
A consideration of certain experimental data led to the following conclusions: The change from a normal to a malignant cell is of the nature of a mutation. This might be brought about by an increase in the amount of heterochromatin, or by a mutation in nuclear genes, or in cytoplasmic plasmagens. The malignant cell is characterized by increased nucleic acid metabolism and more rapid mitosis. A comparable condition is said to be brought about in yeast cells by the action of camphor and chemical carcinogens. The increased production of lactic acid by malignant cells brings about changes in the physical state of their cytoplasm, which results in abnormal spindle development and consequent nuclear aberrations. Similar disturbances of the spindle mechanism can be induced with lactic acid in the root-tip tissue of rye.—R. J. L.


It was observed that during the last month of pregnancy of a cow, 8 fleshy tumors extended from the cervix through the vulva. These were removed with local anesthesia. Delivery was uneventful, and there was no recurrence. No sections of these rare tumors were made.—E. F. S.


A photograph of the tumor in situ is presented. The tumor was said to be a melanin-impregnated sarcoma near the udder, a rarity in young animals of the bovine species. The cow was observed for several years; no metastases or recurrence developed. Photomicrographs of the tumor are not given.—E. F. S.

Clinical and Pathological Reports

Clinical investigations are sometimes included under Reports of Research

GENERAL


A review and discussion, with an extensive bibliography. The author's morphogenetic theory embraces the blastomere, the parthenogenesis, and pole-cell-theory. The organizer-theory is rejected as not clear and not directly applicable to the entire vertebrate organism.—M. H. P.

ETOLOGY


A general discussion for practitioners, touching upon biological factors, hormones, genetics, carcinogens, and viruses.—M. E. H.

HEREDITY

Multiple Neurofibromatosis, eine erbliche Krankheit mit Ubergängen in andere Geschwulstformen (Gliomatose, Spindelzellensarkom, Hämagiosarkom). [Multiple Neurofibromatosis, a Hereditary Disease with Transition to Other Forms of Tumors (Gliomatosis, Fusocellular Sarcoma, and Hemangiosarcoma).] HABERTZ, F. Acta path. et microb. Scandinav., 19:488-481. 1942.

Multiple neurofibromatosis (von Recklinghausen’s disease) appeared as a dominant hereditary disease in 4 generations of a family observed for 37 years. One boy of the third generation, who had multiple neurofibromas in practically every nerve, died at the age of 9 years of gliomatosis (or neurinomatosis) spreading in the meninges especially along the spinal cord and medulla oblongata, and on the base of the brain. A girl of the third generation died at the age of 23 of an intrathoracic tumor that had developed in a nerve trunk. In many of the neurofibromas in this case there were hemangiomas with...
transition to hemangiosarcomas, which had produced metastases in the meninges and elsewhere. The large intrathoracic tumor consisted in part of tissue of this kind and in part of a fuscocellular sarcoma.—M. H. P.


Report of a case, with biopsies, in an agricultural laborer whose mother and niece were affected in the same way.—E. L. K.

Diagnosis.—General


Tumor cells were found in 56 of 311 sternal puncture specimens taken from 263 patients with cancer; i.e., 18% of the punctures permitted diagnostic inferences. Sternal puncture revealed tumor cells in only 1 of the 21 patients with sarcoma, in neither of 2 with reticulum-cell sarcoma, and in 28 of 196 patients with carcinoma; 21 of these 28 patients showed metastases to bone on x-ray examination, and 3 others of the 28 subsequently developed such metastases. In 2 cases of lymphosarcoma, sternal puncture revealed marked infiltration of the bone marrow by lymphatic elements. Of 16 myeloma patients, 14 showed myeloma cells in the sternal marrow, while the other 2 showed such cells only elsewhere in the skeletal system.—M. H. P.

