HEPATIC TUMOR FORMATION. Cancer Research, 1:699-708, 1941.

Liver tumors were produced in rats by feeding butter-yellow (N,N-dimethyl-p-aminobenzene) in semi-synthetic diets of controllable inadequacy for 4 months followed by the basal dye-free diet for 2 months or more. The livers were inspected by laparotomy at 4 and 6 months. A tumor incidence of 90 to 100% in 4 months was observed on diets containing 10 to 12% casein but adequate in all other respects.

High levels of dietary casein offered partial protection against butter-yellow. Other protein sources as liver, yeast, and egg offered protection at lower levels of total protein. Whole dried beef liver at 10 to 20% levels offered nearly complete protection at 4 and 6 months. When the dye was fed continuously in a diet containing liver, some tumors eventually developed.

The water-soluble, alcohol-insoluble portion of whole liver was found to offer nearly complete protection at 4 months when fed at low levels in the diet. However, protection was incomplete at 6 months. Xanthine, L-cystine, L-tryptophan, and choline at 0.1 to 0.5 per cent levels did not offer any protection against the dye.

Butter-yellow reduced the food consumption and growth rate in young rats. Controlled feeding experiments indicated that the dye itself reduced growth per se as well as through a decreased food intake.

Results with 34 diets indicated that in general (a) the nutritionally adequate diets offered at least partial protection against hepatoma formation; (b) the protective supplements were usually rich in both protein and the vitamin B complex, particularly riboflavin; (c) the non-protective diets were deficient in at least one of these factors.—Authors' abstract.


Although a similarity existed between embryonic and tumor growth with regard to the plasma proteinase activity of albino rats, no such similarity was found in the case of plasma phosphatase activity. Rats with Jensen sarcoma did not show any change in plasma phosphatase activity during tumor growth or during the regression of the sarcoma whereas marked enzymatic changes occurred during embryonic growth.—H. J. C.

Clinical and Pathological Reports

NERVOUS SYSTEM

BAILY, F. [Univ. of Illinois, Chicago, Ill.] INDICATIONS FOR SURGICAL TREATMENT OF INTRACRANIAL TUMOR. South. Surgeon, 9:539-551. 1940.

The author makes a plea for two cardinal principles in surgical methods for the eradication of intracranial neoplasms: a guiding knowledge of the pathology of tumors and an estimation of the functional importance of the operative area. Consistently radical surgery, which may produce some permanent tumor excisions but result in a vegetative existence for the survivor, is not advocated. Tumors of the bulb and pons are always inoperable.


Assays for biotin (vitamin H) were made on acid hydrolyzed tissues by a microbiological method based on the specific requirement of Rhizobium trifolii (Wisconsin strain 205) for this factor. Results are expressed in terms of pure biotin by standardization of the method with the crystalline methyl ester. Biotin levels from the same organs of adult Wistar rats fed laboratory stock ration were very uniform although individual organs of the same animal differed widely. Expressed in micrograms of biotin per gm. of dried tissue, adult rat skin, muscle, lung, and brain contained much less than heart, kidney, or liver. In the corresponding embryo tissues, however, the reverse was found to be true.

Human carcinoma of sigmoid, rectum, and lung were found distinctly richer in growth substance than adjacent normal tissue. The skin of wild and domestic adult rabbits was found to have less biotin than the Shope papilloma or rabbit embryo skin. Primary carcinoma of the rat liver induced by feeding butter yellow was decidedly poorer in biotin than the tissue adjacent to the neoplasm, unlike the other tumors examined.

The writers believe that the increased biotin content of tumor and embryo represents a difference in metabolism shared by these tissues, rather than a change common to tissues in which cells are rapidly dividing, since the biotin content of vigorously regenerating rat liver or of pregnant human uterus does not differ from the same tissues in a nonhyperplastic state.—M. B.


Using the procedures of Kögler and Erxleben, the authors were able to isolate glutamic acid hydrochloride from several types of tumors in 50-70% yield. The d(-)-glutamic acid content of the total hydrochloride isolated from any one tissue did not exceed 44%; the average value was 25%. These results, therefore, do not support the claim that the glutamic acid of malignant tissues exists in a highly racemized state.—H. J. C.

Various forms of visual hallucinations are described in a patient with an inoperable gloma involving the greater portion of the right cerebral hemisphere.—M. J. E.


Pronounced symptomatic improvement occurred in 3 patients following resection of meningioma of the thoracic portion of the spinal cord. A fourth died 6 weeks postoperatively of unspecified cause.—M. J. E.


