximately after the third month as a direct continuation of the proliferative processes in the skin and subcutis. The change was gradual and imperceptible. The growths were few in number and of a benign character in the early months; 17 (33 per cent) of 51 animals that died at the end of the three month period had papillomata of the skin or fibromata in the subcutis. The percentage of animals with tumors gradually increased, and the first signs of malignant degeneration were observed in mice that succumbed during the sixth month.
At the end of the seventh month tumors had developed in 48 (94 per cent) of the 51 surviving animals. The growths tended to be multiple; 88 benign and 37 malignant tumors were distributed in the 48 positive animals. Squamous-cell cancer was the most common malignant lesion; spindle-cell sarcoma of the subcutis was less frequent. Metastases were not unusual. No attempts at transplantation are recorded.

Among 30 controls exposed to sunlight and 30 treated with the photosensitizing agent for each group of mice, 8 animals in each series developed benign skin papillomata. As general effects of the combined treatment, amyloidosis, hemorrhagic necrosis of the gastric wall, and degenerative changes in the organs were commonly observed. Myeloid leukemia developed in 5 animals, and there were 9 cases of adenocarcinoma of the lung, which developed usually after the fourth month and especially in mice that received the tar injections.

Photomicrographs and a bibliography are included.

MILTON J. EISEN

Light Sensitivity of Lecithin and Its Components in Relation to Cancer, G. Kögel.


Many investigators have associated disturbances in the metabolism of lecithin with cancer (see Dannmeyer and Treplin, Ztschr. f. Krebsforsch. 45: 171, 1936. Abst. in Am. J. Cancer 31: 123, 1937). Lecithin, however, is not a single uniform substance. Several forms exist, and all are choline esters of the phosphatides. Not only the lecithins are sensitive to ultraviolet light, but also the various compounds that form the lecithin molecules or allied substances, as glycerophosphoric acid, phosphoric acid, sodium phosphate, iron phosphate, glycerine and choline, as demonstrated by a loss of reducing power for silver compounds after exposure to ultraviolet light. The author's purpose has been to obtain definite chemical data on substances which may prove of importance in the study of cancer.

MILTON J. EISEN

Action of Irradiated Ergosterol and Allied Substances on Epithelial Tissue, H. O. Schmid.


A 0.2 per cent solution of irradiated ergosterol in linseed oil was injected into the gallbladder of guinea-pigs. The cystic duct was ligated. In animals sacrificed at intervals of three and a half to nine months a foreign body reaction in the wall of the organ, proliferation of the mucous membrane, formation of Luschka's ducts and penetration of glandular tissue into the deeper tissues of the organ occurred. There was a positive reaction in 6 of 9 animals that survived the intervention. A similar reaction was noted three to four months after the injection of a sterol (AT 10) isolated from irradiated ergosterol as a calcium-raising factor. At the time of examination no vitamin D was present in the gallbladder of the treated animals, nor were there any general effects. No true tumors were observed. Minimal effects were observed after the injection of unirradiated ergosterol in oil; the animals were negative after treatment with pure linseed oil. Photomicrographs are included.

[For the production of adenoma of the breast in white mice following the application to the skin of irradiated ergosterol the paper of Polletini (Boll. d. Soc. ital. di biol. sper. 11: 951, 1936. Abst. in Am. J. Cancer 33: 130, 1938.) may be consulted.]

MILTON J. EISEN

Production of Experimental Cancer of the Lung in Mice, M. G. Seelig and E. L. Benignus.


Seelig and Benignus describe a method of introducing carcinogenic compounds directly into the lungs of mice without the high mortality rate involved in the procedures commonly employed. This consists in the substitution of ordinary coal soot or lamp black impregnated with a carcinogenic hydrocarbon for the usual bedding of sawdust or shavings. Animals exposed to the dust from such bedding material have shown the presence of soot particles in the smaller intrapulmonary bronchi as early as six days after exposure. The authors' experiments are not recorded in detail but photomicrographs show the soot particles in the lungs. References are appended.
EXPERIMENTAL STUDIES; ANIMAL TUMORS

Epithelial Metaplasia. An Experimental Study, K. McCullough and G. Dalldorf.
Arch. Path. 24: 486-496, 1937.

In experiments on rats vitamin A deficiency was found to be an essential for the production of epithelial metaplasia by theelin or by mechanical irritation. Metaplasia frequently developed in the thyroid glands of rats maintained for long periods on a diet deficient in vitamin A, but only in association with epithelial hyperplasia. Photomicrographs are included.


This article is largely a review of the literature supplemented by a report on the feeding of rats with a 7 per cent solution of o-amidoazotoluol in olive oil with a diet of whole rice. After 170 days proliferative changes with cyst formation were observed in the bile ducts, and numerous liver-cell adenomas were present, many of which were microscopically malignant, although no metastases were found. Two photographs are included.

EDWARD HERBERT, JR.


Other observers have maintained (Ehrich: Ztschr. f. Krebsforsch. 44: 308, 1936; Abst. in Am. J. Cancer 29: 755, 1937) that the nuclei of malignant cells are two to four times as large as those of normal cells, while a less striking enlargement is characteristic of benign tumors. Schairer does not find these differences of sufficient regularity to warrant general hypotheses on the proliferation of tumor cells. The nuclei in tar warts and cancers showed greater irregularity in size than those of corresponding cells of normal skin, and there were a greater number with large diameters. Nevertheless, the nuclei in cancers developing from the hair follicles were often small. Irregularly enlarged cells were observed frequently in human cancers, but the measurements in many cells did not differ radically from normal. Many enlarged cells occurred in regenerating epithelium.

Morphological evidence of a general tumor disposition believed by many to be produced by tar was not revealed in nuclear measurements of the liver cells of tarred mice. Moderate enlargement was noted, but this did not differ essentially from the enlargement in control animals of the same age (usually advanced). The size of the liver cells may also vary with such influences as the injection of toxins or foreign protein, vital stains, hunger, or obstruction of the portal vein.

Photomicrographs and a bibliography are included.

EDWARD HERBERT, JR.


This is an account of the so-called Ehrlich-putnoky tumor, a transplantable rat carcinoma obtained by heterotransplantation of the Ehrlich mouse carcinoma. The tumor has been maintained in approximately 2000 rats during 300 passages without the
necessity of utilizing mice to sustain its vitality. During the early experiments the rats were treated with lactic acid, but this procedure was discontinued. The animals were kept on a bread diet. In order to maintain the tumor, it had to be transplanted every eight days. It developed rapidly and caused death in fourteen to fifteen days in 59 to 82 per cent of the animals. No metastases were observed. The average tumor weight was 38 grams. The growth is considered to be an undifferentiated carcinoma. [Recently Langer (Tumori 12: 47, 1938) reported his inability to confirm the results of Putnoky.]

Subcutaneous injection, ten days prior to transplantation, of tumor tissue heated at 56°, 70°, or 100° C. for one hour produced an increase in the size of the growths. In the case of another heterologous tumor (" TM " strain) the percentage of takes also was greater with the exception of the 100° C. material, which in both instances was followed by a diminution in the number of tumors. A more pronounced increase in the size of the tumors was obtained when the heated emulsion was injected two days following transplantation. The percentage of takes was less when the injection was made in the area of transplantation either before or after inoculation of the tumor. Better tumor growth was observed when the material for transplantation was emulsified in heat-inactivated tumor tissue. Some reduction in the percentage of positive transplants was noted following the treatment of the animals with heated emulsions of liver, kidney, or brain tissue, but the size of the tumors was not affected.

A bibliography is included, and there are three photomicrographs.

[For an account of the immunity reactions of this tumor, see Am. J. Cancer 32: 35, 1938.]

MILTON J. EISEN


An analysis is made of the growth curves, during a period of nine years, of two strains of the Ehrlich mouse carcinoma. The strains of mice used for the 2920 transplants were not uniform. The percentage of positive takes was in direct proportion to the rate of growth of the neoplasm. A definite seasonal variation in the rate of tumor growth was observed. This was maximal in the spring and fall, minimal in summer and winter. The differences depended most probably on variations in the resistance of the animals. There were two types of relationship of rate of tumor growth to life expectancy. In the first group slow, moderate and rapid growth were associated with a rapidly, moderately delayed, and rapidly fatal outcome respectively. In the second group death occurred proportionately earlier as the rate of tumor growth became more rapid. The authors ascribe the fatal outcome in the first group to the toxic effects of the necrohormones which are said to be formed in a growing neoplasm, and in the second to the direct effect of the presence of the tumor. The frequency of metastases increased proportionately to the increase in the length of life of the animals. MILLON J. EISEN


Preliminary observations on the influence of excision of the axillary and inguinal lymph nodes on the growth and metastasis of the Flexner-Jobling rat carcinoma are recorded. Unilateral and bilateral removal did not influence the development of the primary tumor, but regional and generalized metastases were observed regularly, within four weeks after transplantation, in animals subjected to either operation. In controls (operative exposure of the nodes without excision), regional metastases developed after five to seven weeks. No definite statement is made as to the growth in non-treated rats.

MILTON J. EISEN


Four or five intraperitoneal injections of 1 c.c. of a 1 per cent gum arabic solution were given to rats during a period of fourteen days previous to inoculation with the
Flexner-Jobling carcinoma. Twenty-two (40 per cent) of 55 treated animals showed no tumor growth, and 6 (15 per cent) of 40 controls were negative. When a tumor developed in treated animals, the growth was somewhat smaller than in controls. Some inhibition of growth was obtained after the subcutaneous injection of gum arabic solution twice weekly in animals with tumors of three weeks' development not previously treated.

Milton J. Eisen


The author refers to his earlier work (Arch. f. exper. Path. u. Pharmakol. 181: 174, 1936. Abst. in Am. J. Cancer 30: 146, 1937) on the inhibitory effect of castration on the growth of transplantable tumors in the rat. The effect was most pronounced in the period three to six months following castration. Katz (Ztschr. f. Krebsforsch. 45: 139, 1936. Abst. in Am. J. Cancer 31: 298, 1937) found that tar tumors were less likely to develop in castrated animals, and believed the result to depend upon changes in the hypophysis—increased secretion of prolan. Druckrey does not believe this interpretation completely proved, and considers the possibility of a special gonadotropic substance secreted by the castration hypophysis being the causative factor. A change in the secretion of the anterior lobe of the hypophysis and prolan are not necessarily related, since reliable evidence exists that the increased amount of prolan in the urine of pregnancy has its origin in the placenta. Prolan injections had no effect on transplantable tumors, although Katz obtained inhibition in the development of tar tumors by the use of this agent.

Milton J. Eisen


The effect of freezing and subsequent thawing on the Ehrlich mouse sarcoma is reported in this paper. Pieces or suspensions of tumor tissue were placed in liquid nitrogen (−196°C) for intervals of three minutes to forty-seven hours, and then thawed at room temperature. The material suffered no loss in ability to produce tumors on inoculation into animals. After freezing, the tumor remained viable for approximately two weeks when kept at a temperature of −20°C. No loss of proliferative capacity was observed after freezing, and thawing at 2°C for a period of forty-three hours, but no growths were obtained with tissue kept at 38°C for more than four hours after freezing. Five successive repetitions of freezing for three minutes and thawing at room temperature did not affect the transplantability of the tumor. No effect was observed on transplanting treated tumor directly under a fresh or old skin burn. In none of the experiments did the percentage of positive transplants differ from that in controls, but the time interval before the appearance of a growth was generally prolonged, and the tumors did not attain the size of the non-treated transplants. The results with liquid oxygen were similar.

Milton J. Eisen


Leukemic cells suspended in Tyrode solution were subjected to rapid freezing and to slow freezing. As shown by subsequent injection into mice, the transmitting agent survived exposure to −70°C. during thirty minutes if the temperature were reduced slowly, but was inactivated if exposed rapidly to −30°C. and maintained at that temperature for thirty minutes. That the duration of exposure is not the major factor in determining the survival of the agent was indicated by experiments in which leukemic tissue, slowly frozen to −30°C. during 180 minutes, produced disease in mice fatal after approximately the same number of days as the disease produced by tissue exposed for thirty minutes.

Sarcoma tissue of mice exposed to −70°C. and kept at that temperature for fifty-
ABSTRACTS

Six days produced tumors in 3 of 4 injected mice [a phenomenon which has long been known].


A third and fourth transplantation was attempted in rats that were refractory to two transplantations of the Jensen sarcoma, the Flexner-Jobling carcinoma, or the Ehrlich-Putnoky variant of the Ehrlich mouse carcinoma, or in which a tumor had developed and regressed. The results of the first observations on retransplantation appeared in Ztschr. f. Krebsforsch. 44: 240, 1936 (Abst. in Am. J. Cancer 30: 148, 1937). In the present series of animals tumor growth occurred in 3 of 276 animals after the second retransplantation (2 Flexner-Jobling tumors and 1 Ehrlich-Putnoky tumor), and in 2 of 233 animals following the third (1 Flexner-Jobling and 1 Ehrlich-Putnoky tumor). Adequate controls were used. Transplants of tumor strains other than that to which an immunity existed were then made in each group. The percentage of takes was now comparable to that in controls. The experiments demonstrate that immunity to transplantable tumors is acquired and specific. A bibliography is appended.

Milton J. Eisen

Immunization Experiments on the Brown-Pearce Rabbit Tumor: Intravenous and Intracutaneous Treatment with Cell-free Extracts of Frozen Material, W. Raab.


No effect on growth or metastasis of the Brown-Pearce tumor was observed in rabbits treated previous to transplantation by intravenous or intracutaneous injections of a saline extract of frozen tumor, by intravenous injection of an extract of frozen muscle of tumor animals, or by intracutaneous injection of the tumor residue after extraction with acetone.

Milton J. Eisen


Spontaneous pulmonary metastasis of the Jensen sarcoma has never been observed in the author's strain of tumor or of rats. Diffuse growth in the lungs occurred in more than 50 per cent of the animals after intravenous injection of a tumor emulsion. Tumor emulsion prepared from the growths of other animals or from partially or completely resected autogenous tumors was injected intravenously in 36 animals bearing subcutaneous tumors two to three weeks in development. Tumors in the lungs developed in 6 animals. A second subcutaneous transplantation was successful in tumor-bearing animals, and was positive in 3 of 4 animals in which simultaneous intravenous injection was unsuccessful. In 10 control animals simultaneous subcutaneous and intravenous inoculation resulted in 6 subcutaneous tumors, but in only 2 lung tumors.

The acquired resistance of the lung tissue is not absolute, since pulmonary neoplasms developed in 10 of 21 rats following three to four repeated intravenous injections of autogenous tumor emulsion at intervals of three to five days.

A description is given of the histological characteristics of the processes of tumor proliferation and absorption in the lungs. Photomicrographs and a bibliography are included.

Milton J. Eisen


Subcutaneous grafts of a sarcoma produced by benzpyrene stopped the estrous cycle in 21 out of 23 rats. When the tumors were removed from 4 rats, the cycle was resumed; it was stopped again in one rat by a second tumor graft. Sarcoma grafts, therefore, inhibit the estrous cycle in rats and the action is reversible.

L. Foulds
**Experiments on Fractions of the Liposarcoma of the Guinea-pig, P. Mendéléeff.**


Colloidal aluminum was added to a saline extract of the liposarcoma of the guinea-pig. The product, termed fraction I, was filtered through a Berkefeld D3 candle, yielding fraction II. A rabbit injected with fraction I developed precipitins against both fractions, but a rabbit injected with fraction II failed to develop precipitins against either fraction. Serum and organ extracts from the immunized rabbits were injected into guinea-pigs in the proximity of small liposarcomas; those from the rabbit injected with fraction II caused complete regression of the tumor in 3 out of 4 animals, while those from the rabbit injected with fraction I accelerated tumor growth. It is concluded that fraction II contains a specific principle which acts as an antigen in rabbits and produces antibodies which arrest the growth of cancerous tissues of guinea-pigs in vivo.


The action of fractions of guinea-pig liposarcoma and extracts of the organs of rabbits injected with these fractions (see preceding abstract) was tested on the growth and germination of wheat. Fractions I and II considerably stimulated germination, while the rabbit extracts did not. Germination was retarded by fraction I mixed with extracts from the rabbit injected with fraction II, but to a greater extent by fractions I and II mixed with extracts from the rabbit injected with fraction I. Growth of shoots was slightly stimulated by fraction II, considerably inhibited by both rabbit extracts, and unaffected by mixtures. The extracts inhibited the elongation of roots yet more strongly. Mixtures of fractions I and II with the rabbit extracts also inhibited the elongation of roots, but fractions I and II alone increased their number.


Serum from mice immunized to line I transplantable leukemia was without specific effect on the respiration or on the aerobic or anaerobic glycolysis of line I leukemia cells. On the addition of 0.2 per cent glucose, line I cells in leukemic serum showed an increase in anaerobic glycolysis about three times greater than cells in normal serum to which glucose was added. In leukemia serum to which no glucose had been added, the O₂ consumption of line I cells was greater than the CO₂ elimination due to combined CO₂ and acid production, while in untreated normal or immune serum the relationship was exactly opposite. Anaerobic glycolysis of line I cells was inhibited by leukemic serum. As compared with normal lymphoid cells, line I leukemia cells had a higher aerobic and anaerobic glycolytic rate in normal serum while the respiratory rate was the same. Comparison of line I and normal lymphoid cell metabolism in normal serum and Ringer solution showed that in serum the cells have higher respiratory rates, while their anaerobic glycolytic rates are the same in both media.

In the second paper the authors compare the blood sugar levels in normal, immune and leukemic mice under ether anesthesia. In the mice with line I leukemia the blood sugar level was one-third the normal, the range for the leukemic animals being 39–129 mg. per 100 c.c., as compared with 159–284 mg. for normal and immune mice. The life of the leukemic mice was not prolonged by the administration of glucose or adrenal extract. Bibliographies are given.
Rous Chicken Sarcoma No. 1 and Papilloma of Wild Rats, M. Beatti. Sobre el sarcoma I de gallinas de Peyton Rous y papilomas de ratas salvajes (Rattus norvegicus), Semana méd. 1: 867–868, 1937.

Working with fresh suspensions of the Rous tumor kept at low temperature for more than a year the author was able to reproduce tumors in the pectoral muscle of chickens and noted a constantly appearing greenish color beneath the skin and in the affected tissues. This he believes may be due to oxidation of transformed hemoglobin.