Therapy.—General


There is a wide field of usefulness for neurosurgery in the relief of intractable pain due to cancer. The defeatist attitude should not be assumed until the possibilities of relief by neurosurgery are investigated. The results of chordotomy, particularly upper thoracic, are good. Alcohol injection and posterior rhizotomy have not proved very successful in the author's experience. Section of cranial nerves, particularly the trigeminal, or injection of its peripheral branches with alcohol may give relief from pain originating from tumors of the mandible, maxilla, tongue, lips, and paranasal sinuses. Prefrontal lobotomy or a similar operation may possibly, in the future, prove valuable for improving the patient's mental state.—R. E. S.


At least 15 preparations of "Coley's toxins" have been used since the method was introduced in 1892, 3 being apparently more potent than the rest, and the technic of administration has varied considerably as regards site, dosage, frequency, and duration of treatment. Successful results have been obtained by a considerable number of physicians as well as by Coley himself; the results were not always published. Because of greater strength of available preparations, and use of a more effective technic, the method was more effective in the early years. Still better results may now be possible by use of purified and concentrated preparations administered with the most effective technic, adapted to the stage of the disease and to the type of neoplasm. More than 600 case histories have been abstracted in detail, and end results are tabulated for 484 cases in which the diagnosis was histologically confirmed. Among 312 inoperable cases there were 190 five year survivals; among 132 operable cases there were 106 five year survivals. Excluded from tabulation were 80 cases lacking microscopic confirmation, 55 instances of giant cell tumors (determination of malignant ones difficult), and 32 cases in which complete regression occurred but which were followed less than 5 years. Reasons are given to explain why the method has not achieved wider recognition in the past.—Authors' abstract.

Radiation


Neus vasculosus, angiona cavernosum, verrucula planaris, and keloids are conditions in which the use of radium has given satisfactory results. The author advocates low dosages and adequate shielding. Epitheliomas, keratoses, verruca vulgaris, and corns are more suitable for surgery, or surgery and radiation.—V. F. M.


The radium treatment of 107 hemangiomas yielded "65 perfect results, or 60%." The results were regarded as satisfactory in over 93% of the 95 patients, most of whom were infants. No statement is made regarding the length of time these patients were followed, nor regarding late sequelae except that minimal scar formation was noted in 11 instances and telangiectasia in 1 instance.—V. F. M.


The facts about multiple hemangioma are reviewed. One case is reported in detail in which roentgen therapy has given an excellent result including cessation of Jacksonian seizures.—V. F. M.


Ninety-one patients with primary malignant neoplasms of the central nervous system were subjected to radiation
over the period from 1939 through 1943. Twenty-five of 60 patients with complete follow-up to September 1, 1944, are "alive and well" or "alive and well save for residual symptoms." No deleterious effects due to the radiation were observed. In most cases regrowth of hair occurred, and in a number of patients longer palliation was obtained than would have been anticipated from the usual course of the disease. There was no direct relationship between the size of the tumor dose and length of survival, but it would appear that the minimum tumor dose for astrocytoma would be greater than 6,000 r and for glioblastoma, greater than 7,500 r. Glioblastoma multiforme continues to have a high mortality rate although x-ray may produce longer survival. The effect on astrocytoma is not so strong as might be expected.

In the discussion of this paper M. Sosman states that a tumor dose of 6,000 r or more will produce damage to the normal brain but that this dose is justifiable in the treatment of a fatal disease. P. Bailey believes that a tumor dose of 5,000 r is as effective as 15,000 r and that higher doses are not justifiable because of damage to the brain.—R. E. S.


Six cases are presented of brain tumor, treated by high voltage roentgen radiation, which showed definite signs and symptoms of brain damage. The tumor dose in all cases was more than 6,000 r. Autopsies were performed in 3 cases and revealed extensive degenerative changes in nerve tissue. The larger blood vessels did not show a corresponding radiation effect; the doses used failed to destroy all the tumor tissue. Sixty-three references.— R. E. S.