In 1,000 consecutive roentgen examinations of the skull, calcification of the choroid plexus was found in 112 cases, or 11.2%. In 6 of 8 cases showing displacement of the calcified glomus the lesions were rapidly growing (glioblastoma multiforme, metastatic carcinoma, and hemorrhage). Two were meningial fibroadenomas.—E. A. L.


The importance of recognizing intracranial lesions in patients observed by the otolaryngologist and ophthalmologist for symptoms commonly treated in these specialized practices is illustrated by 3 case reports. In each instance more careful examination disclosed evidence of an expanding process in the brain.—M. J. E.


The clinical findings are reviewed in 91 verified cases of tumor of the cervical cord. Morphologically the most common extradural tumor was neurofibroma; intradural and extramedullary tumor, meningioma or neurofibroma; intramedullary tumor, glioma. Typical cases are described and drawings illustrate the surgical technique.—M. J. E.


A summary is given of the late results of surgical treatment of intracranial tumors operated on in Cushing’s clinic during 1925 to 1926. In cases of malignant glial tumors survivals are rare. A considerable number of permanent cures 7 to 11 years after operation was observed in cases of more benign neoplasms as ependymoma, papilloma of the choroid plexus, pituitary adenoma, meningioma, acoustic nerve neurinoma, and cranio pharyngioma.—M. J. E.


A large intracranial teratoma was found in a premature male fetus delivered by cesarian section. The tumor contained bone, cartilage, and glandular structures but was chiefly composed of nerve elements.—L. L. W.


A perineural fibrosarcoma of the cervical portion of the left vagus nerve gave rise to pain in the neck, hoarseness, dysphagia, and a Horner’s syndrome of 3 years’ duration. The symptoms were originally attributed to a thyroid adenoma, but were not relieved by a thyroidectomy. Radiotherapy had a palliative effect. The patient died of auricular fibrillation. Necropsy disclosed the correct diagnosis and a metastatic focus in the tail of the pancreas. A photograph of the tumor and photomicrographs are included.—M. J. E.


The author presents a case of papilloma of the choroid plexus. Review of approximately 80 cases in the literature shows that the greatest incidence of the disease is in the first decade of life. In children the tumor is usually found in the lateral ventricles, while in adults it occurs most frequently in the fourth ventricle. The pathology and growth characteristics of the tumor are presented. There are 8 tables, 2 photographs, and 1 drawing.—G. De B.


The existence of an orbital tumor was assumed in a patient with increasing proptosis, loss of vision, and optic atrophy. The eye of the affected side was enucleated, but histologic examination failed to identify an intraocular neoplasm. Swelling of the orbit increased, and a meningioma extending from the optic foramen was subsequently removed by means of exenteration of the orbit. A small osteoma of the orbital wall was also excised and the patient appeared symptom-free several months later.—M. J. E.


Of 400 brain tumors seen consecutively between 1932 and 1939, 56% were classified as permanently removable. In that group of 224 there was a primary mortality of only 12%. The group included 89 meningiomas, 33 acoustic neuromas, 30 pituitary adenomas, 29 gliomas (mostly cystic astrocytomas of the cerebellum) and a miscellaneous group (52) including angiomata, cholesteatomas, cranio-pharyngiomas, etc. Of 187 survivors, 37 presented severe disabilities. Of the 224 cases 71% were leading useful lives. The paper is illustrated with 9 figures and has a bibliography of 6 papers.—A. M.


Report of a case of hour glass tumor, associated with a huge brachial plexus tumor, in a patient with von Recklinghausen’s disease.—H. G. W.


An astrocytoma in the right cerebral cortex anterior to the motor area gave rise to convulsive seizures and a left hemiplegia. A satisfactory temporary improvement...
was achieved by partial extirpation of the growth. Brain potentials had been recorded preoperatively by means of electroencephalographic examination and found to be normal.—M. J. E.

MEREDITH, J. M. [Univ. of Virginia, Charlottesville, Va.] UNUSUAL TUMORS AND TUMOR-LIKE LESIONS OF THE SPINAL CANAL AND ITS CONTENTS WITH SPECIAL REFERENCE TO PIFALLS IN DIAGNOSIS. Virginia M. Monthly, 67:670-687. 1940.