The author has noted papillomas in the ears, nose and tails of wild rats which are possibly of virus origin and similar to the lesions which have been described in wild rabbits.


The agent of Rous sarcoma I was deposited in a Sharples centrifuge at a speed of 36,000 r.p.m., giving a centrifugal force of 33,000 times gravity. The deposit was washed and resuspended and further purified by repeated sedimentation and dispersion with a Swedish angle centrifuge which gave almost complete sedimentation of the active material. The deposit was finally taken up in a small volume of water, dried from the frozen state in vacuo and dried to constant weight at 110°C. The purified preparation consisted mainly of protein with a high nitrogen content and a variable amount of lipid material. There was no relation between the tumor-producing activity of a preparation and its lipid content and much of the lipid could be removed without destroying the activity. The lipid may be an essential constituent of an organized system or may be merely an impurity. [For the author’s earlier work on the lipid fraction of the Rous sarcoma, see Pollard and Amies: Brit. J. Exper. Path. 18: 198, 1937. Abst. in Am. J. Cancer 32: 464, 1938.]


Keogh used Burnet’s technic for producing virus lesions on the chorio-allantoic membranes of developing chick embryos; in this method the membrane is not pierced. Typical Rous sarcomata were produced by applying emulsions of tumor cells. A centrifugate prepared from a tumor-bearing membrane produced distinctive lesions on new membranes, and 30 serial passages of the virus were made on egg membranes using centrifugates or cell-free filtrates. In the later passages the centrifugates were usually infective at a dilution of 10^-4, the dose being 0.05 c.c. and the number of lesions on a membrane was proportional to the concentration of the inoculum. The lesions were unlike any non-specific or virus-induced lesions previously observed. After seven days they formed flattened, circular, pearly opacities with diameters of 0.5–2 mm. They were produced by the proliferation of ectodermal cells which actively invaded the mesoderm after six or seven days and sometimes completely replaced it. If the eggs were not previously opened, the chicks usually hatched out and lived about three weeks; they died with multiple tumors having the characteristic structure of Rous sarcoma in the liver or lungs or both. Virus from the twentieth passage on membranes produced typical Rous sarcomas when injected intramuscularly into chickens. Rous virus was present, therefore, in the eggs with ectodermal lesions. Since the lesions showed histological criteria of malignancy and the responsible agent corresponded with the Rous virus in its instability at room temperature, its range of heat inactivation, and its particle size (so far as this could be determined), it was concluded that the Rous sarcoma virus had the potentiality of infecting ectodermal cells. There are three photographs and five photomicrographs of infected membranes.


Complement-fixing and virus-neutralizing properties developed in the sera of rabbits immunized with Shope fibroma virus. The IA and OA strains were indistinguishable

Fever therapy had no effect upon the ultimate development of myxomatosis and fibroma in rabbits. A temperature as high as 107°-110° F. was tolerated by the animals provided this was reached gradually.

[Woglom (Am. J. Cancer 21: 604, 1934) reported that raising the body temperature several degrees even for periods of 348 hours had no adverse effect upon the growth of transplantable tumors in the mouse and rat. Walker (Am. J. Cancer 25: 301, 1935) found a temperature of 111.4° maintained for twenty minutes necessary for destruction of rat carcinoma 256, but none of his animals survived the treatment.]


There is a great lack in uniformity of correlation and interpretation of the influences of dietary factors on tumor growth. An extensive literature is here reviewed and experiments on the effect of the addition of vitamins to tissue cultures are recorded. In utilizing such a procedure, dosage within physiological limits is difficult to attain. Furthermore, indications exist that the vitamins are changed from their native state, as taken in a normal diet, to another during the process of utilization in the body. The authors attempted to circumvent these objections by changing the supply of vitamins in the diet of chickens used as the source of plasma and embryos. In this way and without other manipulation, conditions of hypo- or hypervitaminosis could be obtained directly in the tissue cultures. The growth of mouse carcinoma cells in the media was also studied. Chickens on a diet deficient in vitamins do not produce eggs; therefore, in experiments with such diets the embryonal components of the cultures were obtained from normal hens, the plasma from low-vitamin animals.

The dietary changes exerted a similar influence on the growth of chick fibroblasts and cancer cells. This was definitely inhibited in general avitaminosis, and in deficiency of vitamin A and B₁. Stimulation of growth occurred with excess of vitamin A and B₁. It was less evident with an increase of B₁. The cultures were most sensitive to changes in B₁. Practically no variations were noted on changing the supply of vitamin C, D, or E.

The authors are cautious regarding the therapeutic implications of their experiments, but it is suggested that a reduction in the supply of the growth-stimulating vitamins in the diet could be of value as an adjunct to the accepted methods of treatment of cancer. Photomicrographs of the tissue cultures and an extensive bibliography are included.


An attempt was made to study the processes of transportation and development of cancer cells in the lymph nodes. An emulsion of ascites cancer of the mouse was injected subcutaneously in both thighs, and the animals were sacrificed at intervals of thirty minutes to fourteen days. The regional, axillary, and abdominal nodes in the region of the aorta were examined for their content of tumor cells and reaction to invasion. The drainage path was previously ascertained by injection of India ink.

After a period of one to fourteen days tumor cells were demonstrable in the peripheral sinuses of the lymph nodes in 9 of 32 animals. In 2 animals examined on the ninth day
the cells were proliferating, but in all other mice signs of cellular degeneration were apparent. It is evident that a resistance to neoplastic cells exists in the lymph nodes, but this is very slight, as mention is made of the fact that regional metastases develop consistently in animals with this tumor after a period of three weeks. Histologic evidence of lymphatic tissue reaction as basis for the resistance was not observed. Photomicrographs are included.

**Localization of Foreign Proteins and Dyes in Neoplastic Growth**, F. Duran-Reynals.


The permeability of the stroma of malignant tumors of mice, both transplanted and spontaneous, was investigated by the intravenous injection of a variety of foreign sera and certain dyes. All showed a tendency to localize in the tumor rather than in any of the organs.

All mouse tumors studied, as well as the Brown-Pearce rabbit epithelioma and a chicken sarcoma, were deeply stained after injection of the dye T. 1824, the dye being fixed chiefly in the stroma, not in the tumor cells.


The authors observed no differences in the cathepsin content of the liver of normal rats and those immune to the Jensen sarcoma. Muscle tissue of various parts of the body of rats, rabbits, and chickens that were normal, tumor-resistant, or tumor-bearing did not contain measurable quantities of cathepsin. These findings are in contradiction to reports of Purr (Biochem. J. 28: 1907, 1934; Abst. in Am. J. Cancer 25: 423, 1935) and Waldschmidt-Leitz (Monatsschr. f. Krebsbekämpfung. 2: 293, 1934), who found that cathepsin was increased in the liver of cancer-resistant rats compared with normal controls and that a considerable quantity of cathepsin was present in the muscle of tumor animals whereas normally the enzyme is practically non-existent in muscle tissue.


Attempts were made to establish homozygous non-cancerous lines of mice by breeding from non-cancerous parents. Of 11 lines studied, only 2 remained free from cancer; one of these soon became extinct while the other (line XXX) has had no spontaneous cancer in about six years. Line XVII had an incidence of cancer of the breast of 1.7 per cent. From this line a line, XVIInc, was derived in which 16 generations in the direct line were free from cancer. From the 10th generation all members of the line were descended from a single female. No cancer has developed in about 500 mice of generations F 11–F 16. The strain, which has been under observation nearly ten years, shows the effectiveness of genetic selection for eliminating the factors of predisposition to cancer.


This is an analysis of the age incidence of spontaneous mammary cancer in 1250 mice of strains A and A2. The material appears in English in Am. J. Cancer 30: 527, 1937.
ETIOLOGY


This is a general discussion on some of the current etiological theories of cancer. The author stresses the importance of the retention of dissociated bile, with particular emphasis on the rôle played by cholesterol.

SEATON SAILER


In a series of previously published experiments it was noted that cholesterol irradiated with ultraviolet light acquires new properties of oxidation, photoactivity, ionization, fluorescence, and accumulation and absorption of ultraviolet light. The present work attempts to show the difference that exists in cholesterol before and after ultraviolet radiation as measured by its effect on Liesegang's rings (bichromated gelatine and silver nitrate). Cholesterol which has not been irradiated has no effect on Liesegang's rings but irradiated crystals cause notable deformation proportionate to the length of exposure to radiation. This property of irradiated cholesterol to deform the rings continues unaltered as long as six months after irradiation. A new product with special colloidal properties is produced by the ultraviolet radiation.

SEATON SAILER


The writer reviews the literature and adds a summary to the effect that in developmental stages, tissues may sometimes undergo neoplastic growth due not to local influences but rather to dysfunction of the nerve supply of the particular tissue involved.

EDWIN M. DEERY

Disposing and Inhibiting Factors in the Pathology of Malignant Tumors, M. VOLTERA. Fattori disponenti e fattori ostacolanti nella patologia dei tumori maligni, Riv. di clin. med. 37: 291–301, 1936.

A general discussion with no new material.

MILTON J. EISEN

GENERAL CLINICAL OBSERVATIONS; MISCELLANEOUS CASE REPORTS


The etiologic relationship of mechanical trauma to the development of malignant tumors has not been proved, though clinical histories often contain evidence of the importance of an earlier injury. Among 2,637 patients with external forms of cancer, a history of trauma prior to the appearance of the neoplasm was given by 171 (6.5 per cent). The average age was not less than in the cases with no history of trauma, and in many instances the story was too bizarre or the injury too insignificant (a scratch or cut) to be taken into consideration. In another group of 1,097 patients, 21 (1.9 per cent) gave a history of trauma at the site of an already existent lesion. The types of injury in the two series were similar in many cases, and it is logical to suppose that in the first group the trauma was in many instances an incidental occurrence, affecting an area in which a disease process was previously present.

MILTON J. EISEN

The hematogenous route is of primary importance in the development of metastases of malignant epithelial or connective-tissue tumors. The necropsy reports of 2074 cases of malignant neoplasms (in 50 patients multiple primary growths were present) form the basis for this report.

The following are considered as representative of the four types of metastatic spread:

1. Lung type (tumors of the lung or pleura): Following infiltration of the pulmonary veins generalized metastases are possible by means of the arterial system.
2. Liver type (the small group of primary hepatic tumors): Metastases occur by way of the hepatic veins, inferior vena cava, and heart.
3. Vena cava type: In this group are the tumors from which the venous return does not go by way of the liver, as those of the skin and appendages, upper respiratory tract, breast, and urogenital tract.
4. Portal type: The venous return passes through the liver, as in tumors of the gastrointestinal tract.

Metastases of 1410 of the 2124 tumors were observed, and their course was consistent with the above scheme in 94 per cent of the cases.

Lymph node metastases are either limited to the regional nodes, or, when present in distant nodes, they develop most probably as a result of drainage from a nearby secondary hematogenous deposit. Metastases in lymph nodes were found in about 1000 cases, and a relation to the primary tumor or secondary foci existed in practically all instances. Retrograde lymphatic spread is highly theoretical, and when the findings suggest this possibility, a more logical explanation is to be found in a process of growth by continuity.

There are a number of important contributing factors in the development of hematogenous metastases, such as the extent of the capillary bed in the organs and tissues, the specific receptivity for malignant cells, and the intrinsic proliferative capacity of these cells. No constant dependence of the absence or presence of metastases on histologic differentiation was observed.

Schematic drawings of the metastatic paths are reproduced.

Milton J. Eisen


Among 831 necropsies on persons with carcinoma there were 4 instances of true metastasis to the spleen (primary growths in the rectum, prostate, breast and stomach), and 6 of direct extension of the lesion to that organ. One case of hypernephroma showed secondary deposits in the spleen, and there were 3 instances of splenic metastases in 105 cases of sarcoma. Of special interest was a case of Hodgkin's disease of the ascending colon in a man of sixty-five with involvement of the abdominal lymph nodes and an isolated mass approximately 3 cm. in diameter in the spleen. Grossly the condition appeared to be carcinoma, but the microscopic picture was typical of Hodgkin's disease. Photomicrographs are included.

Milton J. Eisen


Differences were observed in the intestinal flora—chiefly B. coli and B. mesentericum—isolated from cancer patients or rabbits with the Brown-Pearce tumor and that of normal subjects. Filtrates of cultures on whole milk of strains associated with carcinoma exerted a protective action on cancer cells as tested by the Freund-Kaminer method. They were resistant to the action of hydrochloric acid, did not ferment sorbite, and were agglutinated by homologous serum of cancer patients or animals. Normal strains reacted in an opposite fashion in each of the above tests, and did not
develop the properties of cancer strains when made acid-resistant by serial passage in
media containing increasing concentrations of lactic acid.

The differences between the intestinal flora of normal mice and those bearing the
Ehrlich adenocarcinoma were not as pronounced as the differences in man and the
rabbit.

MILTON J. EISEN

Biological Importance of Cachexia in Cancer, S. Konsuloff. Die biologische Bedeu-

Within certain limits tumor growth depends upon growth-controlling substances of
the body. Such substances are probably not specific, but malignant tissue is char-
acterized by a greater affinity for them than normal tissue. After excessive intake
of food more pronounced increase in tumor weight than body weight was observed in
mice bearing the Ehrlich adenocarcinoma. In undernutrition the tumor was also more
readily affected than the body in general.

The author believes that oxycholesterol is an important growth-controlling substance.
Normal blood emits mitogenetic rays that are growth-stimulating. These decrease in
hunger and increase with excessive nutrition. They disappear after the development
of a malignant tumor but are then strongly present in the neoplastic tissue. Oxychole-
sterol is in some fashion associated with these mitogenetic rays. It has a much greater
affinity for tumor tissue than for normal tissues and is used by the former to a much
greater degree. The consequent depletion of the amount in the blood stream calls
forth increased production, which in turn favors tumor growth. [That there are any
mitogenetic rays is very doubtful.—Ed.] MILTON J. EISEN

Sarcoma of the Soft Tissue, I. I. Kaplan and S. Rubenfeld. Am. J. Roentgenol. 37:
53-69, 1937.

This report is based on a series of 74 cases of sarcoma of the soft tissues, representing
48.7 per cent of the sarcomas seen in a period of ten years in the Radiation Therapy
Service at Bellevue Hospital (New York). This group includes only those tumors
originating in the skin, muscle, or fascial structures which manifested themselves on, or
eventually infiltrated through, the skin. Ten of the patients, or 13 per cent, gave a
history of trauma. More than half the cases occurred in the third to the fifth decade,
and 70 per cent of the patients were males. The lower extremity was the most frequent
site, accounting for 41 per cent of the cases. The interval between the appearance of
the tumor and hospital admission varied from less than a month to twenty years, but in
44 per cent of the cases exceeded a year. The predominant pathologic types were
spindle-cell sarcoma, 22 cases; melanosarcoma, 19 cases; fibrosarcoma, 16 cases. In the
absence of gross and microscopic evidence of nerve structures or nerve-producing struc-
tures the authors are unwilling to assign the fibrosarcoma and spindle-cell sarcomas to
the neurogenic group.

Treatment was surgical, supplemented in most cases by some form of radiotherapy.
Recurrences were frequent, however. Because of difficulties of obtaining adequate
follow-up, the authors do not attempt to determine the cure rate, though they give
such results as were available.

Melanosarcoma resulted fatally earlier than the others. Patients with fibrosarcoma,
although eventually succumbing, lived longest. Amputation was performed in too
few cases to warrant arriving at a conclusion as to its value.

Spindle-cell sarcoma, mixed-cell sarcoma, and melanosarcoma are prone to produce
metastases; melanosarcoma disseminates generally throughout the body and especially
to the liver and neighboring lymph nodes; spindle-cell sarcoma tends to metastasize
to the lungs and elsewhere; mixed-cell sarcoma usually metastasizes to the lungs.

The illustrations include two photomicrographs. A bibliography is appended.

Symmetrical Lipomatosis, B. Luchetta. Lipomatosis simétrica, Bol. Inst. de med.
exper. para el estud. y trat. del cáncer 14: 97-105, 1937.

Among 67,154 patients admitted to the Institute of Experimental Medicine, 8 or
0.012 per cent were found to have symmetrical lipomatosis. These cases are briefly
reported.

Seaton Sailer

Three cases are recorded of symmetrical nodular lipomas in soldiers. In the first case the location was on the arms, in the second in the inguinal region, and in the third on the thorax and abdomen. The tumors in the first two cases, which were proved by biopsy, were painful to pressure; in the third case, on which no biopsy was done, they were insensitive. There are no illustrations.

EDWARD HERBERT, JR.


In the course of a study of the effect of histamine on the lymph vessels it was found that following subcutaneous injection many cases of pedunculated soft fibroma showed a red streak resembling lymphangitis running from the base of the tumor toward the regional nodes. This reaction does not take place if the pedicle of the tumor is ligated. Histologically the fibromas showing this reaction contained many more lymph vessels than the ones which did not show it. There are no illustrations.

EDWARD HERBERT, JR.


This is a report of a melanin-producing neuro-epithelioma of the lumbar region in a man of thirty-five with extension to and complete destruction of the spinous and transverse processes and laminae of the second and third lumbar vertebrae, partial destruction of the body of the third lumbar vertebra, and beginning destruction of the spinous processes of the fourth and fifth lumbar vertebrae. No skin lesions were discovered. The tumor was removed and postoperative x-ray therapy was given, but the late result is not recorded. A roentgenogram, photograph of the tumor, and photomicrograph are included. There are five references.


This is an incomplete report of an umbilical tumor believed to be secondary to an abdominal neoplasm, though no biopsy was performed. One photograph is included.

EDWARD HERBERT, JR.

Nodular Granulomatosis of the Head Cured by Radiotherapy but Recurring after Three Years and Causing Death, L. M. PAUTRIER AND F. WORINGER. Granulomatose en tumeurs de la face, du cuir chevelu, guérison par les rayons X; recidive trois ans plus tard avec des tumeurs envahissant toute la face, tout le cuir chevelu, la nuque, la poitrine et entraînant la mort, Bull. Soc. franç. de dermat. et syph. 44: 1549–1565, 1937.

