Dr English

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SPHENOID WING MENINGIOMA OCCURRING AS A LATERAL ORBITAL MASS.*†

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ABSTRACT.

The differential diagnosis of a mass presenting in the lateral aspect of the orbit with bony erosion and involving the skin includes many malignancies, predominantly sarcomas. A total evaluation of the mass to include histopathologic characteristics and the true extent of the disease is critical to proper management of the patient.

A 68-year-old man was referred for therapy with a diagnosis of fibrosarcoma. Evaluation of the disease revealed contiguous tumor from the right temporal region into the posterior orbit, with displacement of the globe and extension intracranially. During operation a frozen section analysis of the tumor was also interpreted as fibrosarcoma. A craniofacial resection was performed, including orbital exenteration and resection of a large 10 x 12 cm segment of attached dura. There was no evidence of extension into the brain. Final pathologic evaluation of the tumor was meningioma rather than fibrosarcoma. This unusual presentation of a meningioma has never been reported in the medical literature. The difficulty with interpretation of the original biopies will be discussed, as well as the management of this case.

The differential diagnosis of a mass presenting in the lateral aspect of the orbit with bony erosion and involving the skin includes many malignancies, predominantly sarcomas. A total evaluation of the mass to include histopathologic characteristics and the true extent of the disease is critical to proper management of the patient. A case is reported of a sphenoid wing meningioma which presented as a mass lateral to the right orbit. A frozen section analysis of the tumor was interpreted as fibrosarcoma, which was consistent with the previous diagnosis from another pathologist. Final evaluation of the tumor following resection was meningioma rather than fibrosarcoma. This unusual presentation has never been reported in the medical literature. The difficulty with interpretation of the original biopsies, as well as the management of the case, will be discussed.

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CASE REPORT.

A 68-year-old man, W. O., was referred for therapy with a diagnosis of fibrosarcoma. For 2 months, he had noted an asymptomatic swelling over the right temple. An open biopsy done during exploration of the mass was interpreted as a low grade fibrosarcoma.

The patient was referred to the University of Arkansas Head and Neck Oncology Service for further evaluation and treatment. Evaluation of the swelling revealed a firm, non-tender, soft tissue mass overlying the right frontal bone. This mass ballotted with another beneath the right zygomatic arch, but did not clinically involve the orbit. Consultation with an ophthalmologist confirmed that there was no clinical orbital involvement. A computerized tomographic scan revealed contiguous tumor from the right temporal region of the face and scalp into the posterior orbit with displacement of the lateral rectus muscle in a medial

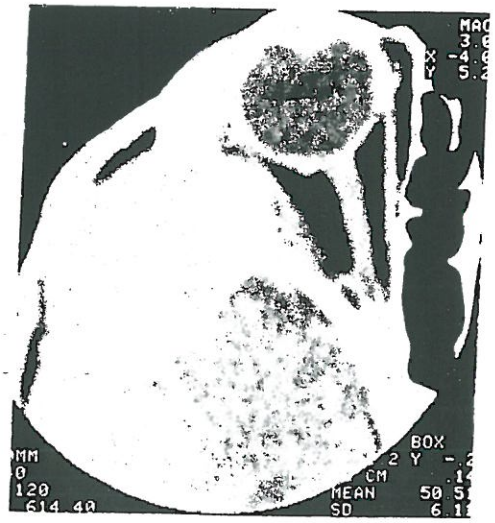

Fig. 1. Computerized tomographic scan. Magnified view of the eroded area.

Fig. 2. Surgical defect of craniofacial resection with large dural graft from the fascia lata.

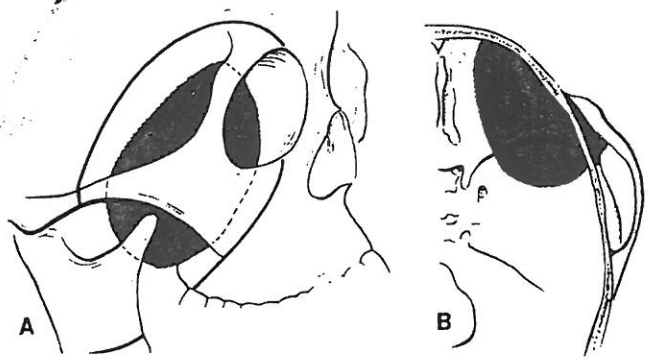

Fig. 3. Extent of tumor and resection. A. Right lateral view. B. Intracranial view.

direction. The lateral orbital wall was eroded by tumor (Fig. 1). The mass measured 3 x 3 x 6 cm and invaded into the right middle cranial fossa, abutting the dura. This intracranial extension, however, did not appear to involve the brain.