Statistically, the results of adequate irradiation therapy in cancer of the cervix are superior to those of radical surgery. However, from 20 to 30% of stage I and II cases are not cured by even the most competent and skillful radiologists. The authors review their series of 19 out of 79 patients in stage I and II cases are not cured by even the most competent and skillful radiologists. The authors review their series of 19 out of 79 patients in stage I and II, either dead or with active disease, to see whether they might have been saved by more efficient irradiation or by radical surgery. The analysis shows 13 irradiation failures due to causes outside the pelvic cancer, 2 definitely due to incomplete irradiation, and 4 unexplained. These 4 patients might have been improved by surgery; however 3 of them were not acceptable for such procedure according to Meigs' rigid standards. The authors conclude that since it is impossible to recognize these cases prior to treatment, the use of drastic surgery on large series of cases in the hope of improving statistics is not warranted. Most of the failures by irradiation would also have been failures by surgery, and some radiation successes would probably not have been surgical successes.—E. H. Q.


All cases of osteogenic sarcoma, chondrosarcoma, and other primary malignant bone tumors, seen in the Hospital of the University of Pennsylvania between 1931 and 1945, were reviewed. In 26 cases, roentgen and pathological diagnosis did not agree. An abstract is presented of each of these cases, with roentgenograms and photomicrographs of most of them. It is concluded that the diagnosis of the pathologic type of malignant bone tumor cannot be made with certainty from the roentgen examination alone. Benign conditions may simulate malignant bone tumors. A complete skeletal survey should be made in every case of bone lesion that is suspected of being malignant.—E. H. Q.


The incidence, pathological types, sites of metastases, diagnosis, and treatment of thyroid carcinoma are discussed, and 64 cases from the Radiation Therapy Department of Bellevue Hospital are analyzed.—R. E. S.

Oropharynx and Upper Respiratory Tract


To assist in the earlier recognition of patients with cancer of the nasopharynx, an analysis is presented of 454 cases of primary nasopharyngeal carcinomas and sarcomas, a group more than double the size of the one that was previously regarded as the largest. The initial symptom was cervical in 32%, nasal in 30%, otologic in 23%, and ophthalmic-neurologic in 16%. An average of 11 months elapsed between the onset of the first symptom and the arrival at a correct diagnosis. Analysis of the clinical picture existing 5 months before diagnosis revealed ophthalmic-neurologic symptoms in 34.8% of the patients. A nasopharyngeal tumor should be suspected in all patients with solitary or multiple cranial nerve paralyses, enlarged cervical glands, nasal stenosis, or tubal occlusion. Despite the occurrence of ophthalmic-neurologic symptoms, metastases to the cervical glands, or considerable destruction of the base of the skull, patients have been freed from symptoms (observation period 5 to 12 years) by intensive radiation therapy. Of the 266 treated patients, 75% were freed from symptoms initially, and 22% remained symptom-free for at least 5 years. Photographs, photomicrographs, a clinical tabulation of all cases analyzed, and a bibliography of 262 references accompany this comprehensive report.—M. H. P.

Twenty Cases of Reticulosarcoma and a Special Form of this Tumor ("with Clear Cells"). With a Histological Examination of 109 Malignant Tumors of Tonsils and Rhinopharynx. BANG, F. Report to Danish Path. Soc., Mar. 27, 1941; from abstr. in Acta path. et microbiol. Scandinav., 18:439-440. 1941.

Of 109 cancers of the tonsils and nasopharynx, 52 originated from the epithelium of the mucosa, 2 were transi-
tional cell carcinoma, 25 lymphoepithelioma, 3 lympho-
sarcoma, 20 reticulosarcoma, 1 doubtful reticulosarcoma,
and 6 "various other tumors." The reticulosarcomas
were diictoyctic or syncytial, and the latter group was
divided into an entirely syncytial form and a special
form designated as "reticulosarcoma with clear cells."
This form of tumor (presumably the special form men-
tioned last) appeared very sensitive to radiation.—M. H. P.