A man sixty-two years of age had several subcutaneous tumors of the face and scalp, biopsy of which showed a polymorphous granulomatous structure which could not be definitely diagnosed. Radiotherapy brought about a rapid disappearance of the tumors and the patient remained well for three years, at the end of which time there was a recurrence, spreading to the chest. This time radiotherapy was ineffective and death occurred shortly afterward. Autopsy showed widespread metastases. Histologically the recurrent tumors were composed of a single type of undifferentiated round cell, so that the only diagnosis possible was round-cell sarcoma. Three photographs and two photomicrographs are included.

With the aid of a modification of the Lehmann-Facius serum reaction (Ztschr. f. Krebsforsch. 44: 455, 1936. Abst. in Am. J. Cancer 31: 311, 1937) a positive diagnosis of cancer in various sites at an early stage was made in 23 of 26 patients. In transplantable rat or chicken sarcoma and rat carcinoma the reaction was positive approximately at the time of beginning growth of the transplant. In the case of a rabbit sarcoma, although indication of successful transplantation was first observed in 3 of 7 animals on the tenth day, the serum reaction was positive in 4 on the seventh day. Controls were negative. In a later stage of tumor development the reaction was positive in 100 per cent of the animals, but a negative reaction was often obtained in man and in animals in the terminal stages of malignancy.


The results obtained with the authors modification of the Lehmann-Facius serum test (Ztschr. f. Krebsforsch. 44: 455, 1936. Abst. in Am. J. Cancer 31: 311, 1937) for cancer are recorded. Of 335 cases of carcinoma 313 (93.5 per cent) gave a positive Type I reaction, 3 a positive Type II (sarcoma) reaction, and 19 a Type III (negative) reaction. A positive Type II reaction was obtained in 12 (92 per cent) of 13 cases of sarcoma. There was a negative reaction (Type III) in 14 (64 per cent) of 22 cases of benign epithelial tumors. The 13 cases of benign connective-tissue tumors were all negative. As control the sera of 1016 patients with non-neoplastic diseases were tested. Negative reactions were obtained in 968 (96.8 per cent), 34 reacted positively for carcinoma, and 14 reacted for sarcoma.


This is a brief résumé of serologic methods for cancer diagnosis including the author’s experience with Brossa’s test (Brossa, Bozzolo, and Lombardi: Minerva med. 6: 1060, 1926). This is based on the instability of blood colloids and the formation of a flocculate when blood dissolved in distilled water plus congo red is placed in contact with an electrolyte, as a 2 per cent solution of quinine hydrochloride. In 103 cases in which the test was applied 36 were proved to be malignant tumors and these all yielded positive reactions. Of the 67 non-tumor cases, 65.67 per cent gave a positive reaction. There is a short discussion concerning the lack of specificity of the test. A bibliography is appended.


The lactogelification reaction of Kopaczewski obtained by the coagulating effect of lactic acid (see Ztschr. f. Krebsforsch. 42: 262, 1935. Abst. in Am. J. Cancer 26: 412, 1936) did not prove to be of value as an aid in the diagnosis of cancer.


Aron discusses technical details in carrying out the flocculation reaction, which, as previously described (Compt. rend. Soc. de biol. 124: 370, and 373, 1937. Abst. in Am.

L. FOULDS


This is a detailed review of the theoretical and applied aspects of the studies developed principally by the Viennese school from the original observations of Freund and Kaminer on the lysis of malignant cells by normal serum and the absence of this phenomenon in cancer serum. There is an extensive bibliography.

MILTON J. EISEN


The authors record here a continuation of studies previously reported in Ztschr. f. Krebsforsch. 44: 345, 1936 (Abst. in Am. J. Cancer 33: 135, 1937).

Cancer cells, as used in the Freund-Kaminer cytolytic reaction, are most stable when suspended in a solution containing 0.6 per cent sodium chloride and 1 per cent dibasic sodium phosphate (0.13 molar). The authors found that 0.75 per cent sodium chloride (0.128 molar) was equally effective as a suspending fluid. The age of the emulsions proved to be of importance. Fresh emulsions contained many cells with poor resistance, which consequently were easily lysed. The cells that remain intact after several months are of uniform stability, and the resistance is such as to withstand the action of distilled water. It is of importance, therefore, in recording the effect of normal or cancer sera to know the exact quality of the cells employed. A designation of absolute percentages on a variable material may be a source of inaccuracy. An artificial aging of the cells was obtained by incubation at 37° C. for twenty-four hours.

The stability of the cells was greatest when the molar concentration of the suspending medium and the fluid examined were equal. If the former is M. 0.154 (molar concentration of human serum), practically no lysis occurs after the addition of either normal or cancer serum. The lytic process in the Freund-Kaminer test, therefore, is not comparable to the action of a ferment or lysin, for in such a case it would not cease after this relatively slight change in concentration. The absence of lysis in a suspending fluid at M. 0.13 on the addition of cancer serum is thought to depend upon the action of a specific protective agent in such serum.

The ionic distribution in the suspending fluid is also of great importance. It must differ from that in serum in order to obtain lysis. No lysis occurred on using Tyrode solution corrected to M. 0.128 with either normal or cancer serum, since the ionic composition of Tyrode solution and serum is similar.

Cells of ascites cancer of the mouse were more sensitive than human cells to differences in the salt concentration and the ionic composition of the suspending fluids. As with human cells, Tyrode solution of corrected concentration proved unsuitable as a suspending fluid.

MILTON J. EISEN


This paper records a continuation of previous studies (Ztschr. f. Krebsforsch. 44: 467, 1936. Abst. in Am. J. Cancer 33: 135, 1938) on synthetic cholesterin butyrate, believed by the author to be identical with the substance in the serum of cancer patients which inhibits the lysis of malignant cells by normal serum in the Freund-Kaminer test. A number of involved chemical processes are described and discussed.

The butyrate is inactive when pyridine is used in its synthesis. Pyridine may function as an oxygen donator, and the inactivating agent is most probably an oxidation product of a sterol. On performing the synthesis in an atmosphere of nitrogen no inactivator of the cholesterin ester is formed. An inactivator with similar properties

There is an extensive bibliography.
may be obtained after heating normal serum to 56–58° C., possibly as a result of the oxidation of free sterols with the aid of catalytic ferments. Cancer serum does not give rise to an inactivator except when exposed to the action of radium or roentgen rays. Further proof of the sterol nature of the substance in question is its solubility in ether. After the addition of ergosterol to the serum residue an inactivator may again be produced. Active cholesterin butyrate may be synthesized by the pyridine method when ergosterol-free cholesterin is employed. This ester, free from ergosterol impurities, is not inactivated by radium. Further, the inactivator can be synthesized by the oxidation of ergosterol in the presence of pyridine.

The author believes that the experiments described justify a theory that a disturbance in the processes of oxidation catalysis exists in the serum of cancer patients. This may bear a relationship to other abnormalities of the oxygen metabolism that have been observed in malignant disease.

Milton J. Eisen


Cholesterin butyrate, the lysis-inhibiting factor in cancer serum, was removed by ether extraction. After incubation for twenty-four hours at 38° C. of the ether residue to which cholesterin and glucose were added the ester was reformed. The authors postulate a synthesis in the serum by means of the action of a ferment on cholesterin and butyric acid, which in an unknown way may previously be formed from glucose. No formation of cholesterin butyrate could be demonstrated in normal serum.

Milton J. Eisen


So-called carcinomatous intestinal acid was extracted according to the method of Freund and Kaminer from a growth on milk of B. coli isolated from the intestinal tract of a cancer patient. The first ether-soluble extract was purified by the addition of saturated magnesium acetate solution to remove a large portion of the fatty acids. An ether extract of the filtrate contained concentrated carcinoma acid as demonstrated by the characteristic properties—protective action on carcinoma cells in presence of normal blood serum, stabilization of colloidal gold solution, stimulation of growth of oat germs. The concentrate did not contain, however, the substance that produces the skin reaction in cancer patients after intracutaneous injection of the original extract.

Further concentration was obtained by means of ultraviolet adsorption analysis, with magnesium oxide as the adsorbing agent. The active substance could be removed from the adsorbent by washing with dilute phosphoric acid and ether. The concentrate is free from nitrogen, phosphorus, cholesterol and bile acids, and has the properties of a fatty acid with an iodine number of 18.4. It is destroyed by alkalies, alcohol, or boiling for five minutes in the presence of water. It forms a stable solution in ether or alcohol. It may be heated to 100° C. for five minutes in the absence of solvents or the presence of 0.1 per cent acetic acid without impairing its activity.

Milton J. Eisen


The properties of the intestinal acid produced in a milk culture by strains of B. coli obtained from the intestinal canal of rabbits bearing the Brown-Pearce tumor and mice with the Ehrlich adenocarcinoma were investigated. Like acid of human origin [see preceding abstract], the animal products exerted a protective action on carcinoma cells when these were exposed to the lytic power of normal blood serum. This effect was non-specific; cells of different species were protected by homologous and heterologous
acids. The animal material stabilized a colloidal gold solution and stimulated the growth of oat germs. In contrast to the positive intracutaneous reaction obtained in the human cancer patient, no definite effect was obtained in animals after the injection of human or species-specific intestinal acid, nor was there a reaction in man following the use of animal material. Purification and concentration of the rabbit and mouse acids could be accomplished by using the methods previously described by Lustig (Abst. above).

Milton J. Eisen


When lipomata are wholly or partially surrounded by non-fatty soft tissue, they cast sharply defined roentgen shadows of decreased density, which allow them to be differentiated from other types of soft tissue neoplasm and from collections of body fluids. This finding is particularly helpful in the diagnosis of lipomata situated beneath the deep fascia, where they are likely to be confused with sarcoma.

Three cases are recorded in which the diagnosis was made roentgenographically and one in which it was missed because of failure to appreciate the significance of the area of decreased density.

The author gives the procedure for obtaining the molar mass absorption coefficient of a compound and includes a table showing the increase in the differentiation between absorption of fat and of water with increase in wavelength and in tissue thickness. Roentgenograms are reproduced and there is a bibliography.


It cannot be emphasized too strongly that complete clinical, roentgenographic, gross and microscopic pathologic information should be obtained before tendering an opinion as to prognosis and treatment of cancer. Ten photomicrographs are included.


A brief discussion of Broders' system of tumor grading.


The authors have used a 200 mc. radon pack in the treatment of neoplastic lesions of the skin, bone, oral cavity and breast. Four 50 mc. tubes with 2 mm. platinum filtration are placed on a block of balsa wood 7 cm. thick. With this applicator the erythema dose is estimated at approximately 9,500 mg. hours. It may be used after previous roentgen therapy but overdosage to the skin must be avoided. Thirty-nine cases have been treated and palliation has been obtained in some instances. Photographs of the applicator and diagrams, photographs of some patients and a short bibliography are given.


The authors describe a radium element seed which they have found satisfactory in certain carcinomas of the lip, oral commissure, cheek, eyelid, nares, antrum, auditory canal, anus, parotid, skin, metastatic carcinoma in lymph nodes and in some benign tumors, e.g., hemangioma.

This seed is really a tiny tube with an eyelet of smooth bore at one extremity through which the thread for removal is inserted. The dimensions are as follows: overall or external length, 7.50 mm.; active or internal length, 3.27 mm., external diameter, 1.20 mm. The filtration or wall-thickness is 0.3 mm. of platinum (10 per cent iridium-platinum).

Roffo and his associates previously reported on the treatment of malignant tumors with x-rays by the Chaoul technic and on the effect of contact irradiation on normal and neoplastic tissues in vitro (Absts. in Am. J. Cancer 32: 292, 297, 1938). They now discuss the effect of contact irradiation through organic filters. The results showed a diminution in the development of tumor growth in vitro up to complete arrest. Physiologic saline, distilled water, human serum, human skin, ox muscle and bacon were used as filters. The changes could not be fully explained by the filter action of these substances but were probably due, the authors believe, to secondary rays resulting from the interposition of air and a metal-free substance between the tube and the tissue cultures.


Irradiation of mouse tumors (squamous carcinoma 2146) with seven small doses given in thirty minutes every twenty-four hours produced regression in a greater proportion of animals than did the same amount of radiation, measured in r units, applied in a single exposure of 210 minutes. This is attributed to the fact that the irradiation was so spaced as to catch the tumors during periods of growth as measured by mitosis.


Corpuscular rays are formed in a strong electrical field by a process of ionization at low pressure. The author refers to physical studies on this type of radiation. Observations were made of the effect of the negatively charged electrons on various disease processes. The rays did not exert a harmful effect on normal individuals. A favorable influence on chronic inflammation was noted. Definite palliation and regression were brought about in inoperable cancer with metastases in 6 patients. Especially noteworthy is a case of mammary cancer with vertebral metastases, in which cessation of tumor growth occurred. An esophageal cancer regressed sufficiently to permit normal deglutition and a gain in weight. The paper is a preliminary report and contains a discussion on atomic electrical disturbances in tissues as a possible cause of disease, and the method of action of the so-called corpuscular rays.

Milton J. Eisen


This is a practical paper on the care of the cancer patient, considering mental hygiene, physical hygiene and general care, pain, and irradiation.


Goldfeder studied the effects of the Schmidt vaccine, ensol, and Jacobs' hormone extract on malignant tumor tissue grown in vitro and in vivo. No inhibitory effects were obtained with any of these preparations. Photomicrographs of the tissue cultures are included.

Milton J. Eisen


Practically all types of tumor occur in the region of the ear. Superficial lesions involving the external ear can usually be cured by electrocoagulation followed by irradiation. Tumors of the pinna are surrounded by a line of desiccation produced by the
high-frequency current. A specimen is then removed for examination and the remaining lesion destroyed, including a portion of cartilage. If examination shows a basal-cell tumor an erythema dose is sufficient but if the lesion is of the squamous or squamous-basal-cell type high-voltage roentgen treatment should be given to the neighboring lymphatics, treatment being carried out over a period of eighteen to twenty-four days, to the point of producing a definite epithelitis.

For tumors involving the region of the parotid or the space below or behind the auricle surface applications of radium, filtered through 2 mm. platinum, at a distance of 2 to 4 cm. are recommended, treatment being continued for about three weeks or long enough to produce destruction of the epidermal layers. Many of these tumors are recurrences and in such cases old fibrous scar tissue may require destruction by electrocoagulation.

Because of the traumatism incident to biopsy diagnosis of cancer of the external auditory meatus it is regarded as advisable when taking the specimen to destroy the remaining disease by electrodessication or to curette the diseased tissue away and to introduce a radium capsule. This should be supplemented by external irradiation.

For cancer of the middle ear and mastoid highly filtered radium or roentgen therapy is indicated.

In a series of 134 primary cases the authors had 88 five-year survivals. Of 46 patients with recurrent disease, 17 lived five years or more.

Photographs of patients before and after treatment are included and there is a bibliography.

THE SKIN

Cholesterol in the Skin of Negroes and Its Relation to Cutaneous Cancer, A. H. ROFFO.

La colesterina de la piel de los negros y su relación con el cáncer cutáneo, Bol. Inst. de med. exper. para el estud. y trat. del cáncer 14: 5–18, 1937.

The distribution of cutaneous cancers has been linked not only to the local action of ultraviolet rays but also to the amount of pigmentation contained in the skin. Thus those races with deeply pigmented skins are more protected against changes induced by solar radiation than pure white races. A number of skin biopsies taken from the face and abdomen of negroes, mulattoes and whites showed that in the negroes there is little difference in the cholesterol content of exposed and unexposed skin. The difference is slightly greater in mulattoes and is pronounced in the white man. The amount of cholesterol diminishes in relation to the pigmentation of the skin.


Among a total of 65,000 hospital admissions one case of xeroderma pigmentosum was observed. This occurred in a two-year-old girl having fair skin, blue eyes, and red hair, the offspring of consanguineous parents. Persons of this habitus are more susceptible to precancerous and malignant changes of the skin brought on by exposure to ultraviolet light. Some of the patient’s lesions were cicatrized by radium. Others showed improvement following isolation from the action of the sun’s rays.


The incidence of benign tumors of the skin and internal organs was studied in routine necropsy material consisting of 25 males and 25 females over fifty years of age. Tumors were present in all subjects. Seven had three to five growths, 22 had six to thirty, and 21 had very numerous tumors. Skin tumors were most frequent—nevus, angioma, senile warts—followed by leukoplakia of the esophagus, which is considered as a new growth, thyroid adenoma, intestinal polyp, and fibroma of the kidney. Other types
were less frequent. With the exception of nevus, the number of tumors increased proportionally with the age of the subject. Certain relationships in the incidence of different tumors were apparent. Nevi were present in the 17 cases without senile warts; all 9 subjects without nevi had senile warts; in 24 cases the conditions coexisted. The number of skin tumors and the number of internal tumors were roughly parallel, with the exception that "numerous" in one localization corresponded to an incidence of six to twenty growths in the other.

The number of associated malignant lesions was surprisingly high, especially as the author states that he used routine material. There were 23 carcinomata, for which the type and localization are not given, and one hypernephroma. Thus, 48 per cent of the patients had malignant tumors in addition to their benign growths. Numerous benign tumors were generally present in the cases of malignancy. No definite relationship between the incidence of senile warts and the occurrence of cancer in other areas could be detected.

A bibliography is included.


This paper is an analysis of 193 angiomas in 155 individuals. Of the total number, 14.5 per cent were stellate angiomas and all these were situated on the face or neck; 38.4 per cent were flat angiomas, of which nine-tenths occurred on the face and neck; 35.2 per cent were tuberous angiomas, found in order of frequency on the forehead, thorax, and cheeks. The remaining 11.9 per cent were of the cavernous type and their sites of predilection were the arms and face. The stellate type was equally divided among male and female patients; the other three types occurred twice as often in females as in males. In only 3.2 per cent of the cases were there angiomas in the immediate members of the patient's family. Only 25 per cent of the patients had multiple tumors and these were usually distributed in the region supplied by a single cranial or vertebral nerve root. Heredity did not seem to play an etiological rôle, but Touraine states that 26 per cent of the patients had congenital syphilis. His analysis of these cases is not particularly convincing, however, as the disease was proved in only 9 cases. There are no illustrations.