At surgery, a frozen section analysis of the tumor was performed both in the soft tissue lateral to the orbit and in the tissue within the orbit. This frozen section was interpreted as fibrosarcoma, which was consistent with the previous diagnosis. A craniofacial resection was performed, including orbital exenteration and resection of a large, 10 x 12 cm segment of attached dura (Fig. 2). Extracranially, the tumor extended from the lateral orbital tissue to below the zygomatic arch and into the infratemporal fossa (Fig. 3). Intracranially, there was no evidence of brain involvement and tumor-free margins were successfully obtained on the dura. Postoperatively the patient healed without difficulty and has remained free of disease for over 15 months. Rehabilitation with a facial prosthesis has been successfully accomplished (Fig. 4).

PATHOLOGIC EXAMINATION.

Examination of the surgical specimen revealed a tumor which originated along the sphenoid wing, invaded through the bone of the lateral orbital wall, and presented itself as a subcutaneous mass lateral to the orbit. Light microscopy showed a highly cellular, pleomorphic, spindle-cell tumor consistent with either fibrosarcoma or meningioma. Multiple mitoses were in evidence, as well as granulofilamentous inclusion bodies in the cytoplasm. The latter have recently been described in meningiomas[1] (Fig. 5). Electron microscopy revealed abundant, thick

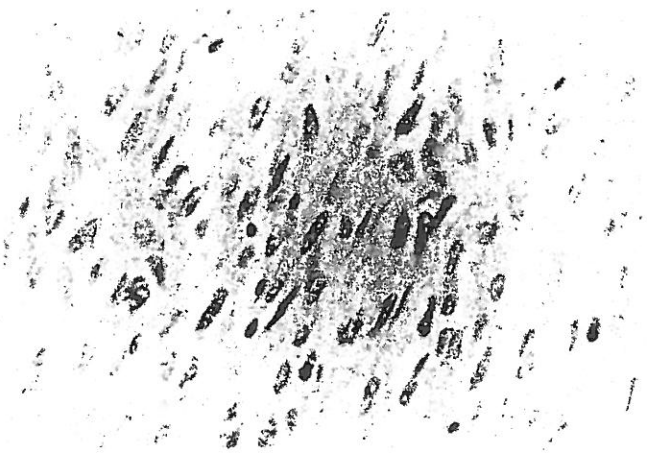

Fig. 5. Light microscopy reveals a highly cellular, pleomorphic, spindle cell tumor.

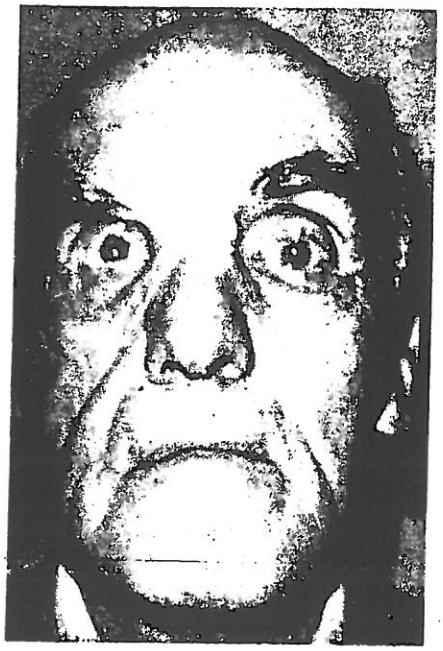

Fig. 4. Rehabilitation with a facial prosthesis.

microfilaments within the cell bodies. There were numerous cytoplasmic interdigitating processes between the cells that were attached by desmosomes[2] (Fig. 6).

DISCUSSION.