Nine cases are described. In each instance the symptoms and signs indicated a spinal cord tumor. One patient had a simple arachnoidal cyst in the cervical region. Of the 5 patients with tumors in the dorsal region, 2 had neurofibroma and 1 a meningioma. In the lumbar region 1 patient had an extradural haemangiomia and a second a nonneoplastic mass consisting of hypertrophied ligamenta flavia and fibrocartilage. The patients in this group were cured by extirpation of the benign lesions. Malignant or potentially malignant processes existed in 3 patients. A benign dorsal neurofibroma recurred as a neurogenic sarcoma 5 months after being excised. The malignant tumor was partially resected and irradiated. Roentgen therapy was administered to a second patient with a Ewing’s tumor of the dorsal spine producing the clinical syndrome of cord involvement. The third had an angio- blasts meningioma in the lumbar region. Partial removal was possible and was followed by roentgen irradiation. The treatment employed in the latter 3 patients produced temporary symptomatic improvement. Drawings, roentgenograms, and photomicrographs of different tumor types are reproduced.—M. J. E.


Five cases of intracranial tumor situated in the posterior fossa are recorded in which the clinical signs led to an erroneous diagnosis of a lesion of cardiovascular origin, and in which a correct diagnosis was established either at necropsy or operation. In 3 instances the growth was an acoustic nerve neurona, and in 1 each a basilar meningioma and a hemangioma of the cerebellum. Hypertension, frequently labile, was a common feature, but the patients were in age groups commonly affected by this condition. The onset of symptoms in cases of this type may be apoplecticiform, and the true nature of the illness further obscured by acute attacks of cardiovascular or respiratory distress. Some symptoms are undoubtedly the result of arteriosclerosis, and disseminated neurologic manifestations as pareses or paralyses, visual disturbances, and signs of cerebellar and bulbar disease, as occur in these cases, indicate an intracranial lesion but their localizing character is indefinite. No positive proof is forthcoming that an expanding lesion in the posterior fossa is responsible for the hypertensive manifestations. However, several cases are cited of amytrophic lateral sclerosis in youthful subjects in whom hypertensive disease appeared related to evidence of bulbar involvement.—M. J. E.


A series of 100 cases of verified brain tumor in individuals of 60 years of age or older is analyzed. These cases represent 8% of the total cerebral neoplasms observed. The symptoms and objective signs did not differ basically from those occurring in younger age groups, but the common incidence of cerebral manifestations following vascular lesions in older patients and senile changes complicates the differential diagnosis. Three histologic types constituted 82% of the total tumors (glioblastoma multiforme, 35 cases; meningioma, 25; acoustic nerve neurona, 22). The patients are a poor surgical risk. Operation was performed in 86 cases and 37 (43%) patients died postoperatively. Patients with glioblastoma who did not succumb as a result of the intervention survived on the average 4 months after operation, those with meningioma and acoustic nerve tumor, 2½ and 3½ years respectively.—M. J. E.


Following diagnosis of bilateral retinoblastoma in a child of 16 months the more extensively involved left eye was enucleated. Fractionated roentgen therapy (10,000 r total dose, 200 kv., filter 0.5 mm. Cu + 1 mm. Al, 3 portals) was administered to the other eye during the succeeding 15 months. The intraocular tumor remained stationary in size and satisfactory vision was retained.—M. J. E.


About 11% of intracranial glomatous tumors are of truly mixed type, and a patient with a tumor that contains either glioblastomatous or medulloblastomatous tissue will have, with rare exceptions, a life expectancy of not more than about one year. Therefore surgical therapy of intracranial gliomatous tumors should be conditioned as much by the demonstration by the pathologist during operation of glomatous and medulloblastomatous tissue as by the accessibility of the tumor that is to be removed.—H. G. W.


Hemangioblastoma occurred in a father and 1 son, and an angio- blasts meningioma in the second son. In the case of the father a cerebellar cyst had been drained 10 years prior to the present recurrence of symptoms of cerebellar disease. The patient died postoperatively following an attempted removal of the cerebellar mass. Operation disclosed a cyst of similar nature in 1 son, and drainage likewise relieved symptoms. The meningioma in the second son was located in the parasagittal area. Distinct improvement followed its excision. The author discusses the possibility of the lesions representing phapes of Lindau’s syndrome.—M. J. E.
Clinical and Pathological Reports

Cancer Res 1941;1:768-770.

Updated version  Access the most recent version of this article at: http://cancerres.aacrjournals.org/content/1/9/768.citation

E-mail alerts  Sign up to receive free email-alerts related to this article or journal.

Reprints and Subscriptions  To order reprints of this article or to subscribe to the journal, contact the AACR Publications Department at pubs@aacr.org.

Permissions  To request permission to re-use all or part of this article, use this link http://cancerres.aacrjournals.org/content/1/9/768.citation. Click on "Request Permissions" which will take you to the Copyright Clearance Center’s (CCC) Rightslink site.