Histologic studies on serial sections of angiomas showed that there are numerous nerve fibers throughout the tumors that are arranged perivascularly. In a few places are ganglion cells, occurring singly or in small groups, from which the nerve fibers originate. This means that angiomas have their own special nerve centers.

In further studies an angioma was divided into fragments about 2 mm. in diameter and each fragment was cultured for a week, after which serial sections were made. Most of the cultures showed no angiomatic characteristics and grew as undifferentiated fibrous tissue. In these cultures wallerian degeneration of the nerve fibers was seen. In a few cases, however, the cultures retained their angiomatic character, and it was found that these pieces contained ganglion cells. In other words, as long as the special nerve centers are present the tumor grows as an angioma; severed from these nerve cells it no longer conserves its structure but becomes undifferentiated. There are no illustrations.


It is maintained that the best treatment for the large congenital angiomas is the use of the grenz (or Bucky) rays. From six to eight doses are given at intervals of four months, each dose being enough to cause a violent inflammatory reaction with exfolia-
tion. A perfect result is not to be expected, but great improvement from the cosmetic point of view can be obtained. There are no illustrations.  


A woman thirty-four years of age had extensive congenital cutaneous angiomas involving most of the face, the entire back, and all surfaces of both lower extremities. Arising from these were several nodular angiomas of more recent development. Histologically these were typical cavernous hemangiomas. Radiographs of the skull showed vascular tumors involving the parietal and occipital bones, although the patient had no cerebral symptoms. There are no illustrations.  


A man twenty-three years of age had numerous hemorrhagic lymphangiomas on the buttocks as well as a marked vascular disturbance in the right leg, scrotum, and penis, consisting of very large groups of varicosities and superficial cutaneous angiomas. The condition resembled the Parkes-Weber syndrome. Two photographs are included.


A pigmented basal-cell epithelioma grossly resembling a nevocarcinoma was removed by electrocoagulation from the temporal region of a man thirty-six years of age. There are no illustrations.


A man sixty-nine years of age who gave a history of an inadequately treated syphilitic infection twenty-five years previously, and still had a strongly positive Wassermann reaction, developed a tumor 1.5 cm. in diameter on the left temple. It was blackish gray in color and had been growing slowly for four years. On excision it was found to be a pigmented basal-cell epithelioma. Touraine again insists on the connection between previous syphilitic infection and the occurrence of tumors. There are no illustrations.


Touraine, who has long insisted on the connection between syphilis and cancer, now reports a case of microscopically proved squamous epithelioma of the inner angle of the eye in a syphilitic man forty-nine years of age, which healed completely in less than two months under intensive mercury and arsenic therapy. No other treatment was given. There are no illustrations.


This is a report of a squamous-cell epithelioma of the chin in a woman seventy-six years of age. It is accompanied by one photograph.
The skin


A description is given of a lesion measuring 12 x 4 cm. which had been growing for ten years on the anterior chest wall of a man fifty-four years of age. Clinically it resembled Paget's disease and was partially ulcerated, the nipple having been entirely destroyed. Biopsy proved it to be a basal-cell epithelioma. The treatment and follow-up are not mentioned. There are no illustrations.

Edward Herbert, Jr.


A tumor of the left nostril in a man forty-nine years of age was considered to be of a sarcomatous type simply because clinically it resembled a sarcoma more than an epithelioma. Treatment and follow-up are not recorded. There are no illustrations.

Edward Herbert, Jr.


This is a report of an ulcerated tumor on the leg of a woman fifty-four years of age. Biopsy showed an epithelioma intermediate between the basal-cell and squamous-cell types. There are no illustrations.

Edward Herbert, Jr.


This is a single case report, apparently without microscopic study, of multiple tumors on the face and arms of a woman eighty-five years of age who also showed lesions typical of xeroderma pigmentosum. No follow-up is given. One photograph is included.

Edward Herbert, Jr.


A boy three years of age had a tumor of a year's duration in the left preauricular region. There was no preexisting nevus. Biopsy showed nevocarcinoma without pigment. Electrocoagulation was done and six months later there was no recurrence. There are no illustrations.

Edward Herbert, Jr.


A woman twenty-seven years of age had a lightly pigmented area measuring 12 x 6 cm. in the right hypogastrium. It had been present for fifteen years. Recently there had developed in this area numerous fibromatous nodules and two pedunculated tumors resembling molluscum pendulum. Elsewhere on the body there were small pigmented flecks. No biopsy was taken but it was believed that this represented an atypical form of von Recklinghausen's disease. One photograph is included.

Edward Herbert, Jr.


A man of twenty-nine years had an ulcerated tumor on the right leg surrounded by small pedunculated red excrescences resembling nevi. Biopsy showed the large tumor

Numerous sebaceous adenomas had been present since birth on the face of a girl ten years of age who also was an epileptic and showed mental defects. Two photographs are included but no photomicrographs.

Symmetrical Sebaceous Adenomas with Late Appearance at the Age of Thirty-four Years, Gougerot and Burnier. Adénomes sébacés symétriques d'apparition tardive à 34 ans. Bull. Soc. franç. de dermat. et syph. 44: 262, 1937.

Symmetrical sebaceous adenomas of the face usually appear during childhood. A case is reported here in which they first appeared at the age of thirty-four.


This is a report of a microscopically proved syringocystadenoma of the right lumbar region, about 1 cm. in diameter, in a woman forty-two years of age. The tumor had been present for at least twenty years. There are no illustrations.


A man thirty-nine years of age had for two months successive and continuous crops of purpuric papules on all four extremities, developing in two or three days and then disappearing or becoming necrotic and crusted. He also had several bullae on the thighs, large thickened red plaques on the back of both wrists, and an erythematous stomatitis. All of these lesions were extremely tender on pressure, and the patient experienced severe spontaneous pains in the extremities. Biopsy of one of the wrist lesions showed it to be a Kaposi sarcoma and radiotherapy was immediately instituted. No follow-up is given. There are no illustrations.


A man fifty-three years of age had three grossly identical tumors on the hip, flank, and knee, present for twenty years. Eighteen months before admission he suffered a severe trauma of the knee, followed by ulceration and rapid growth of the tumor at that site. Radium was applied without benefit. Biopsy showed malignant histiocytoma. The other two tumors were removed and were found to be microscopically identical benign fibromas. No follow-up is given and there are no illustrations.


In a man forty-five years of age there appeared simultaneously twelve subcutaneous tumors on the face, scalp, and trunk. Biopsy showed them to be neoplastic and they were believed to be reticulosarcomas derived from the reticulocytes of the skin. Two
years before this the patient had had a small tumor of the prepuce which was excised but not examined microscopically. There are no illustrations.

Edward Herbert, Jr.


Two cases are reported of localized lymphoid nodules examined histologically. The first patient was a forty-two-year-old man with several nodules on the face. The second was a boy of fifteen with a single tumor on the lobe of the ear. The first case was cured by radiotherapy, the second by arsenical treatment. Microscopically the lesions were composed of lymphoid cells with areas similar to the germinal centers of lymph nodes. In places there was an infiltration of polymorphonuclear leukocytes, eosinophils, and plasma cells.

These tumors are clinically benign and respond readily to radiotherapy or arsenical treatment. Most of the cases reported have occurred on the face, ears, or scrotum. Whether the lesions are true tumors, hyperplasias, or granulomas, is debatable. Miescher considers them granulomas, thinks that they constitute a definite disease entity, and proposes the name benign lymphadenoid granuloma. Four photographs, 5 photomicrographs, and a bibliography are included.

Edward Herbert, Jr.


Numerous subcutaneous benign lymphomas appeared over a period of nine months on the legs and arms of a woman sixty-four years of age. They were diagnosed by biopsy. The blood picture was normal and there was no lymphadenopathy. No treatment or follow-up is mentioned, nor are there any illustrations.

Edward Herbert, Jr.


A woman sixty-three years of age had a subcutaneous tumor on the dorsum of the right foot which had been growing slowly for seven years and had recently become ulcerated. There were no enlarged lymph nodes and the blood count was normal. Biopsy showed a diffuse subcutaneous infiltration consisting largely of mature lymphocytes with a few lymphoblasts. No mitoses or atypical forms were seen. The tumor was considered to be a benign lymphoma derived from embryonic remnants of hematopoietic tissue. No treatment or follow-up is mentioned, and there are no illustrations.

Edward Herbert, Jr.


A forty-four-year-old man had a generalized pruritus and jaundice, followed five months later by the appearance of xanthomatous nodules on the elbows, knees, and ears, at the angles of the mouth, on the palms, back, buttocks, and arms. Three months after this, a characteristic zoster lesion appeared on the left side of the chest along the distribution of the seventh, eighth, and ninth thoracic nerves, and about a month later this was the site of xanthomatous change. Blood studies showed extreme hypercholesteremia—1020 mg. per 100 c.c. on one occasion. Because of possible biliary obstruction an exploratory operation was undertaken and the patient died on the operating table. At necropsy severe biliary cirrhosis was found, which explained the hypercholesteremia. There was narrowing at the papilla of Vater and this was found to be the site of an adenocarcinoma. Xanthomatous deposits occurred on the splenic and hepatic capsules, in the intima of the great vessels of the neck, and in the muscular tunic of the intestine. The lipids of the xanthoma cells were preeminently neutral fats.
and not the cholesterol esters suggested by the hypercholesteremia and emphasized in the older literature.

The literature of scar xanthoma is reviewed as are the cases of xanthoma in which operation has been attempted. Photomicrographs are included and there is an ample bibliography.

THE EYE


The author describes a tumor removed from the eye of a woman of forty-six. It was composed of interlacing bundles of closely packed elongated spindle-shaped cells with granular eosinophilic cytoplasm and long oval nuclei. Differential staining by the gold-impregnation method revealed the presence of the characteristic myoglia fibrils, which warrants a diagnosis of leiomyoma of the iris.

Verhoeff in 1923 (Arch. Ophth. 52: 132, 1923) reported a case of leiomyoma of the iris, and reviewed the literature. Two cases have since been recorded, but in neither of these was the diagnosis confirmed by demonstration of the characteristic myoglia fibrils. Clinically the tumor cannot be differentiated from sarcoma.

Photomicrographs and a colored figure showing ectropion of the uvea are included. References are appended.


An example is recorded of neurofibromatous involvement of the right upper eyelid, zygomatic and temporal regions, lacrimal gland, apex of the orbit, ciliary body, choroid, sclera, and optic nerve. X-ray findings pointed to probable involvement of the hypophysis and structures in the middle fossa of the right side of the skull. It is probable that the chiasm and optic tract were not seriously involved, for the field of vision of the left eye was not impaired. The patient, who was first seen by the author at the age of six and a half, had coffee-colored spots on the body. The eye was eventually enucleated. Photomicrographs and a bibliography are included.

THE BREAST


From 1910 to 1933 there were operated on at the Mayo Clinic 4,628 patients with carcinoma of the breast, of whom 4,506 were traced three years or more. In 92 patients the disease was associated with pregnancy or lactation. Of this group 78 or 84.8 per cent had axillary metastases at the time of operation as compared to 63.8 per cent of the entire series. The survival rates for these patients were as follows: with axillary metastases: 17.3 per cent three years, 5.7 per cent four years, 3.4 per cent ten years, none fifteen years; without axillary metastases: 61.5 per cent three years, 61.5 per cent five years, 40 per cent ten years, 25 per cent fifteen years. [Like all the author’s figures these are based on traced cases only: the three-year results on patients traced for three years, the five-year results on patients traced for five years, etc.]

The grade of malignancy in tumors occurring in lactation and pregnancy was found to be generally high. None were of Grade I and 59.8 per cent were of grade 4. Of the 11 patients who were pregnant at the time of operation, 4 miscarried and 7 went to term. A study was also made of 55 patients who bore children after amputation of the breast for carcinoma. Of this group, 27 had a single livebirth; 10 patients had two livebirths; 2 patients had three livebirths; 3 patients had a single stillbirth; 12 patients had a single miscarriage, and 1 patient had two miscarriages.

Thirty-seven of the 42 patients who were delivered at full term after operation were traced for one or more years. Of 16 of these with axillary metastases, 12 lived a year
after the first birth subsequent to operation, and of 21 without axillary metastases, all lived a year. Twenty-four of 31 traced for five years after the birth of the first child following operation were alive, 12 of 18 traced for ten years, and 7 of 12 traced for fifteen years. The final results in this series were actually better than in the entire series of breast carcinomas, but as the author points out these cases in reality constitute a selected group, inasmuch as all patients who give birth to children at full term must have survived operation approximately a year, which eliminates many of the patients with high-grade malignancy. This unintentional selection increases by necessity as the interval increases from the time of operation.


The author's technic of radium implantation for breast cancer has been published elsewhere (Brit. J. Surg. 19: 415, 1932. Abst. in Am. J. Cancer 16: abst. p. 1102, 1932). Here he reports his results. Among 250 patients treated more than three years ago, 85 were in Group I and 83.5 per cent of these survived more than three years; 91 were in Group II, with 51.2 per cent three-year survivals; 74 were in Group III, with 31.4 per cent living three years or longer. The five-year survival rates for the three groups are 71.4, 29.3, and 23.6 per cent. A number of illustrative cases are recorded.


McKittrick studied 96 cases of breast carcinoma treated by interstitial irradiation with radium element according to Keynes' method [see preceding abstract], with special reference to the effect upon the cancer cells in the treated breast and in the lymph nodes. Radium therapy was supplemented in some cases by roentgen irradiation and in some by surgery. Twenty-six operable cancers were treated by radium and in 15, or 60 per cent of these, complete primary regression was obtained while 12 per cent diminished by 50 per cent or more. Of the 15 patients in whom complete regression was obtained, 5 had subsequent amputation of the breast. In 3 of these cancer was present; in 1 no cancer cells were found but there was an extensive radium reaction suggesting that the cancer cells had been destroyed by the treatment. In one cystic mastitis was found. Four of the remaining 10 patients died with recurrence and 2 without recurrence. Of the latter, 2 had metastases in the axilla and neck and 1 cancer in the breast demonstrated at autopsy. Three patients were alive, but only one for more than five years. From these observations it appears that in a so-called operable breast tumor, interstitial irradiation offered an excellent chance of bringing about a complete disappearance of the growth. There would be, however, an almost equal chance that a mass would either persist or reappear and if such did occur it would usually harbor viable cancer cells. Among 41 inoperable cases, 31 per cent showed complete regression, and 38 per cent regression of 50 per cent or more. In this group the result seemed to depend on the size of the tumor as much as upon its radiosensitivity.

In 10 recurrent cases regression was obtained but the result was not markedly better than with roentgen irradiation. The author concludes that the finding of viable cancer cells in surgical and autopsy specimens, the pain in, and fixation of, the pectoral ridge, and the late deformity of the breast after irradiation render this form of treatment less desirable than surgery in cases of primary operable cancer of the breast. In an inoperable cancer occupying no more than one quadrant of the breast it may be the treatment of choice. Large inoperable ulcerating tumors and rapidly growing tumors of the inflammatory type which have shown satisfactory regression following roentgen therapy will receive greater benefit from interstitial irradiation given three to five weeks after the roentgen rays than from subsequent external irradiation, but radium has no advantage over roentgen rays in the management of large massive lesions or in lesions which have shown little response to adequate roentgen therapy.
Interstitial irradiation cannot be depended upon to protect the axilla against metastatic invasion.

The illustrations include 2 photomicrographs.


A detailed histological study of a carcinoma of the breast arising in a milk duct, and a lymph node metastasis. The clinical history is not given. Photomicrographs are reproduced.


A woman fifty-five years of age with a large mammary carcinoma with axillary lymph node involvement developed a cutaneous lesion of the upper half of the breast. It resembled Paget’s disease except that the nipple was not involved, but biopsy showed it to consist of an infiltration of the corium with carcinoma cells. There are no illustrations.


A woman of forty-six years had a right radical mastectomy for a small carcinoma which had not involved the axillary nodes. Seventeen years later there appeared a swelling of the inguinal lymph nodes and numerous subcutaneous tumors distributed over the body. Biopsy showed them to be metastases from the breast carcinoma. One photograph is included.


Mastectomy was performed for a papilloma of the breast, 12 cm. in diameter, that had been present for two years in a woman of fifty-three. A local recurrence was excised nine months later, but the histologic structure was now that of a sarcoma of a mixed spindle-chondro-giant-cell type. Death occurred a month later, and at necropsy sarcoma metastases were found in the chest wall, pleura, and lungs. The author is undecided as to the relationship between the benign epithelial tumor and the later development of the sarcoma. The malignant tumor may have been present, although undiscovered, at the time of the first operation. Photomicrographs are included.


This is a single case report of a carcinoma arising in the upper pectoral region from an aberrant lobe of breast tissue in a woman sixty-nine years of age. The diagnosis was confirmed at operation. One photograph is included.


A white male was admitted to the hospital complaining of itching about the areola of the right breast for four months. This was followed by the formation of a crust and retraction of the nipple. Twenty days prior to admission the axillary nodes became
enlarged and tender and the arm swollen. Examination showed a firm tumor in the right breast with enlarged and indurated nodes in the axilla. The blood Wassermann reaction was positive. Antiluetic treatment was started and one month later a radical mastectomy was performed. Microscopic examination showed the tumor to be an adenocarcinoma with axillary metastases. The patient survived the operation, the wound healed, and radiotherapy was instituted, but no further follow-up is recorded.

S. Sailer

THE ORAL CAVITY AND UPPER RESPIRATORY TRACT


A general discussion of cysts of the jaw arising from the dental tissues. Roentgenograms are included.


A woman twenty-eight years of age with congenital syphilis developed a lesion of the upper lip which was refractory to treatment and which biopsy eventually proved to be a superficial basal-cell epithelioma. There are no illustrations.

Edward Herbert, Jr.


A woman thirty years of age had a microscopically proved squamous epithelioma of the upper lip which was removed surgically. The case was not unusual except for the patient's age. There are no illustrations.

Edward Herbert, Jr.


A man thirty-three years of age, who did not smoke, had a peculiar lesion of the lower lip, which consisted of three separate circular parts arranged like a clover leaf. The surface was gray and white, the base being slightly indurated. The lesion had been present for six months and caused no symptoms. Biopsy showed an atypical picture of hyperkeratosis, dyskeratosis, and acanthosis somewhat resembling Bowen's disease but lacking the typical cells. The diagnosis was early epithelioma on the basis of an atypical precancerous lesion. Electrocoagulation brought about complete healing. There are no illustrations.