Description of a case.—E. L. K.

Intrathoracic Tumors—Lungs—Pleura—Heart

The Proximal Extension of Carcinoma of the
Lung in the Bronchial Wall. GRIESS, D. F., McDONALD,
Fifty-five cases of carcinoma of the lung were studied to
determine the proximal extension of the malignant
lesion along the bronchial wall. The authors group all
lung carcinomas as either squamous cell, arising from
bronchial lining, or adenocarcinoma from the mucous
glands and do not segregate any undifferentiated or
"reserve cell" form. More of the squamous tumors had
extended proximally, but the glandular tumors were
seen to extend farther.—E. E. S.

Tumors of the Bronchi. HOLINGER, P. H. [Univ.
Discussion.—E. E. S.

Adenoma of the Bronchus. MOERSCH, H. J., TINNEY,
A clinical-pathological discussion, with a tabulation of
data on 38 cases.—J. G. K.

Cylindroma of the Bronchus. Report of Six
Cases. McDONALD, J. R., MOERSCH, H. J., and TINNEY,
1945.
Six abstracts of clinical findings are presented with
descriptions of the specimens obtained by operation
or at autopsy. The authors point out that, although benign,
these tumors differ from adenomas in a tendency
to involve the trachea and in secretion of a mucoid
material. Since a myxomatous interstitial tissue was sometimes
encountered, a relationship to the mixed tumors of
the salivary glands is suggested. There is a brief summary of
the symptoms, which are chiefly dependent upon bronchial
obstruction and secondary infection.—E. E. S.

Extragenital Choriocarcinoma in the Male. LAIDLEY,
T. C., and SHIPLEY, R. A. [West. Reserve Univ., and Univ.
Hosp. of Cleveland, Cleveland, Ohio] Am. J. Path., 21:921-
927. 1945.
Seven cases from the literature are reviewed, and an
additional case is reported in which surgical removal
of a complex teratoma originating in the thorax was
followed 7 years later by death from recurrent or inde-
pendent thoracic teratoma with choriocarcinomatous me-
tastases.—J. G. K.

Uber sog. Endokardmyxome. [So-Called Endo-
cardial Myxoma.] RINGERTZ, N. [Caroline Hosp., Stock-
1942.
A report of a case, a review of the literature with an
extensive bibliography, and a discussion of the patho-
genesis of this condition. The author believes that so-
called endocardial myxomas are neither organized thrombi
nor tumors derived from connective tissue, but are like
an independent growth of mesenchymal cells proliferating
in the medium of the circulating blood and comparable
to a tissue culture.—M. H. P.

A Case of Metastatic Heart Tumor—Neurofibro-
sarcoma. ANTHON, O. [Norske Diknohjem, and Norske
1944.
A case report, with photomicrographs and a photo-
graph.—M. H. P.

Diaphragm and Abdominal Wall

Neurofibroma of the Diaphragm. KLAASSEN, K. P.,
PATTON, R., and BEMEN, F. M. [Ohio State Univ., Columbus,
The authors believe this to be a unique case report,
although other types of tumors have been reported in this
location. The tumor was large and encroached seriously
on the capacity of the thorax but caused little dyspnea.
A presenting symptom was pain in the upper extremities.
The tumor presumably arose from the phrenic nerve, but
the latter was not paralyzed.—E. E. S.

Sarcoma of Rectus Muscle: Surgical Manage-
ment. PUGH, H. L., and RONNERT, A. H. [U. S. N. A.]
The literature bearing upon abdominal wall tumors is
reviewed. A case of myxosarcoma of the right rectus
muscle is reported, and the technique of removal of this
tumor and plastic repair of the abdominal wall is de-
scribed.—C. W.

