INTRACRANIAL MENINGEAL CHONDROMA

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The sparsity of recorded primarily meningeal cartilaginous neoplasms is evident from a perusal of the literature. According to Chorobski et al. 2 Hirschfeld 3 was probably the first to record an intracranial tumor that could be classified as a chondroma. Chorobski et al., Siris and Angrist, 6 and Forsythe et al. 3 are some of those who have reviewed the literature on this subject when reporting their own cases. From these reviews it appears that intracranial new growths either wholly or partially cartilaginous may arise from one of several sites within the cranium. These sites include the base of the skull and the bony sinuses, the dura mater, the leptomeninges and rarely the choroid plexus.

A total of 42 intracranial chondromas were found in the literature to the present time. Of these, some were of meningeal origin. A meningeal neoplasm formed exclusively of cartilage is an unusual occurrence that raises questions regarding its mode of origin.

CASE REPORT

No. N.S. 647/59. A.R., a young man aged 18 years, was admitted to the Neurosurgical Unit, Government Hospital, Madras, for headache and blurring of vision. Four months previously the patient had experienced numbness of the left leg which spread gradually upwards. Soon thereafter, the left leg was noted to drag when walking. This was followed by onset of headache, which was generalized, and was particularly severe early in the mornings. The headache was accompanied by bouts of vomiting and, for the last 2 months, by blurring of vision. These symptoms continued and for the last 2 weeks he had had focal convulsions involving the left half of the body. Examination. He was an ill-nourished young male. There was an infected wound on the right side of his head caused presumably by a burr-hole made elsewhere before this admission in an attempt to relieve the intracranial hypertension. Papilledema was noted in both fundi. There was bilateral paralysis of the 6th cranial nerve, and slight weakness of the lower half of the left side of the face was found. There were spasticity and weakness of the left upper and lower limbs, the lower limb being more affected than the upper. All deep tendon reflexes were exaggerated on the left side, and an extensor type of plantar response was elicited on stroking the sole of the left foot. No abnormalities of the sensory system were revealed.

A tentative diagnosis of a right cerebral hemispherical—probably parasagittal—space-occupying lesion was entertained. Right carotid angiography revealed a depression of the corresponding anterior cerebral artery (Fig. 1).

Course. Craniotomy was postponed pending control of the infection of the scalp. During the course of antibiotic therapy for the latter, the symptoms of intracranial hypertension became aggravated, and an operation had to be performed earlier than planned originally.

Operation. A right lateral parasagittal craniotomy disclosed a tense dura mater, and with a needle through this membrane, a hard mass was encountered at a depth of about 2 cm. from the surface. Incision of the dura mater revealed a large glistening, greyish-white nodular mass of tumor between the medial surface of the right cerebral hemisphere and the falx cerebri. The tumor appeared to be firmly adherent medially to the right surface of the falx cerebri and the sagittal sinus. Over its lateral extent it was free from the surface of the brain. Because of its enormous size, piecemeal removal was resorted to, and a space measuring about 4\(\frac{1}{2}\)\times 3\(\frac{1}{2}\)\times 2\(\frac{1}{2}\) was found to have been occupied by the mass. Bleeding from the surface of the falx and the sagittal sinus was attended to, and the wound was closed as usual.

Postoperative Course. The patient failed to regain consciousness and despite adequate attention, expired 4...
hours later. Postmortem examination was not permitted.

Pathological Examination. Several portions of a greyish-white, glistening tumor, weighing in all about 40 gm., were available. The largest of these measured about 7×5×3 cm. and presented a convex, lobulated glistening outer surface and a ragged inner surface (Fig. 2) apparently indicating the area of attachment to the falx. On section the mass was greyish-white and homogeneous, not unlike the cut surface of cartilage.

Microscopic sections from numerous areas stained with hematoxylin and eosin and periodic acid Schiff technique revealed the following features. On one side was a connective-tissue membrane that dipped into the tissue in places, carrying with it a core of thin-walled blood vessels. In the interstices between these vessels were a number of pale vacuolated or granular cells with central or eccentrically located nuclei (Fig. 3). Sections stained with periodic acid Schiff revealed that these cells contained periodic acid Schiff-positive granules.

Fig. 2. (Left) Photograph of largest portion of the chondroma showing the lateral surface that excavated into the cerebral hemisphere. (Right) Ragged medial surface of same specimen indicating attachment to the falx.

Fig. 3 (above). Medium-power photomicrograph of an area in the tumor showing groups of vacuolated cells between blood vessels in the connective-tissue core.

Fig. 4 (below). Histological appearance of main portion of tumor showing adult cartilage cells in a hyaline stroma.