Edward Herbert, Jr.


A sixty-two-year-old male had had at the age of thirty a nodule between 1 and 2 cm. in diameter beneath the mucosa of the upper lip, slightly to the left of the mid-line. This showed no apparent growth until fourteen years later, when it enlarged slowly to about 3.5 cm. A few months prior to admission it had become slightly larger. Under local anesthesia a well encapsulated tumor 4 × 3 cm. was removed. Histologically it showed the typical structure of a mixed tumor. There are no illustrations.

Seaton Sailer


Three cases of leukoplakia of the tongue and mucous membranes of the cheek in men thirty-five, thirty-nine and forty-eight years of age are recorded. In the oldest
patient the lesions had been present for ten years and for two months an ulceration had been noted, biopsy of which showed a squamous epithelioma. Each one of these patients had dental crowns and plates and the lesions were in a direct line between two different metals. The theory is that two metals of different electric potential form, with the saliva as a conductor, an electrogalvanic cell with a continuous electric current, the action of which in time gives rise to leukoplakia which may become malignant. [This is no proof of this frequently made assumption.—Ed.] There are no illustrations.

**EDWARD HERBERT, JR.**

**Cancer of the Base of the Tongue with Laryngeal Symptoms in a Syphilitic, E. Tromeur.**


In a man complaining of symptoms suggestive of a laryngeal neoplasm a large tumor of the base of the tongue was found, as well as a severe leukoplakia of the tongue and buccal mucosa. Biopsy showed the tumor to be a squamous epithelioma. The serological tests for syphilis were strongly positive. Radium therapy was followed by marked improvement after two months. [This is probably only a temporary result, as lingual tumors in syphilitics are rarely cured, the reason being that sufficient dosage often causes extensive sloughing.—Ed.] No follow-up is given nor are there any illustrations.

**EDWARD HERBERT, JR.**

**Plasmocytoma of the Tongue, L. Rigoletti.** Plasmocitoma della lingua, Arch. per le sc. med. 61: 600–604, 1936.

A sixty-two-year-old man had a painful, ulcerated tumor of the left side of the tongue. Irritating carious teeth were removed, but the lesion progressed. When excised it measured 3 × 2.2 × 2 cm. and was of a gelatinous transparency. Microscopically it was composed of plasma cells; mitotic figures were numerous. Roentgen irradiation was given, but recurrence was prompt. Two photomicrographs and a bibliography of five references are included.

**ADOLPH MELTZER**

**Granular-cell Myoblastoma of the Tongue, R. Lattes.** Mioblastoma ad elementi granulosi della lingua, Arch. per le sc. med. 61: 590–595, 1936.

In 1926 Abrikossoff (Virchows Arch. f. path. Anat. 260: 215, 1926) described 5 cases of a tumor with granular cells and attributed to it an origin from embryonal muscle cells. Five years later (Virchows Arch. f. path. Anat. 280: 723, 1931) he described 6 additional cases. The author has found about 65 cases in the literature, of which 29 occurred in the tongue. His own patient was a man of forty-nine with a small, benign, painless nodule in his tongue for over a year. Two photomicrographs and a bibliography of 34 papers are included.

**ADOLPH MELTZER**


A man of twenty years had a small tumor removed from the right side of his tongue. It was found microscopically to be a rhabdomyoma with granular degeneration of the cytoplasm of many of the cells. Four photomicrographs are included.

**EDWARD HERBERT, JR.**


A small tumor was removed from the tongue of a man thirty-nine years of age and was seen histologically to be a benign rhabdomyoma with granular cytoplasm. There are no illustrations.

**EDWARD HERBERT, JR.**

A woman sixty-nine years of age had a tumor of the floor of the mouth which had been present for four years. It was removed and was found microscopically to be a typical mixed tumor of the salivary gland type, presumably from the sublingual gland. The report is unillustrated.

Edward Herbert, Jr.


A seventy-five-year-old woman complaining of nasal obstruction was found to have a large tumor filling the right nostril extending back to the choana on the same side. Microscopic examination showed it to be a chordoma. Piraud (Paris Thésis, 1933) reported a total of 115 cases of chordoma, of which 47 were located cranially. Of the latter, 5 were in the pituitary region while 14 appeared in the nasal cavity.

Seaton Sailer


A twelve-year-old boy suffering from repeated attacks of epistaxis and impairment of breathing was found to have a large tumor in the right nasal fossa. This was removed under local anesthesia by the transmaxillonasal route, following a blood transfusion. The tumor, which occupied the entire right nasal fossa and ethmoid region, was an infected hemangiofibroma. Recovery was complete and uneventful. The author calls special attention to the advantages of preliminary transfusion, local anesthesia, and the transmaxillonasal approach.

Seaton Sailer


The author saw three patients suffering from large tumors of the tonsil. Radiotherapy was rejected as being only a palliative measure while electrocoagulation and surgery entailed possible damage to the internal carotid artery. An operation was devised in which the cervical nodes were first dissected away, the external carotid tied off, and finally the internal carotid exposed and denuded. The tonsil was then free to be dissected away with secondary cauterization. The first patient succumbed following operation. The second was treated with radium seeds after mobilization of the carotid and the outcome is not known. In the third case the tonsil was twice attacked after mobilizing the internal carotid, with good results. The patient gained 15 pounds and no trace of the tonsillar lesion remained. The type of tumor is not stated nor the length of survival in the third case.

Seaton Sailer


This is a general discussion on the treatment of laryngeal carcinoma. The author advocates surgery as the method of choice, reporting 25 to 32 per cent of cures by this method. Technical considerations of surgery as well as of preoperative and postoperative irradiation are reviewed.

Seaton Sailer

Granular-cell Myoblastoma (Myoblastoma of Abrikossoff) of the Larynx, A. Bobbio. Mioblastoma ad elementi granulosi (mioblastomioma di Abrikossoff) della laringe, Arch. per le sc. med. 61: 583–589, 1936.

A polyp of the left vocal cord occurred in a man of thirty-three. Biopsy revealed a typical squamous carcinoma involving the epithelium, associated with a myoblastoma. The author tabulates 8 cases, including his own, of myoblastoma involving the vocal
cords. Each of these was benign, but 5 occurred in association with squamous carcinoma of the mucosa. These tumors were first described by Abrikossoff (Virchows Arch. f. path. Anat. 260: 215, 1926; 280: 723, 1931).

Two photomicrographs and a bibliography of 10 papers are included.

ADOLPH MELTZER


Two cases are reported in which the exact nature of the tumor was not established, though the authors favor a diagnosis of atypical spindle-cell carcinoma.

(1) An adult male complained of dysphonia for five months and dyspnea for a month. A hemilaryngectomy was performed and a tumor removed which extended to the inferior border of the thyroid cartilage. Microscopically it showed broad strands of collagenous fibers containing deep-staining spindle cells and occasional large polyhedral cells with prominent nuclei, as well as mitotic figures. The patient was well six months after operation.

(2) A fifty-one-year-old male had a small pedunculated tumor of the anterior commissure appearing to border on the left vocal cord. Histologic section showed a picture similar to that just described, with the addition of broad sheets of structures resembling epithelium.

SEATON SAILER

THORACIC AND INTRATHORACIC TUMORS


In a series of 51 consecutive patients with malignant tumors of the thoracic wall treated intensively by means of roentgen rays, radium, and radon, definite roentgen evidence of post-irradiation changes in the lungs and pleura was found in 12 instances. These changes included pleural thickening, increased lung markings, contraction of the lung, and shifting of the mediastinum. They were believed to be due to a late fibrous tissue reaction following a more acute congestive change, and to be comparable to the irradiation reaction which may occur elsewhere in the body. Acute congestive reactions, as evidenced by pleural effusion soon after the irradiation, were observed in two cases.

The authors were unable to correlate the intensity of the irradiation and the extent of the pulmonary and pleural changes, though in general the latter were most pronounced in patients who received the most intensive therapy. The 12 case histories are included, with roentgenograms of some of the patients. Five references are appended.


This is a lecture delivered before the British Institute of Radiology covering in a general way the subject of lung carcinoma. The author includes one case of columnar-cell adenocarcinoma of the lung not previously reported, in which operation was followed by roentgen therapy through the open wound. The patient was well after more than eight years. A bibliography of 80 references is appended.


A man aged fifty died with a cancer of the left bronchus which had spread to the right bronchus and the mediastinum. The diagnosis of the neoplasm and its extensions was made during life by bronchoscopy and x-ray examination of the esophagus with barium. The authors stress the importance of the different investigations necessary in a patient with suspected bronchial cancer in order to determine operability.

L. Foulds
Myxoma of the Heart with Local Erythropoiesis, J. L. Riopelle. Sur un cas de
myxome du coeur avec érythropoïèse locale (considérations sur l'érythropoïèse et

A large sessile myxoma was found in the left auricle of a woman aged fifty-two. It
contained two kinds of tissue: (1) a polymorphic "myxoid" tissue resembling granula-
tion tissue and (2) an "endotheliomucous" tissue consisting of a network of cells anas-
tomosing with the endothelium of the vessels or on the surface of the growth and a muc-
ous ground substance. There were foci of erythropoiesis in the tumor and in clots
in the left auricle and the left pulmonary arteries. The author thinks that the growth
probably originated as a thrombus and that it was not a true neoplasm.

L. Foulds

Roentgenologic Evidence of Rapidity of Growth in Gastric Carcinoma, Report of a Case,

The author believes that though carcinoma of the stomach may be demonstrated
roentgenographically while it is still resectable, it cannot be discovered by this means
in its really early stages. He records a case in which a roentgenogram taken in March 1935
showed no abnormality. On Nov. 7 of the same year an irregularity of the pyloric end
of the stomach was demonstrated, suggesting a malignant lesion, and sixteen days later
a persistent filling defect with canalization was seen. The three roentgenograms are
reproduced.

Ulcerative Colitis in the Course of Gastric Cancer, E. Liesch. Sulla colite ulcerosa in

Report of a case of associated ulcerative colitis and gastric cancer with peritoneal
and hepatic metastases in a man of fifty-two years. The diagnosis was confirmed by
necropsy.

Milton J. Eisen

Spindle-Cell Sarcoma of the Stomach, A. H. Roffo and A. Gandolfo. Sarcoma
fusocelular del estómago, Bol. Inst. de med. exper. para el estud. y trat. del cáncer
14: 89–95, 1937.

A case of spindle-cell sarcoma is reported, in a forty-four-year-old Italian woman
with a history of gastric disturbances for a year and a half and loss of 15 kilos weight.
Autopsy showed extensive liver metastases, some of which had undergone necrosis, as
well as regional node involvement from an enormous tumor involving both walls of the
stomach. There is a brief general discussion of these tumors with a review of the
literature. Three photomicrographs and two photographs illustrate the report.

Seaton Sailer

Ganglioneuromatous Polyp of the Stomach Wall, G. Bertini. Polipo ganglioneu-
romatoso pendente dalla parete gastrica, Arch. per le sc. med. 61: 566–570, 1936.

A gastric polyp was an incidental finding in a portion of stomach resected for an
ulcer in a sixty-six-year-old patient. The polyp, measuring 3 × 1.5 cm., hung from the
anterior wall close to the midpoint of the lesser curvature. It had an hemangiomatous
appearance but microscopically it proved to be a sympathetic ganglioneuroma.

Sympathetic ganglioneuromata of the abdomen are not rare, but their occurrence
is limited to a few sites. Of 123 collected cases reported in 1933 (Wilmoth, Bertrand,
and Patel: J. de chir. 42: 689, 1933. Abst. in Am. J. Cancer 21: 119, 1934), 62 were in
the abdomen, including 37 retroperitoneal tumors and 16 in the suprarenal area. Only
2 cases involved the intestine: one lay in the hepatic flexure of the colon and one in the
appendix. This is the only gastric case.

Two photomicrographs are reproduced and there is a bibliography of 8 references.

Adolph Meltzer

MacFee reviews 318 consecutive cases of carcinoma of the colon, exclusive of the rectum. In 156 cases the primary tumor was removed, in 162 it was not removed.

In 68 cases removal of the tumor was accomplished by a Paul-Mikulicz procedure, usually with the obstructive modification. The operative (hospital) mortality was 27.9 per cent, all causes included.

In 56 cases resection with immediate aseptic end-to-end or end-to-side anastomosis was carried out. The operative, or hospital, mortality in this group from all causes was 16.1 per cent.

In 32 cases the tumor was resected and the open ends of intestine were united by suture. Gross leakage during the procedure was prevented by suitable clamps. The mortality in this group was 18.8 per cent.

In 99 cases subjected to palliative procedures, the hospital mortality was 45.5 per cent; and among 32 patients who had simple exploration, the hospital mortality was 37.5 per cent. Of 31 patients who had no operation, 32.2 per cent died in the hospital.

This review provides further evidence that an unsatisfactory state exists in regard to the early diagnosis and successful treatment of cancer of the colon. Of 318 patients admitted to the hospital, 162 were inoperable from the outset and 34 died following resection of the tumor. Only 122 or 38.4 per cent left the hospital with any chance of survival. Of this number, 35, or an additional 11 per cent, are known to have succumbed to cancer. The number of possible survivors at the end of a relatively short period is therefore reduced to 27.4 per cent of those originally admitted for treatment.

Illustrations show the various steps in aseptic anastomosis, closely following the method described by Scarf (Ann. Surg. 83: 490, 1926).


An eight-year-old colored girl had symptoms of acute appendicitis. At operation the appendix was found to contain a ganglioneuroma, consisting of ganglion and Schwann cells, confined to the mucosal layer. Like ganglioneuroma in other parts of the body, this tumor is believed to have arisen from the differentiation of misplaced multipotential embryonal neurocytes. The outcome is not stated. Photomicrographs and references are included.

THE BILIARY TRACT


The authors found in the literature only 9 instances of primary carcinoma of the liver with metastases to bone. They record a tenth case in a woman of twenty-nine whose first complaint was pain in the left thigh. At autopsy a primary parenchymal hepatoma was discovered, with metastases in the ribs and the left femur. Extensive search failed to reveal any evidence of pulmonary metastasis. The bone lesions presented all the structures of the normal liver, including cords of cells in double rows, intervening capillaries, and Kupffer cells. The presence of bile in the metastases showed that the function of the liver cells was retained, as has often been observed. Photomicrographs are included and there are references to the other recorded cases.


Extrahepatic metastasis of liver-cell tumors is unusual, having been recorded in only about 20 per cent of cases. In the authors' patient, a man of twenty-five, the primary tumor was in the substance of the right lobe of the liver, the capsule being uninvolved. The entire peritoneal cavity and its contents were studded with metastatic nodules. The diaphragm was completely infiltrated with tumor tissue and there were a few nodules
on the thoracic side of the diaphragmatic dome, under the pleura. Photomicrographs and a gross photograph are included. References are appended.


A series of 14 cases of carcinoma of the ampulla of Vater is recorded. Ten of the patients were men and 4 women. There was an associated choledolithiasis in 3 or 22 per cent. In 1 case the origin was from the ampullary epithelium; 3 cases arose from the peri-ampullary duodenal epithelium, and 1 was thought to originate in either Brunner's glands or in aberrant pancreatic tissue in the peri-ampullary duodenal wall. In the remaining cases the point of origin could not be determined. In 5 cases, or 36 per cent, metastasis was known to have occurred.

Obstructive jaundice is the outstanding clinical feature of carcinoma of the ampulla of Vater. It was present in 13 of the author's 14 cases and was usually of gradual onset and constant. Pain was present in 12 patients and was the first symptom in 10. Loss of weight, anorexia, vomiting, and diarrhea were also observed. Enlargement of the gallbladder and liver were of frequent occurrence. In 9 of 11 cases in which the stools were examined there was evidence of occult blood. Two patients died of hemorrhage from the tumor. Anemia is a common finding.

Roentgenography was done in 10 of the author's cases, and in 8 showed some abnormality pointing to a lesion in the second portion of the duodenum. This, together with persistent occult blood in the stools and anemia should suggest the diagnosis and aid in the differentiation from carcinoma of the head of the pancreas and from carcinoma of the common bile ducts, which are also associated with a palpable gallbladder.

Treatment in this series was palliative only. Five patients had a cholecystostomy and in 1 of these duodenostomy was also performed. There were 2 operative deaths and the remaining 3 patients survived for an average of six months. Cholecystogastrostomy, which is preferred where possible, was done in 5 cases, including 2 in which cholecystostomy had been done previously. Among these 5 cases there were 2 operative deaths; the average survival period for the other 3 patients was eleven months, but 1 lived twenty-two months.

Choledochoduodenostomy was done in 1 case with death from peritonitis on the third day. Still another patient was treated by cholecystoduodenostomy but was not followed after discharge. Four patients were not operated upon.


**THE PANCREAS**


A case is recorded of carcinoma of the pancreas with metastases to the liver, in a woman of forty-one years. The clinical course was characterized by attacks of spontaneous hypoglycemia requiring frequent feedings of carbohydrate to avert convulsions and coma. Since no evidence could be obtained of impaired liver function, a neoplasm of the islands of Langerhans was suspected and an exploratory operation was performed. The liver was found to contain metastatic deposits of carcinoma but the pancreas was so surrounded by masses of enlarged lymph nodes that it was impossible to determine whether or not that organ was the site of the primary tumor. Microscopic examination of a specimen removed from the liver verified the diagnosis of carcinoma, probably primary in the pancreas.

At necropsy carcinoma of the islands of Langerhans was found. The cells of the metastatic nodules in the liver closely resembled those of normal islands of Langerhans and preparation of an extract from these nodules contained insulin, which, so far as is known, is present in extractable amounts solely in the cells of the islands of Langerhans. This case is comparable to that of Wilder, Allan, Power, and Robertson, in which the presence of insulin in liver metastases of carcinoma of the islands of Langerhans was demonstrated (*J. A. M. A.* 89: 348, 1927).
Photomicrographs of the primary lesion and a liver metastasis are included. There is a bibliography.

