Case Reports

Calvarial Hemangioma: Tumor Stain and Meningeal Artery Blood Supply

Case Report

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Hemangiomas of the calvaria are uncommon lesions, forming approximately 0.2% of all bone neoplasms, and 10% of primary benign neoplasms of the skull. Cerebral angiograms of this lesion are rare. In a recent case, the blood supply to a frontal hemangioma from both the middle meningeal and superficial temporal arteries was demonstrated and is reported here.

Case Report

While a 36-year-old man was being examined for “sinusitis,” his physician noticed a swelling on the head. The patient had not previously noted the lump. Other than a few headaches associated with his sinus difficulties, he had no complaints. He was admitted to this hospital.

Examination. Physical examination was normal except for a round firm elevated area, 4 cm. in diameter, behind the hairline over the left frontal bone, just off the midline. The laboratory findings were normal.

Plain skull films (Fig. 1) revealed a 4×4 cm. honeycombed lucent defect in the left frontal bone, with its posterior margin adjacent to the coronal suture and its medial margin extending just across the midline. On tangential laminagrams, numerous spicules of bone were seen radiating away from the outer table, which had small lucent defects within it, while the inner table was intact. Pansinusitis was also noted.

A left cerebral angiogram was then made, using 60% Renografin and serial filming in the anterior-posterior (tangential), half-axial, and lateral projections. There was slight enlargement and increased tortuosity in the superficial temporal and middle meningeal branches of the external carotid artery (Fig. 2), both of which terminated in the midportion of the lesion in the calvarium.

In addition, there was a vascular blush or stain noted, beginning immediately after the appearance of contrast material in the above mentioned vessels and corresponding to the size of the skull lesion (Fig 3). The vessels in this tumor blush were coarser than those seen in meningiomas, and emptied more quickly, disappearing at 3.3 seconds, shortly after the veins had become

Fig. 1. Oblique projection showing “honeycombed” lesion.
densely opacified. The diagnosis given by the Radiology Department was en-plaque meningioma, although hemangioma was considered a possibility.

*Operation.* A very vascular tumor was found within the bone. The inner table was intact, but bulging inward about 5 mm. The underlying dura was somewhat vascular but in no other way abnormal. The outer table was destroyed in several areas, with marked vascularity adjacent to it, including the scalp. The tumor was removed and a tantalum plate was applied. The post-

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**Fig. 2.** Enlarged superficial temporal and middle meningeal arteries (arrows) extending to the lytic calvarial defect.

**Fig. 3.** Close-up of lateral projection of mid-arterial phase, showing coarse vascular stain in the lytic calvarial defect.