Meningiomas comprise 15% of all intracranial tumors. Usually of good prognosis, they are commonly well-circumscribed, seldom metastasize, and are slow to invade surrounding tissue in an infiltrative fashion. They spread by direct extension along the plane of least resistance and extend into bone along the haversian canals, rather than by erosion. Sporadically, a highly malignant, atypical variant of meningioma has been reported that is aggressive to invade tissue and metastasize early.

These tumors are thought to be hamartomatous, arising from the arachnoid villi. The most widely ac-

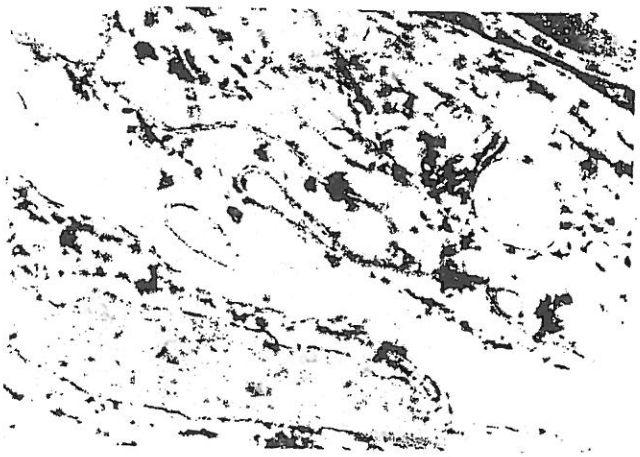

Fig. 6. Electron photomicrograph. Cytoplasmic interdigitating processes attached by numerous desmosomes.

cepted classification is based on the predominant cell type and pattern of histology within the tumor. Five sub-groups of classification are recognized: *1.* meningotheliomatous (syncytial), *2.* fibroblastic, *3.* mixed or transitional, *4.* angioblastic, and *5.* sarcomatous.[3] Diagnostic differentiation is often difficult between these sub-groups and also among other neoplasms of soft tissue because of the numerous histopathological features which are common to them. In this case, microscopic evidence of a cellular spindle-cell tumor was interpreted as fibrosarcoma. This diagnosis verified the clinical finding of a lateral orbital mass, as well.

This unusual presentation of a meningioma was confirmed only when the tissue was examined under the electron microscope. Presence of desmosomes and cytoplasmic interdigitating processes and inclusion bodies confirmed the diagnosis.[3]

This particular clinical presentation of a meningioma has never been reported in the medical literature. This diagnosis must be considered in the interpretation of masses of the soft tissue lateral to the orbit.

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INTERNATIONAL SYMPOSIUM OF 150th ANNIVERSARY OF IRSA.

The International Symposium of the 150th Anniversay of IRSA will be held in Brussels, Belgium, March 21-25, 1985. Topic for this symposium will be "To Be Deaf Today . . . And Tomorrow?" and will be chaired by D. Denys.

Conferences and panels with many different international personnalities in the specialized pedagogy, communication, sociology, psychology, otology and audiology.

Free papers (15 minutes): abstracts must be received by August 31, 1984.

Conference language (with simultaneous translation): English, French and Dutch. There will also be a scientific exhibition.

For further information contact: Secretariat: IRSA, International Symposium of the 150th Anniversary. Chaussée de Waterloo, 1504, B-1180 Brussels, Belgium, phone (Voice and TTY): 32-2-374.90.90. F5

CONGRESS OF THE PAN AMERICAN ASSOCATION OF OTO-RHINO-LARYNGOLOGY AND BRONCHO—ESOPHAGOLOGY.

The Meeting of the Congress of the Pan American Association of Oto-Rhino-Laryngology and Broncho-Osophagology will be held September 10-15, 1984 in Quebec, P.Q., Canada, at the Hilton International. Course Chairman is Doctor Paul Savary.

Air transportation will be available for those coming through Miami, FL, to facilitate the transportation directly to Quebec City, September 9th. For those who want to attend the American Academy Meeting held September 17, 1984, air transportation will be available from Quebec to Las Vegas, September 16th.

For further information, contact: Doctor Paul Savary, 44, Cote du Palais, Québec, P.Q., Canada G1R 4H8. Phone: (418) 692-4230. F8