THE SUPRARENAL GLANDS


A general discussion with a review of three cases of neuroblastoma or neuro-epithelioma in children of four and five years. All three patients showed the characteristic features of proptosis, hydrocephalus, marked secondary anemia, and destructive and proliferative lesions involving the greater portion of the skeletal system, including both the long and flat bones. The appearance in roentgenograms of the bones of perpendicular calcium striations is especially significant, though probably not sufficiently specific to be absolutely diagnostic. The tumor is radiosensitive but the author’s patients all died. The only patients who can be cured are those in whom a very early diagnosis is made and sufficient radiation given to destroy the primary lesion before distant and incurable metastasis occurs. Autopsies were not obtained. A bibliography is appended.

These cases are again reported in Am. J. Roentgenol. 37: 325, 1937, where roentgenograms are reproduced. J. Samuel Binkley


A general review with an extensive bibliography. Milton J. Eisen

THE FEMALE GENITAL TRACT


A case is reported of an early cervical carcinoma which was diagnosed by Hinselmann’s method of colposcopy. This method is hailed as promising constantly better results in the early diagnosis of carcinoma of the cervix. Six illustrations are included. Edward Herbert, Jr.


This article is a discussion of Hinselmann’s method of colposcopy for diagnosing early carcinoma of the cervix. Winter feels that it is not a practical method, since it requires an expensive instrument and years of training, and even so the number of cases diagnosed by this method alone is very small. Furthermore diagnosis depends on serial sections of the suspected tissue that has been removed and the preparation of several thousand slides of each specimen is obviously impractical for routine application. There are no illustrations or references. Edward Herbert, Jr.


With the Feulgen stain the authors could demonstrate no characteristic difference between normal and malignant cells. In sections stained by the Feulgen method, after irradiation, changes of the same types were noted in the nuclei both of the epithelial cells of the normal cervix uteri and of those comprising the tumors; these changes were, however, more pronounced in the tumor tissue.


Both clinical and histologic details are given of the case of a woman who had had numerous examinations for various pelvic disorders and at the age of thirty-one was
first found to have an area of leukoplakia on the anterior lip of the cervix. This was kept under observation for twelve years, at the end of which time a superficial erosion appeared which would ordinarily have been considered benign. An amputation of the cervix was performed and an early but definite squamous epithelioma was found. Five photomicrographs are included. EDWARD HERBERT, JR.

Results of Operative Therapy in Advanced Carcinoma of the Cervix, C. SCHROEDER. 

Fifty-one cases of advanced carcinoma of the cervix are reported in which operation was the only form of treatment. The primary mortality was 15.7 per cent, and there were 33.3 per cent five-year cures. Another group of 39 patients who refused operation were treated by radiotherapy alone. In this group 32 of the cases were not advanced. The primary mortality was 2 per cent and there were 33.3 per cent five year cures. There are no illustrations. EDWARD HERBERT, JR.


The results are given of the treatment with radium of 607 cases of carcinoma of the cervix at the University Clinic in Buenos Aires. All of the patients were treated as far as possible by the Regaud technic, receiving about 8000 millcicrie hours exposure. The primary mortality was only 2 cases or 0.3 per cent. One patient died from severe hemorrhage, the other from an accidental injury to the bladder. Only 4 cases, or 0.6 per cent, developed complications due to the treatment. Two had a pelvic peritonitis, one necrosis of the rectum and one a phlebitis. Of the 607 cases, 410 have been followed for five years or over. The five-year cures for this entire group was 28.5 per cent. Dividing the cases into standard groups of degree of involvement, the five-year cures were: Group I, 94 per cent; Group II, 40.8 per cent; Group III, 18.9 per cent; Group IV, none. Four drawings are included. EDWARD HERBERT, JR.


This article is a discussion of the cases in which an original uterine curettage showed carcinoma and a subsequent curettage did not. Mayer is sceptical about the possibility of cure of a uterine carcinoma by curettage alone. He believes that in such cases either the original diagnosis was faulty or that the second curettage failed to reach the tumor, which may have invaded the muscular layer. No new cases are reported. There are no illustrations. A short bibliography is included. EDWARD HERBERT, JR.


Following a general discussion of decidua formation a case is reported. A thirty-year-old primipara in the fourth month of pregnancy was found to have a cervical polyp 4 cm. in length and 0.5 cm. in diameter. It was removed surgically and proved microscopically to be a fibrous polyp without epithelial elements. Throughout all portions of the polyp was extensive decidual formation; superficially there was an inflammatory reaction which did not extend to the deeper layers. It has been stated that inflammation is indispensable to decidual formation in a polyp, but Latzka believes that it plays only a secondary rôle, if any, and that the hormonal activity of the corpus luteum is the predominant cause. Treatment consists of surgical removal, which has no unfavorable effects on pregnancy. Three photomicrographs and several references are included. EDWARD HERBERT, JR.

This is a rather general discussion of the treatment of uterine fibroids by irradiation as compared to surgery. The author believes that fears of the artificial menopause are without foundation and that it does not produce serious physical or mental changes of any kind. The choice of treatment in any given case of uterine fibroids, provided the patient is forty years or over, should not be influenced greatly by any consideration of the preservation of the ovarian function, but should be based on the general physical condition of the patient and the actual gynecological findings.

A series of 100 cases treated by roentgen or radium therapy or both is briefly reported. In 59 cases the tumor entirely disappeared, in 32 it was greatly reduced, and in 9 there was no reduction in size but no subsequent growth occurred. Bleeding was controlled in all cases. No serious nervous or psychic disturbances were observed.


A primipara thirty years of age gave birth to a normal child, and a previous diagnosis of twins was found to be due to the presence of several large fibroids. In the puerperium signs of sepsis appeared, pneumonia developed, and the patient seemed hopelessly ill until, on the twentieth day after birth, she expelled an infected fibromyoma weighing 2000 grams. From then on she made an uneventful recovery.


A hysterectomy for rapidly growing uterine fibroids was performed on a woman forty-two years of age who had never been pregnant. The extirpated uterus weighed 2150 grams and contained many large subserous and intramural fibroids as well as a four-months fetus which had not been suspected. Even had the pregnancy been recognized, the treatment would have been the same, for it is inconceivable that the patient could have gone to term without serious complications. [The complication described is not so very unusual.—Ed.]

A photograph and several references are included.


A woman thirty-seven years of age who had had nine previous pregnancies with normal children, gave birth to a dead fetus weighing 2000 grams and showing many malformations. Ten minutes later a fibromyoma 36 cm. in diameter and weighing 1900 gm. was expelled. Following this the placenta was passed normally. Aside from protracted moderate hemorrhage the puerperium was uneventful.


A woman thirty-eight years old had 8 uterine myomas removed by myomectomy. Several of these were submucous in position. Eight months later she became pregnant and had a normal prenatal period, beginning labor at term. After 20 hours of labor with very little progress a Cesarean section was performed, followed by hysterectomy. In the fundus and in the right wall of the uterus were two complete defects in the muscle wall, both spaces being filled with placenta outside of which was only a thin layer of connective tissue and peritoneum. Rupture would surely have taken place in the later
stages of labor or during manual removal of the placenta. Emphasis is laid on the grave
danger of rupture during labor when there has been any scarring of the uterine wall, and
particularly following the removal of submucous fibroids. Five illustrations and 6
references are included.

Edward Herbert, Jr.

Chorionepithelioma: Its Histologic Interpretation, J. V. Benito. El corioepitelioma:
su interpretación histológica, Semana méd. 1: 1440–1450, 1937.

This is a general discussion of the diagnostic criteria of chorionepithelioma with a
brief note on 2 cases observed clinically and diagnosed by curettage. The article is
illustrated with twenty photomicrographs.

Seaton Sailer

Epithelial Metaplasia with Endometritis Following an Abortion, V. Dubrauszky.
Epithelmetaplasien bei Endometritis post abortum, Zentralbl. f. Gynäk. 61: 2643–
2648, 1937.

Of 327 cases of endometritis following abortion in which the uterine curettings were
carefully examined, 218 showed evidence of regeneration of the uterine mucosa. One
hundred and seventy-eight cases showed epithelium in the proliferative stage, and 40 in
the secretory stage. In 24 instances the cylindrical epithelium became two- and threelayered, and in 5 cases there was a true squamous metaplasia. Two photomicrographs
and several references are included.

Edward Herbert, Jr.

Case of Melanoma of the Vagina, E. Tscherne. Ein Fall von Scheidenmelanom,

Five cases of melanoma of the vagina were found in the literature, and an additional
case is reported in a woman sixty-two years of age who had noticed the tumor five
months before she was seen. It was about 3 cm. in diameter and was on the posterior
vaginal wall. Removed surgically, it was found to be a malignant melanoma. Postopera
tive radiotherapy was given, but metastases developed and death occurred sixteen
months after operation. Two illustrations and several references are included.

Edward Herbert, Jr.


Two cases are reported of carcinoma of the fallopian tube in women fifty-seven and
forty-nine years of age. Each had had a single pregnancy early in the third decade,
each was three years past the menopause, and the presenting symptom in each case was
uterine bleeding. When curettage was negative and radiation of the ovaries did not
check the hemorrhage, a laparotomy was performed in each case and a tubal carcinoma
was found. No follow-up is given. Five illustrations and several references are included.

Edward Herbert, Jr.

Cytology of Ovarian Tumors, R. C. Page and W. C. MacCarty. Arch. Path. 24:
1–7, 1937.

A study of 49 non-malignant and 33 malignant ovarian tumors showed the average
ratio of the area of the nucleus of the malignant cell to that of the non-malignant to be
1.35 : 1. The ratio of the area of the nucleolus of the malignant cell to that of the non-
malignant was 3.9 : 1. The nuclear-nucleolar ratio of the malignant cell was found to
decrease as the grade of malignancy increases. The nuclear-nucleolar ratio of malignant
tumors of the ovary is less than a third that of non-malignant tumors.


Norris records a case of granulosa-cell tumor in a woman of fifty-two, who, however,
was not followed after operation. He discusses the clinical and histologic features of
this type of tumor. In disagreement with some authorities he regards the granulosa-
cell tumor as always malignant, though it may grow slowly and metastasize late. He
rejects Meyer's explanation of the pathogenesis of these tumors, which is based on Cohnheim's theory of embryonic cell remnants (see, for example, Meyer: Arch. f. Gynäk. 145: 2, 1931. Abst. in Am. J. Cancer 15: 3007, 1931).

Photomicrographs are reproduced and a bibliography is appended, but there is no reference to Schiller's monograph, Pathologie und Klinik der Granulosazelltumoren, Wilhelm Maudrich, Vienna, 1934 (reviewed in Am. J. Cancer 20: 641, 1934).


In the literature were found 10 cases of granulosa-cell tumors of the ovary producing precocious puberty in girls from three to eleven years of age. An additional case is reported in a girl who at seven and a half began to have regular menstrual bleeding and showed all the secondary sexual characteristics. At operation a granulosa-cell tumor of the right ovary was found. Follicular hormone was demonstrated in the urine, the fluid from the cystic spaces in the tumor, and in the tumor tissue itself. In addition the Aschheim-Zondek test was positive. Another case is reported of a girl who had reached puberty at the age of twelve and two years later began to have menorrhagia. A granulosa-cell tumor of the right ovary was removed at operation. Follicular hormone was found in the tumor tissue but not in the cystic fluid or the urine, and the Aschheim-Zondek test was negative. Three photomicrographs and 11 references are given.

Edward Herbert, Jr.

Theca-cell Tumor as the Cause of Post-menopausal Bleeding, H. Huber. Thecazell-tumor als Blutungsursache in der Menopause, Zentralbl. f. Gynäk. 61: 14-17, 1937.

Seventeen cases of theca-cell tumor of the ovary were found in the literature, all but 3 of which occurred after the menopause. An additional case is reported in a woman sixty-seven years of age who ceased menstruating at the age of thirty-two and had no further uterine bleeding until three months before she was seen. During these three months she had two periods of bleeding of about a week each. At operation a large serous cystadenoma of the left ovary was found with a smaller solid tumor attached to it, which showed microscopically the typical structure of a theca-cell tumor. The right ovary was atrophic. The uterus showed cystic and glandular hyperplasia of the endometrium, hypertrophy of the myometrium, and proliferating areas of endometriosis throughout the muscle wall. Follicular hormone was demonstrated in the urine; none was found in the cyst fluid or the tumor tissue. It seems clear that the uterine changes were due to the action of the hormone produced by the neoplasm, although the hormonal activity of these tumors has been a much debated point. The patient showed pigmentation of the skin and a pronounced growth of beard. The relation of these manifestations to the tumor are not clear, but the growth of the beard stopped after removal of the tumor, though the pigmentation persisted. A panhysterectomy was performed and, since the tumor was considered malignant, radiotherapy was given. The patient gained 14 pounds in weight and was symptom-free seven months later.

Three photomicrographs and 7 references are included. Edward Herbert, Jr.


A report of a case of ovarian teratoma in a girl of fourteen, with metastases on the peritoneum, pleura, and chest wall. The primary and secondary growths were composed of representative tissues of the three germ layers in various stages of differentiation. Photomicrographs are included.

Milton J. Eisen


Ovarian tumors removed surgically from women thirty-nine, fifty-one, and fifty-five years of age are described. Since the patients have been well for eighteen, five, and
nine years respectively the tumors were clinically benign. Microscopically they were benign adenomas, but were unusual in that they showed a direct transition from cylindrical to squamous epithelium, with pearl formation definitely present in two instances and possibly in the other. None of the three tumors showed evidence of being teratomatous, but a similar transition from cylindrical to squamous epithelium is described in a teratoma. It is believed that the three tumors under discussion could have arisen from wolffian or müllerian epithelium, which is totipotent, or from the superficial germinal epithelium of the ovary. Nine photomicrographs and 7 references are included.

EDWARD HERBERT, JR.


Sixty-nine cases of carcinoma of the vulva are reported which were seen during a period of twenty-one years in Hamburg, representing 2 per cent of all gynecological carcinomas. Eight were recurrences and 61 were primary. Of these latter, 38 were followed for more than five years and 23 for a lesser period. The average age was sixty-two years, the youngest patient being thirty-six and the oldest eighty-eight. The inguinal nodes were involved in 29 cases, bilaterally in 16. All of the cases were diagnosed histologically. Of the 61 primary tumors, 12 were treated by surgery alone, 40 by surgery and radiotherapy, 4 by radiotherapy alone, and 5 symptomatically. In the surgical series there was a primary mortality of 3.4 per cent. Among 38 cases observed for more than five years there were 26.3 per cent cures. Of 23 patients followed for less than five years, 43.5 per cent were without recurrence.

During this same period 16 cases of carcinoma of the urethra were observed, all of which were examined histologically. In only 2 were the inguinal nodes involved. Three patients died within a five-year period; 4 were symptom-free from five to sixteen years after treatment; 4 were symptom-free less than four years after treatment, and 2 were still under treatment. Three cases were hopeless when first seen and were not treated. Treatment consisted of excision plus radiotherapy or radiotherapy alone.

Seventeen illustrations and numerous references are included.

EDWARD HERBERT, JR.


This is a report of an extensive squamous epithelioma of the vulva which developed in the presence of leukoplakia and kraurosis. No follow-up is given and there are no illustrations.

EDWARD HERBERT, JR.


This is a report with autopsy findings of two types of developmental defect in a child dying at the age of four months. Associated with atresia of the tricuspid valve, which forms the main subject of the paper, was a rapidly growing congenital myxosarcoma of the left labium majus and inguinal region. This tumor was removed at the age of one month but metastases occurred in the subcutaneous tissues of the scapular region, in the mediastinum, and the lungs. No photomicrographs are included.
larger nuclei and nucleoli. A second group of tumors showed true tubular formations with predominantly cuboidal dark cells interspersed with cords and groups of clear cells showing a tendency to form lumina by axial softening. In 4 cases in this group this process went on to produce cysts filled with cell debris, into which papillary projections of tumor occurred. In one typical hypernephroma the adjoining renal parenchyma was infiltrated with "renal carcinoma." In another, a metastatic lesion in a rib showed atypical alveolar carcinoma, with clear cells suggesting hypernephroma in a few areas. These findings according to the author help confirm the renal origin of these tumors. Three photomicrographs are reproduced and there are two references.


A man fifty-eight years of age gave a history of intermittent hematuria of two years' duration. Cystoscopy showed blood coming from the right ureter and pyelography revealed a dilated pelvis with filling defects. A right nephrectomy was done, and recovery was uneventful. Pathologic examination of the kidney revealed a large papillary tumor involving most of the pelvis and the upper portion of the ureter. Microscopically it was malignant. Two illustrations are included. Edward Herbert, Jr.


The author studied the mechanism of growth and differentiation of an adenocarcinoma and a scirrhous cancer of the prostate with the aid of serial sections and reconstruction of the tissue architecture on wax models. The glandular elements of the adenocarcinoma were found to be in direct communication with each other, or were connected by cellular bridges the size of an individual cell or, indirectly, through lymphatic channels. Glandular portions are lacking in scirrhous cancer, but in other respects the process of growth was similar to adenocarcinoma. The division and proliferation of the cellular groups of malignant tissue followed closely the laws of normal tissue growth—dichotomous division of preexisting elements and a tendency to transverse prolongation along one plane.

Photomicrographs and illustrations of the wax models are included.


Barringer discusses some of the problems in the treatment of prostatic carcinoma in relation especially to irradiation. External irradiation must be supplemented by some form of interstitial therapy. So far as the lateral and subtrigonal lobes are concerned the suprapubic implantation of radon seeds is comparatively simple. The posterior lobe, however, is practically always involved and, because of this, suprapubic implantation must be supplemented by perineal treatment. When it is reasonably certain that the cancer is confined to the posterior lobe, the ideal method of treatment is implantation, through the perineum, of radon needles. The tissue of the posterior lobe, the peri prostatic tissue, and the perilymphatic invasion around the seminal vesicles can be easily reached by this method. This perineal irradiation must be repeated at intervals until the prostate is sclerosed. Radon seeds may be implanted perineally but they cannot be as accurately placed as the removable needles. [For the author's technic, see Surg., Gynec. & Obst. 62: 410, 1936. Abst. in Am. J. Cancer 28: 843, 1936.]


This article is a general discussion of the therapy of prostatic carcinoma, based on 160 cases. Some of these were treated by radical operation, some by radiotherapy, and some were not treated. The end-results were about the same in all groups; and the
pessimistic conclusion is drawn that all therapy is unavailing. There are no illustrations.