Leukemia, Lymphosarcoma, Hodgkin's Disease

Essays on the Biology of Disease. Chapter 7. The
Biology of Follicular Lymphoblastoma. MOCHEROTTI,
298-299. 1945.
Follicular lymphoblastoma is, in most instances, the
forerunner of lymphosarcoma and less frequently of
lymphatic leukemia. The disease usually presents a milder
course than the conventional lymphosarcoma does and
is particularly radiosensitive so that both lymph nodes
and spleen may greatly decrease in size after only a few
treatments. Unfortunately, the condition does not remain
cured. In the majority of cases, the disease returns, some-
times after many years (4 to 15), the lymph nodes become
resistant to x-rays, and the patient succumbs.—A. Cn.
monocytic, and lymphoid leukemia and (1 case) leukosarcoma, and an analysis of 47 cases of leukemia from the literature, the authors conclude that approximately 80% of patients with leukemia have significant pathological changes in the brain, consisting of hemorrhages and infiltrations of leukemic cells, that 20 to 35% of leukemic patients show neurologic signs and symptoms, and that approximately 29% die of brain hemorrhage.—J. G. K.


Case report.—J. G. K.


In this case of acute myelogenous leukemia, no conclusion can be drawn concerning the beneficial effect of colchicine, which was administered over a 13½ month period until death. However, further trials of the drug are recommended.—M. E. H.


Report of a case in which imprints made from ulcerating cutaneous lesions revealed characteristic Sternberg-Reed cells.—J. G. K.

Adrenal


This is a case report of a pheochromocytoma of the adrenal medulla with a typical clinical picture. In addition the patient experienced generalized convulsions that could be precipitated apparently by hyperventilation. At operation the tumor was observed to be fixed close to the diaphragm and to be displaced inferiorly upon inspiration. The activity of the pressor substance in the tumor fluid did not decrease over a period of 48 hours, which suggested to the author that the mother substance was not adrenaline but a more stable substance such as tyrosine.—J. B. H.


Case report.—J. G. K.

Pituitary


General review.—J. G. K.


The author proposes and discusses the thesis that Crocke's changes (hyalinization) of the basophilic cells of the anterior lobe of the pituitary gland represent an effect and are not a cause of Cushing's syndrome. The changes are held to be secondary to hyperfunction of the adrenal cortex.—J. B. H.


A case of Cushing's syndrome is reported in which necropsy revealed no tumorous tissue of an endocrine organ or other part of the body and no hyperplasia of the adrenal cortex. The sole anatomical abnormality observed consisted in hyaline changes (Crooke's changes) of the basophilic cells of the anterior lobe of the pituitary gland. Studies of the patient before death showed alkalosis and low concentrations of potassium in the blood plasma. The levels of potassium were increased and existent electrocardiographic changes were influenced by the administration of potassium citrate. It is suggested that the hyaline changes in the pituitary were secondary and that the clinical manifestations were an expression of adrenal cortex hypersecretion, despite the absence of supporting histological evidence.—J. B. H.

STATISTICS


The object of the survey was to determine what the cancer situation is in the general hospital, and the report is based on 3,561 tumor records that have been abstracted or revised since 1940. Of the total cases, 1,979 or 55.6% were in males, and 1,582 or 44.4%, in females. The 5 year survivals represent 22.2% and 19.8% of total admissions for males and females, respectively, from 1935 through 1939. Cancer was proved by microscopic examination in 86.5% of the hospitalized males and in 88.8% of the hospitalized females. A study was made of the age of the patients at the time of admission, stage of the disease, site of the lesion, presence or absence of metastasis, and the delay period between the first symptom and the initiation of treatment.—M. E. H.


In this study no significant difference in incidence of renal tumors in white and colored persons was found. Cancer of the penis, scrotum, and prostate occurred more frequently in Negroes, but cancer of the bladder was less frequent in colored men (but not women). Colored men younger than 50 years had a relatively low incidence of cancer of the testis.—W. J. B.