A man forty-five years of age had a progressive swelling of the anterior two-thirds of the penis over a period of three years, with the formation of several urinary fistulas in the glans. The appearance was that of a fungus infection and Penicilliun glaucum was isolated from the purulent discharge from the fistulas. Under treatment the process progressed even farther. Eventually a biopsy was taken which showed a squamous-cell epithelioma, and amputation was performed. Most of the shaft of the penis was replaced by tumor tissue. Whether the tumor was the end-result of a chronic infection or whether it was primary with a subsequent infection could not be determined. There are no illustrations.


Two men, forty and forty-two years of age, had lesions on the dorsum of the glans penis. The first patient gave a history of syphilis but had received adequate treatment and serological tests were negative. No biopsy is mentioned in the record of this case. In the second case biopsy confirmed the diagnosis.


A man fifty-one years of age had a patch of erythroplasia 1.5 cm. in diameter in the retroglandular sulcus of the penis at the exact site of a chancre inadequately treated thirty-three years previously. He also had a severe leukoplakia of the tongue and buccal mucosa. The Wassermann reaction was strongly positive. Biopsy was not performed. This case confirmed Touraine's belief in the etiologic role of syphilis in the occurrence of erythroplasia. There are no illustrations.


A man forty-five years of age had several raised circular tumors along the coronal ridge of the glans penis. Clinically they resembled xanthomas but biopsy showed them to be adenomas of the sweat gland type. The presence of sweat gland tumors of the glans is explained on the assumption of an embryonal rest, since sebaceous and sweat glands, especially in the genital region, have a common anlage. There are no illustrations.

Giant-cell Tumor of the Scrotum, M. Bonino. Tumore gigantocellulare dello scroto, Arch. per le sc. med. 61: 596-599, 1936.

A thirty-five-year-old man had an ulcerated lesion on the scrotum of seven months' duration, about 1 cm. in diameter. Microscopically there was no absolute evidence that it was a xanthoma and the author classes it as a "benign tumor of inflammatory nature." Two photomicrographs are reproduced. The bibliography includes 11 papers.

Early Diagnosis of a Testicular Tumor, M. Mackintosh. Diagnóstico precoz de un tumor de testículo, Semana med. 1: 512-516, 1937.

A twenty-six-year-old man had some pain in the left testicle following intercourse, fifteen days before seeking medical advice. Several recurrences of the pain followed the initial attack. Examination showed a tumor about 0.5 cm. in diameter in the posterior
superior border of the testicle. The testicle was removed and microscopic examination showed the tumor to be a malignant dysembryoma. A postoperative Friedman test was negative. The author gives a short discussion of the value of this test but furnishes no follow-up report on his patient other than to state that x-ray therapy was advised. Photomicrographs are reproduced.

Seaton Sailer

THE NERVOUS SYSTEM


The direct roentgenographic signs of brain tumor are classified as follows:

(1) Penetration of the skull by an intracranial tumor: This was observed in 3 cases—a meningioma, a neurinoma and a cholesteatoma.

(2) Localized hyperostosis on the inner surface of the skull: This finding is almost always indicative of a meningioma, and is associated especially with tumors that have a wide base. It occurs at the site of the neoplasm either in the upper portion of the skull, or at the base (cerebellopontine-angle tumor, meningioma of the posterior fossa). Rarely other types of tumors are present, as benign glioma or acoustic nerve neurinoma. A primary osteoma of the skull is exceptionally rare.

(3) Bone erosion and circumscribed atrophy: This may be a result of localized or general increase in intracranial pressure. In the sellar region there is a primary type due to a local neoplasm (usually hypophyseal) and a secondary form from the increased pressure caused by a distant tumor. Acoustic nerve neurinoma may cause characteristic destruction of the petrous portion of the temporal bone, but the final diagnosis is usually made with the aid of localizing signs. The roentgenograms are of secondary importance.

(4) Calcification: This change is relatively frequent in meningioma and there may be an overshadowing of the signs of an associated hyperostosis. Calcification may also occur in certain slowly growing tumors, oligodendroglioma, astrocytoma, or in spongioblastoma. Calcification is not, however, a positive sign of slow growth of a neoplasm, since calcium deposits may be observed in malignant glioma. Other intracranial growths, as hemangioma, cholesteatoma and pineal tumors sometimes contain calcium. The size of the area of calcification does not give accurate information as to the extent of the tumor.

Roentgenograms are included to illustrate the changes described.

Milton J. Eisen

Cases of Cerebral Tumor of Interest from the Point of View of Differential Diagnosis, S. Eckerström. Quelques cas intéressants de tumeur cérébrale au point de vue du diagnostic différentiel, Acta med. Scandinav. 85: 244-261, 1935.

Five cases are reported of brain tumors found at autopsy in patients who presented extrapyramidal symptoms which led to a diagnosis of encephalitis lethargica. The cases are reported in detail and the differential diagnosis is discussed. Aside from the clinical picture there was nothing unusual in the tumors. There are no illustrations.

Edward Herbert, Jr.


In a series of cases of glioma the writer studied the brain, taking sections from (a) typical tumor tissue, (b) the periphery of the tumor, (c) the brain tissue adjacent to the area being invaded, and (d) areas remote from the tumor. He concludes that gliomas of the brain invariably cause a perifocal proliferation of astrocytes, which is practically always distinguishable from the glioma elements themselves. Unripe immature types of glioma cause a greater degree of such reactive gliosis than do more benign gliomas. Diffuse hypertrophy of astrocytes throughout the brain was found to be rare, and the
author believes it is probably caused not by the presence of the neoplasm but by increased intracranial pressure.  

**Labyrinthine Disturbances in Tumors of the Cerebellum and of the Fourth Ventricle,**  

This report is based on 25 cases studied both clinically and anatomically, comprising 21 tumors and 4 abscesses. The lesions are classified in 3 groups: (1) pure cerebellar lesions occurring in the posterior three-fourths of the cerebellum, away from the vestibular centers and without vestibular manifestation, including 5 purely cerebellar lesions and 3 tumors of the 4th ventricle; (2) 12 tumors in the vestibular zone with destruction of the nuclei; (3) 4 tumors and 1 abscess in contact with the vestibular zone but not invading or destroying the nuclei. A brief résumé of the physical signs and symptoms of each group is given with case histories and numerous photographs of the gross lesions. It is noted that while most of these cases produce a fairly clear cut picture they may during their evolution change from one group to another.


Primary diffuse tumors of the leptomeninges are rare. The author's patient was a boy of fifteen with symptoms suggesting encephalitis. At autopsy the gross findings were characteristic of tuberculous leptomeningitis with excessive internal hydrocephalus. On examination, however, the lesions in the leptomeninges proved to be neoplastic, arising from abnormal proliferation of the lining cells of the leptomeninges. Glial hernias through defects in the pia and ependyma were also present and were attributed to developmental anomalies. Photomicrographs are included.


This is a clinico-pathological case report to show that the pubertas praecox syndrome may occur in association with a lesion of the brain other than in the pineal body. A boy of nine years showed the pubertas praecox syndrome, later developed severe neurological complaints, and died in convulsion. At autopsy the pineal gland was normal but a glioma of the midbrain was found. The writer concludes that the pubertas praecox syndrome is not pathognomonic of pineal tumor.

[Pineal tumor occurring before puberty often but not always causes pubertas praecox changes. When the patient is beyond puberty these changes obviously do not occur. The author's remarks about the function of the pineal gland reflect the generally accepted facts about a still little known matter.]  


This is a report, with autopsy findings, of a case of acute hemorrhagic encephalitis. In addition to the numerous circumscribed hemorrhagic areas scattered through the white matter of the brain there was found a medulloblastoma in the region of the basal ganglia, but whether or not the two processes were related is undetermined.


The author discusses 6 of the relatively rare parasellar tumors, noting their neurological symptoms and signs, radiological findings, clinico-anatomic forms, and differential diagnosis. By introducing lipiodol into the ventricles and photographing in different positions he has succeeded in localizing these tumors with more success than
by using air alone. The various positions of the tumors with resulting distortion of the outlined ventricles are clearly illustrated.

Seaton Sailer


A man thirty-four years of age showed the classical signs of von Recklinghausen's neurofibromatosis in conjunction with a large area of vitiligo and several patches of alopecia. The unusual feature of the case was the patterned and partly symmetrical arrangement of the pigmented areas, which are described in great detail. There are no illustrations.

Edward Herbert, Jr.

THE BONES


This is an excellent summary of the various types of primary bone tumors, written in text-book style, but containing no new material. It is illustrated by 17 good photomicrographs, and a lengthy bibliography is appended.

Edward Herbert, Jr.


Though clinical observation and biopsy may furnish helpful evidence in the presence of bone lesions, radiography is of the first importance as a diagnostic measure, for it is capable, in the majority of instances, of indicating the pathology long before the clinical appearances can suggest it and before surgical measures for diagnosis or treatment are justifiable. This is not to say that radiography is infallible, for there are examples of bone tumors, the nature of which is indicated during careful clinical examination only, and in which the radiological findings may only serve to confuse. In others, the histologic picture is the essential factor in elucidating the problem, both the clinical and the radiological findings conflicting or agreeing to obscure the diagnosis. There are a few which remain as problems in spite of the most exhaustive clinical, histologic, and radiologic investigations.

The present paper limits itself to a discussion of the radiological findings in osteoclastoma or benign giant-cell tumor of bone, angiomia of bone, and such lesions as are to be considered in the differential diagnosis of these two conditions. Roentgenograms are included.


Fifteen cases of giant-cell tumors of bone are recorded—3 in the lower end of the radius, 1 in the lower end of the humerus, 1 in the upper end of the ulna, 1 in the lower end of the ulna, 4 in the lower end of the femur, 2 in the lower end of the tibia, 1 in the upper end of the tibia, and 2 in the fibula.

The resemblance of these tumors to localized osteitis fibrosa in their predilection for the ends of the long tubular bones, their relatively benign course, the frequency of associated pathologic fracture, the tendency to cyst formation, and other features have led some observers to regard them as another manifestation of the same pathologic process. The authors believe, however, as a result of their observations on this series and a series of 25 cases of localized osteitis fibrosa previously recorded (Surg. Gynec. & Obst. 62: 541, 1936. Abst. in Am. J. Cancer 28: 227, 1936), that there are certain quite definite differences. The giant-cell tumors had their highest incidence in the second and third decades while the osteitis fibrosa patients were for the most part in the first and early part of the second decades. The giant-cell tumors occurred chiefly in the lower epiphyses of the radius and femur, the osteitis fibrosa lesions in the upper metaphyses and diaphyses of the humerus, femur, and tibia. Furthermore, the slowly
progressive course with a tendency to break through the periosteum and invade the surrounding soft tissue and the frequent recurrence after surgery were in contrast to the benign course of the localized cystic lesions with their ready response to treatment. Roentgenograms are included but no references.


A general discussion based largely on the literature, with an attempt to correlate the radiographic findings in osteochondroma, chondroma, and cystic disease of the bone with the underlying pathology. Roentgenograms are included and there is a bibliography.


Only three cases of angioma of the frontal bone are found in the literature. A fourth example is here recorded, which had been growing for eighteen years in the mid-frontal region of a woman fifty-seven years of age. It caused spontaneous pain and was tender on pressure. It was removed surgically with the clinical diagnosis of exostosis, but microscopically it was a typical cavernous hemangioma. There are no illustrations.

Edward Herbert, Jr.


Four instances of multiple myeloma of the plasma-cell type are recorded in men of forty-two, thirty-seven, twenty-six, and sixty-nine. The outstanding clinical symptoms were pain and weakness. The urine of only one patient showed Bence-Jones protein, though repeated examinations were made in all. In one case an unidentified proteose was present in the urine. Examination of the blood showed moderate anemia in all cases. In the first patient it was of the hyperchromic type; in the other three of the hypochromic type. In two patients the leukocytes were normal at first, but moderate leukocytosis developed later. The fourth patient had terminal leukopenia. The differential count was within normal limits for three patients. The third patient occasionally showed 2 or 3 per cent myelocytes. The platelet counts were normal for two patients and low for the other two. The sedimentation rate was rapid in one. Hyperproteinemia was observed in two patients, due in both instances to an increase in globulin. The roentgen findings showed bone involvement in all the cases and in two instances biopsy confirmed the radiologic diagnosis.

At autopsy metastases were observed in only one case—to the retroperitoneal lymph nodes. Mild degenerative lesions were present in the kidneys in two cases, and one patient had terminal infarction of both kidneys.

Camera lucida drawings of a bone marrow smear from one case are reproduced. A few references are included.

THE LEUKEMIAS, CHLOROMA, HODGKIN’S DISEASE, LYMPHOSARCOMA


Forkner discusses the accepted types of leukemia under four general heads and gives the cell of origin for each type with the synonyms in common use. The literature is reviewed and there are many references.

Oberling gives a summary of the experimental work with fowl and animal leukemias and shows that pure leukemias, localized tumors, and even granulomatoses can be obtained by inoculation with the same tumor, depending on the site and method of inoculation as well as on the individual resistance and reaction of the animal. Chicken leukemia has been fairly well proved to be due to a filterable virus. In animal leukemia the evidence is less striking, but not incompatible with the virus theory if a hereditary predisposition is also admitted. In man we are not yet justified in drawing conclusions, since we can do so only by analogy. However, Oberling believes that there will be found to be a connection between the human leukemias, lymphosarcomas, and possibly the granulomatoses. Five photomicrographs are included. Edward Herbert, Jr.


A careful cytological study of leukemic tumors of either the skin or the lymph nodes can lead to a diagnosis of the type of leukemia even before changes have appeared in the blood picture. In general the tumors show the type of cell which is present or will later be present in the blood stream. In acute leukemia this is the ordinary myeloblast or the micromyeloblast, in chronic myeloid leukemia it is the myelocyte together with neutrophils, eosinophils, and basophils, and in lymphatic leukemia it is the lymphocyte. In several cases the diagnosis and prognosis have been made in this way before blood changes occurred. Six histological drawings are included. Edward Herbert, Jr.


Of 445 cases of disease of the lymphoblastoma-leukemia group, taken for the most part from the records of the Los Angeles County Hospital, 10 per cent showed specific cutaneous lesions. These included the exfoliative erythroderma of Hodgkin's disease, the metastatic nodules of lymphosarcoma, the characteristic shotty nodules most common on the trunk and upper extremities in myelogenous leukemia, and a variety of lesions in lymphatic leukemia—nodules, ulcers, plaques, and exfoliative erythroderma. Various toxic lesions, the so-called lymphoblastomids and leukemids, were also observed. These were present in 35 per cent of the patients and constitute nearly 80 per cent of all the cutaneous lesions present in the authors' series. The most frequently observed were petechiae and ecchymoses due probably to a decrease in the number of platelets in the circulating blood. Others included hyperpigmentation, most common in lymphogranulomatosis, stomatitis, pruritus, herpes, and toxic rashes.


A brief summary, with no illustrations. Edward Herbert, Jr.


Three cases are reported of chronic lymphatic leukemia accompanied by skin manifestations which illustrate the diversity of the cutaneous lesions. The first patient had large scattered patches of erythrodermia which was extremely pruritic. In the second case there was a generalized pruritus, with polymorphous leukemids, some resembling erythema nodosum and others polymorphous erythema. In addition there were cutaneous nodules composed of infiltrations of leukemic cells. The third patient
showed generalized eczematoid lesions, vegetating in character, in the peribuccal and perianal regions. Apparently no histologic studies were made and there are no illustrations.

Edward Herbert, Jr.


This article gives an excellent summary of the subject of leukemic skin lesions, with a review of the literature and a bibliography. It contains no new material, and is without illustrations.

Edward Herbert, Jr.


Hemorrhagic lesions which occur in skin and mucous membranes in the course of a leukemia may be due either to a tissue factor causing fragility of the blood vessels and their rupture or to a true hemorrhagic diathesis associated with a low platelet count and changes in the blood vessels. The leukemic infiltrations are not of primary importance in the production of bleeding. A detailed description of 13 cases is given. A bibliography is included.

Milton J. Eisen


A woman forty-two years of age had an acute leukemia which terminated fatally after one month. During the course of the disease there appeared a generalized skin eruption consisting of round papular lesions resembling roseola; this disappeared after eight days. Biopsy on the third day showed infiltration of the perivascular and lymph spaces with leukemic cells of undifferentiated type similar to those in the blood stream. The reason for the sudden appearance and disappearance of the skin lesions is obscure. There are no illustrations.

Edward Herbert, Jr.


A woman fifty-six years of age who had vitiligo of several years' duration developed a generalized lymph node enlargement which was found to be due to a lymphatic leukemia and disappeared promptly with radiotherapy. Six months later there occurred trophic changes of the left arm, muscle atrophy, ankylosis of the joints, and rarefaction of the bones, due probably to leukemic infiltration of the spinal nerve roots. Concomitantly there appeared patches of depigmentation and others of hyperpigmentation, with atrophy of the skin of the left arm. Biopsy of these areas showed small nests of leukemic infiltration throughout the corium, each group being about 0.5 mm in diameter. Further biopsies of the grossly normal skin and of areas showing vitiligo also revealed leukemic infiltration but to a less degree, the nests being smaller and farther apart. It is believed that the trophic changes of the arm produced a locus minoris resistentiae, thus accounting for the greater growth of leukemic foci in those areas. No follow-up is given. Four photographs and three photomicrographs are included.

Edward Herbert, Jr.
Primary Idiopathic Generalized Exfoliative Erythroderma Ultimately Developing into Leukemic Erythroderma (Skin as the Point of Origin of the Leukemia), W. Lutz.

Erythrodermie exfoliante généralisée, primaire, idiopathique, évoluant ultérieurement en érythrodermie leucémique (la peau comme lieu d'origine de la leucémie), Bull. Soc. franç. de dermat. et syph. 44: 1230–1236, 1937.

A case is described in a woman who first complained of skin lesions on the extremities thought to be parapsoriasis. Biopsy showed only slight acanthosis and hyperkeratosis. The blood count was normal. The lesions persisted and four years later became more pronounced, presenting the picture of an exfoliative erythroderma. Biopsy then showed more marked acanthosis and a diffuse infiltration of the corium with small round cells. The blood count was again normal. A year later the lesions were still more marked and a blood count showed a typical lymphatic leukemia with 158,000 white cells, of which 91 per cent were lymphocytes. Radiotherapy reduced the white count but caused only slight improvement in the skin. Death occurred two years later, seven years after the patient was first seen. At autopsy the corium was found to be packed with lymphocytes and the epidermis was atrophic, but there was no gross or microscopic evidence of leukemia in the lymph nodes or in any other organs. This is believed to be a clear-cut case of leukemia developing in the skin. Three photomicrographs are included.

EDWARD HERBERT, JR.


There was a moderate increase in the glutathione content of whole blood in 8 of 9 patients with chronic myeloid or lymphatic leukemia (35 to 50 mg. per cent as compared to 25 to 32.5 mg. in normal subjects, according to Gabbe's method). The rise was parallel to the increase in the number of circulating white blood cells and the attendant anemia. No change was observed in 3 cases of acute leukemia. References are included.

MILTON J. EISEN


Five cases of aleukemic leukemia are recorded, all believed to be of the myeloid group and without splenomegaly. The clinical findings were those of severe anemia, thrombopenia, and leukopenia with the presence of immature forms of leukocytes in the stained films of blood. Sternal biopsy was done in 4 of the cases and showed myeloid hyperplasia of the bone marrow consistent with leukemia. In the remaining case biopsy of a cervical lymph node led to the diagnosis. Two cases came to autopsy. The authors point out that diagnosis in these unusual cases depends largely on the differential count. In the cases reported here the diagnosis of aleukemic myelosis was considered tenable after the detection of myeloblasts, of a definite shift to the left in the leucocytes associated with severe anemia, and of signs of regeneration of the erythrocytes.

Biopsy of marrow removed from the sternum affords an invaluable aid in establishing the diagnosis. Specimens showing a predominance of undifferentiated types of cells, many of which contain mitotic figures, packed solidly together to the exclusion of fat cells, enable the pathologist to render an opinion as to the nature of the hyperplasia of the marrow.


A fatal lymph node hyperplasia without changes in the circulating white cells occurred in a man of forty-nine years. A differential diagnosis between aleukemic leukemia and lymphosarcoma was not possible, since the histological picture was not characteristic for either disease. Photomicrographs are included.

MILTON J. EISEN

Six cases of monocytic leukemia are recorded and 127 examples from the literature are reviewed, with a presentation of the essential features in tabular form. The disease was found more often in males (67 per cent of all cases). It occurred throughout a wide age range, eleven months to seventy-eight years. Swelling of the gums was one of the most constant clinical features, and in many cases it was associated with gangrenous stomatitis. Petechiae were of frequent occurrence and were usually associated with bleeding from the mucous membranes, especially of the mouth and nose. The lymph nodes were less frequently enlarged than in other types of leukemia, in 77 per cent of 110 cases in which they were examined. Moderate enlargement of the spleen and enlargement of the liver were frequent. The cutaneous lesion included firm, painless nodules not observed in other types of leukemia and staphylococcal infections.

The white cell counts in the 124 cases in which they were recorded ranged from 660 to 461,000. The average of the highest counts recorded in each case was 99,600. Three patients were leukopenic throughout the course, 6 showed leukopenia at times and no counts above the upper limits of normal, and 6 had only normal leukocyte counts recorded, making a total of 15 cases, or 12 per cent, in which the white cell count was never elevated. In only 65 cases, or 52 per cent, was the leukocyte count consistently elevated. The most important hematologic features are the appearance of promonocytes in the blood and of large numbers of monoblasts and promonocytes in the sternal marrow.

Studies of marrow obtained by sternal puncture from the author's cases indicated that the monocyte develops from a cell which may be called a monoblast, similar morphologically to the myeloblast. The intermediate form between the monoblast and the mature monocyte found in the blood is called a promonocyte.

A note is appended stating that since the completion of the author's paper he has studied 3 additional cases and found 20 additional reports in the literature. The latter are included in the extensive bibliography.


The authors point out the importance of distinguishing between the two types of monocytic leukemia: (1) the Naegeli type, with the myeloblast or stem cell as the parent cell; (2) the true Schilling type, leukemic reticuloendotheliosis, in which the cells are derived from the reticular cell. Either type may have a primary cutaneous origin.

Five cases are recorded. Two were of the Naegeli type, and of these one showed primary autochthonous cutaneous involvement, in the form of a generalized eczematoid eruption with the development of plaques and, subsequently, nodules and necrotic ulcerations. Biopsy of these lesions from the beginning showed features of lymphoblastoma but was not diagnostic of the type of the disease. Hematologic findings characteristic of monocytic leukemia were not obtained until late in the course, several years after the appearance of the skin eruption. In the second case of the Naegeli type the cutaneous manifestations were a secondary terminal feature.

Three cases of the Schilling type are recorded. In one of these cutaneous lesions resembling mycosis fungoides were followed by an exfoliative dermatitis in which monocytic cells of the Schilling type were recognized. In a second case with an exfoliative dermatitis the diagnosis, based on the blood picture, was lymphatic leukemia, and biopsy of the skin lesions suggested Hodgkin's disease. Later both biopsy and blood studies showed monocytic leukemia of the Schilling type. Subsequent blood smears showed characteristics of both conditions. In the remaining case the skin lesions were purpuric. As no biopsy was done, it is not clear whether these were simply toxic or represented a true specific infiltration of the skin.

Photographs and photomicrographs, a color plate showing the different types of cells, and a bibliography are included.

Six cases are recorded of chronic myeloid leukemia treated by a solution of potassium arsenite over prolonged periods, either alone or with roentgen irradiation. The value of the drug, as recorded by others (see Absts. in Am. J. Cancer 16: abst. pp. 278, 1234, 1932; 29: 215, 1937), is confirmed. Signs of chronic arsenical poisoning occurred in four of the patients and necropsy findings for one of these are given. In this case arsenical keratoses were present and there was a portal cirrhosis which, in view of the high arsenic content of the liver, 62.5 mg. per 100 gm., demonstrated post mortem, would appear to be attributable to the drug. A terminal diabetes easily controlled by insulin and diet was of interest in this case, but the cause of this was not established. Evidences of arsenical poisoning in the remaining cases included hepatitis, herpes zoster, neutritis, and a mild keratosis.


Sixteen cases of chronic leukemia—2 of the lymphatic and 14 of the myeloid type—were treated by radium applied to the splenic area. The applicator contains 100 to 200 mg. of radium, screened with 2 or 3 mm. of lead and covered with rubber and is so constructed as to cover the entire skin area overlying the spleen. The skin dose under these conditions is estimated to be 50 per cent at 5 cm. depth. The applicator is worn by the patient for a week or ten days, the dosage being controlled by daily blood counts. Hospitalization is obviously necessary. Patients return for a course of treatment usually once a year, or whenever symptoms or blood counts suggest the onset of a relapse.

The result is an improvement both in the general well-being of the patient and in the blood picture. The spleen shrinks and digestive disturbances disappear. Whether life is prolonged is difficult to say, but probably on the average it is not. Eight of the author's patients have died. Of these, one lived in comparative comfort for four and a half years; another lived three years and nine months, also practically symptom-free; one lived seventeen months, one fourteen months, two months, and the last for one month. The last patient and one of the patients who lived for ten months had had previous treatment with x-rays for two years and two and a half years respectively.

Brief accounts of the sixteen cases are included and a bibliography appended.


A man of fifty-six years died after an illness of about two months, the first manifestation of which was the appearance of purpuric spots over the body. Shortly after these appeared he suffered an attack of weakness with extreme pallor and complained of occasional dizziness. The finding of monocytoid cells in the blood led to a diagnosis of leukemic reticulo-endotheliosis and autopsy showed hyperplasia of the reticulum limited to the spleen.

The cells upon which the diagnosis was based are described as monocytoid. While bearing a resemblance to monocytes, they are to be distinguished from these. They had the following characteristics: a moderate amount of basophilic cytoplasm, in which small areas of yellowish hyaloplasm and dark azurophilic granules were present; a sieve-like nucleus, the structure of which was similar to but coarser than that of a myeloblast; sometimes several large irregular indistinct nucleoli. The majority of these atypical reticulo-endothelial cells represented intermediate stages of differentiation between the reticulum and myeloblast forms; a few appeared to be differentiating toward young lymphocytes.

Photomicrographs and references are included.

The author adds to the 129 cases of chloroma previously tabulated by Lehndorff (Ergebn. d. inn. Med. u. Kinderh. 6: 221, 1910) and Brannan (Bull. Johns Hopkins Hosp. 38: 189, 1926), 43 cases from the literature of 1926-36 and 3 new cases.

Two main clinical types of the disease are recognized. The so-called classic syndrome occurs chiefly in children, beginning with a rapidly growing orbital tumor associated with varying degrees of cranial tumefaction, lymphadenopathy, and osseous changes, and frequently accompanied by a progressive intractable anemia. The second type, occurring in older patients, and usually designated chloroleukemia, manifests itself clinically as a myeloid leukemia, the green tumors being demonstrated at necropsy. The author's three cases are examples of the second type of chloromatous involvement, i.e., chloroleukemia. The diagnoses during life were, respectively, subacute myeloid leukemia with leukopenia, subacute myeloid leukemia, and chronic myeloid leukemia. Green tumor tissue was found in all cases at autopsy, and histologically there was no question but that the process was a fairly acute myeloid leukemia.

The tumors are either myeloblastomas or myelocytomas. The green pigment is apparently a lipochrome and is said to contain iron.

With recent improvements in staining technic and better differentiation of the acute lymphoid and myeloid leukemias, almost all the recent cases of chloroma have been reported as cases of myeloid leukemia.

The inevitable association of chloroma with myeloid leukemia should make it obvious that chloroma is simply a variant of myeloid leukemia, with the multipotential myeloblast assuming the distinctive rôle as type cell of an invasive neoplasm.

A bibliography is appended.


These authors place the number of cases of chloroma in the literature at 194 [see preceding Abst.]. They add an example in a girl of thirteen which they believe cannot be classified as of either lymphatic or myelogenous origin.

The patient was first seen nine days before death, when she was brought to the hospital for weakness, anemia, and vomiting; she had been irrational for twenty-four hours. The upper eyelids were swollen; the cervical, axillary, and inguinal nodes were palpable; the upper right quadrant of the abdomen was occupied by a smooth mass believed to be a greatly enlarged liver. The white blood count was only 10,100, and showed no abnormalities. Retinal hemorrhages were present. The provisional diagnosis was lymphosarcoma with metastases to the brain.

At autopsy chloroma was found involving the periosteum of the skull, ribs, sternum, and vertebral bodies (the long bones were not examined), the thoracic and abdominal lymphoid tissue, the thymus, lungs, pericardial sac, liver, spleen, pancreas, kidneys, dura, pituitary, and choroid plexus of the left lateral ventricle. The tumor was now in a leukemic phase, with all the vessels showing an abundance of the tumor cells. There were marked anemia and a generalized edema with pitting of the ankles and feet, a fatty degeneration of the liver and kidneys, calcification of the costal cartilages with abnormal softening of the bone of the ribs, sternum, vertebral bodies, and to a lesser extent of the skull cap. The cerebral arterioles were thrombosed by tumor cells with multiple areas of liquefaction necrosis. The thyroid gland and adrenals were hypoplastic.

There was some question as to the character of the tumor cell. One pathologist regarded it as of the lymphocytic rather than the myelocytic type, while another considered it too primitive to indicate the potentialities of differentiation. The authors attribute the green coloration in chloroma to phagocytosis of the blood in the obstructed capillaries by the endothelial cells. It is not specific of any one cell type.

Photomicrographs are included. There are six references.

Suppuration or ulceration was observed in three cases of malignant lymphogranuloma where the diagnosis was confirmed by biopsy. The notable histologic feature was the extraordinary abundance of Sternberg cells. The authors are unable to decide whether the suppuration was due to particular intensity of the morbid process or was a secondary phenomenon. The presence of suppuration and ulceration does not preclude a diagnosis of lymphogranuloma.

L. FOULDS


This is a general discussion of the skin lesions in Hodgkin’s disease, illustrated by descriptions of typical cases. It contains no new material. Two photographs are included.

EDWARD HERBERT, JR.


A man sixty years of age had many small tumors of the skin resembling mycosis fungoides. Biopsy showed the typical picture of Hodgkin’s disease. Five years later a generalized lymph node enlargement developed and death followed in a short time. Autopsy confirmed the diagnosis. Two photographs are included.

EDWARD HERBERT, JR.


A man twenty-nine years of age who died of a typical Hodgkin’s disease was found at autopsy to have a small nodular tumor of the skin of the chest in which were found lesions of Hodgkin’s disease as well as of tuberculosis. No other evidence was found. There are no illustrations.

EDWARD HERBERT, JR.


There was a fatal outcome in a young woman with jaundice of seventeen days’ duration. Vague abdominal pains had been present for eight months. At necropsy Hodgkin’s disease of the liver was observed, with involvement of the small bile ducts and common duct, and infiltration of the abdominal nodes and pancreas. Photographs of the gross specimens and photomicrographs are included.

MILTON J. EISEN


This is a report of a case of Hodgkin’s disease in a woman sixty-seven years of age, proved by biopsy. It was unusual in that the inguinal nodes became rapidly enlarged, with infiltration of the surrounding tissues. Radiotherapy was followed by improvement, but no follow-up is given. One photomicrograph is included.

EDWARD HERBERT, JR.

A woman thirty-one years of age had a nasal obstruction due to a tumor. Biopsy showed only granulation tissue. Ulcers of the soft palate then appeared, increased in size, and caused a large perforation. On the third biopsy a diagnosis of lymphosarcoma was made. Radiotherapy failed to bring about any improvement. The end-result is not given. There are no illustrations. Edward Herbert, Jr.

Increased or Decreased Danger of Cancer in Light of Statistics and New Observations.


In contradistinction to many observers who compute on the basis of gross mortality figures, Peller believes that careful analysis of cancer statistics according to separate age groups reveals in many countries a decrease in the mortality from cancer in those in the middle years of life. Improvement in diagnosis and therapy does not appear of sufficient importance to account for this phenomenon. The decrease in some countries, as Austria and Switzerland, has been from 20 to 50 per cent approximately. Apparently a change in the localization of malignancy has occurred. The incidence of internal forms of cancer has decreased, while that of skin cancer, for which diagnosis and treatment are more satisfactory, has increased. This shift in localization depends perhaps upon the increased time spent out-of-doors in recent years, and the consequent increase in external irritation by various agents, especially ultraviolet light. This observation is strengthened by the well known frequency of skin cancer in seamen, who at the same time show a low general mortality from neoplastic disease. It is possible that the skin cancer may act as an inhibiting factor to the development of internal cancer in susceptible persons. On this basis the author suggests a new and rather unusual method of combatting cancer—the production of easily curable skin malignancy by exposure to ultraviolet light in order to impede the later development of an internal cancer with its attendant high mortality.

Milton J. Eisen


An analysis of the mortality statistics for cancer in 23 European countries during a period of four to eight years (1927 and 1930 to 1934 or 1933) appears to demonstrate a continuous rise. This phenomenon cannot be explained solely on the basis of an increase in the number of individuals in the older age groups, for no correspondence was found between the increase in older population and the increase in deaths from cancer. The rise occurred despite the newer methods of treatment that render the prognosis more favorable in certain forms of malignancy.

Milton J. Eisen


Standardized mortality statistics rather than operation or autopsy records are considered by the author the most reliable guide for a determination of the frequency of cancer. In Germany the mortality per 1,000 living in the different age groups rose from 7.3 in 1905 to 12.2 in 1931 according to the gross statistical records, but the standardized figures show the rise to be from 7.24 to 9.44. This relatively small difference may have as its cause the improvement in the methods for the diagnosis of cancer. A similar conclusion is upheld after analysis of the restricted autopsy statistics of the city of Frankfurt on the Main for the years 1909 to 1936.

Milton J. Eisen

Necropsy cancer statistics for males are analyzed according to age groups and organ localization in five large districts of Germany. The incidence was uniformly highest in the age group sixty to seventy, 266.6 cases of cancer per 1,000 necropsies. In the age group over eighty the rate was 163 per 1000, disproving the general notion that malignancy is relatively rare in advanced age. Geographical differences were noted: in cities of the sea-coast cancer of the esophagus and stomach were especially frequent; in the Rhine district localization in the esophagus and gallbladder was relatively frequent while figures for the stomach and remainder of the intestinal canal were low; in Bavaria there was a high rate of intestinal cancer, while that for the lung and esophagus was low; Saxony showed a high incidence of pulmonary cancer.


A comparison is made of the necropsy statistics for cancer in Rostock during the years 1928 to 1936 and the records based on clinical observation. There were 815 autopsies on cancer patients and 1540 deaths recorded clinically as due to malignant disease. A post-mortem examination was performed in 43.6 per cent of all deaths. On this basis, there would have been 1869 necropsies for malignant disease if the percentage of post-mortem examination had been 100. The author surmises, in agreement with many others who have studied the problem, that there is a minus error of approximately 20 per cent in the clinical diagnosis of cancer, although positive clinical diagnoses of cancer are almost always confirmed at autopsy. The theoretical correct total of the 1540 fatalities diagnosed clinically would therefore be 1848. Thus, a correspondence exists between the necropsy and clinical statistics.


The author suggests that the work entailed in the compilation of cancer statistics be performed by governmental statistical offices. The results of his work in the city of Nuremberg during the years 1933 to 1936 are given. The period is too short, however, for a judgment of the records.


Some observers have maintained that a relationship exists between the incidence of cancer and specific houses or districts, as a result of hypothetical rays emitted by the earth. The author's attention was drawn to this question by an apparent concentration of a number of cases of malignant neoplasms in certain homes in the city of Zagreb, Yugoslavia. More careful analysis of the statistics of the mortality from cancer (170 deaths annually in a population of 185,000) demonstrated that the occurrence of the disease in various districts was proportional to the actual concentration of population and the percentage of individuals in the older age groups. No relationship to differences in the situation of the living quarters of the patients could be detected.


The author reviews the contribution of radiology to the problem of cancer under three headings: experimental radiology, diagnostic radiology, and therapeutic radiology. He includes a bibliography.