Intrasellar cavernous hemangioma

Case report

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The authors present a rare entity, an intrasellar cavernous hemangioma that on neuroimages mimicked a nonfunctioning pituitary macroadenoma in a patient with a known orbital hemangioma. Such lesions can grow extraaxially within the dural sinuses, particularly the cavernous sinus, and present like tumors. A better understanding of the neuroimaging, clinical, and anatomical features of these lesions may prevent difficulties in management.

KEY WORDS • cavernous hemangioma • sella turcica • pituitary tumor • vascular malformation

Very rare lesions that occur in the sellar region should be considered when resecting pituitary adenomas. We present the case of a patient who was being observed using MR images because he harbored a benign hemangioma of the orbit. The patient was found to have an expanding, contrast-enhancing lesion in the sella turcica that was thought to be a nonfunctional pituitary macroadenoma. During surgery, a highly vascular lesion was encountered that was adherent to the dura of the cavernous sinus. The pathological diagnosis was cavernous hemangioma.

Case Report

Five years before surgery, this 41-year-old man underwent computerized tomography scanning for sinusitis and was found to harbor a left posterior orbital hemangioma. The case was followed using serial MR imaging to track the cause of this lesion (Fig. 1). Subsequent MR images revealed an enlarging, gadolinium-enhancing tumor that was located in the right side of the sella and abutted the cavernous sinus; the lesion measured 14 × 13 × 12 mm (Fig. 2). The mass caused mild lateral displacement of the right cavernous carotid artery, but there was no evidence of extension around the vessel or extension through the cavernous sinus. The lesion displaced the infundibulum to the left side and extended cephalad, almost touching the chiasm. The enlarging lesion was reported to be consistent with a finding of pituitary macroadenoma.

Abbreviations used in this paper: CSF = cerebrospinal fluid; MR = magnetic resonance.
was sent home. Since his discharge from the hospital the patient has done well. The final pathological results confirmed that the lesion was a cavernous hemangioma (Fig. 3).

Discussion

Intrasellar cavernous hemangiomas are extremely rare; to our knowledge there are only three reported cases in the literature. In the first case the hemangioma was an incidental autopsy finding in a patient who had died of breast cancer; in the second case the patient presented with a lesion like a pituitary macroadenoma in a 42-year-old man with a two-year history of headache, impotence, and weakness. The third case was reported in a 45-year-old man with a history of neurofibromatosis Type 1. That patient also had evidence of other vascular abnormalities. Our patient is the only patient with an intrasellar cavernous hemangioma known to have undergone MR imaging. This case illustrates that the MR imaging characteristics of an intrasellar cavernous hemangioma may mimic those of a pituitary adenoma.

According to modern estimates, cavernous hemangiomas account for 5 to 13% of the intracranial vascular malformations and occur in approximately 0.5 to 1% of the population (for a review, see the article by Maraire and Awad). Although they can occur in all parts of the nervous system, most often these lesions occur in the cerebral hemispheres and typically present with seizures and bleeding. On MR images, cavernous hemangiomas in the cavernous sinus region are revealed to be well-defined masses that appear hypointense or isointense in T1-weighted images and markedly hyperintense in T2-weighted images. These lesions characteristically enhance on gadolinium-enhanced T1-weighted images. The cavernous hemangioma reported in this case exhibited a low signal intensity on T1-weighted images, and a high intensity on T2-weighted images. It displayed homogeneous enhancement after gadolinium administration. The appearance of this lesion on MR images was thought by the neuroradiologist to be consistent with that of a pituitary macroadenoma.

Although cavernous hemangiomas are benign vascular lesions, they may present with mass effect and mimic neoplasms. A recent report of 10 cases in which the lesions were located in the cavernous sinus region demonstrated the very significant morbidity that may be associated with attempts to resect these parasellar lesions and the potential for intraoperative bleeding. Our case illustrates that cavernous hemangiomas may masquerade as pituitary adeno-

Fig. 1. Noncontrast-enhanced axial (left) and contrast-enhanced coronal (right) T1-weighted MR images revealing an incidentally discovered enhancing hemangioma in the left posterior orbit.

Fig. 2. Noncontrast-enhanced (left) and contrast-enhanced (right) T1-weighted coronal MR images of the sella demonstrating a mass on the right side. Moderate homogeneous enhancement is observed after administration of gadolinium (right).
mas because the two types of lesions have similar MR imaging characteristics. The neurosurgeon should, therefore, be alert to the possibility of encountering a cavernous hemangioma if a very tough vascular lesion is found in the sella. If a cavernous hemangioma is suspected, the surgeon may first wish to obtain a frozen section for diagnosis and perform only a partial resection, because these lesions are dural based and complete excision may result in serious bleeding. Adjunctive treatment of residual cavernous hemangioma with stereotactic radiosurgery may result in an excellent response and avoidance of morbidity, as has been demonstrated in recent reports.4,6

References

Fig. 3. Photomicrograph of the surgical specimen demonstrating multiple dilated vascular channels that are lined with endothelium and separated by a matrix of fibrous tissue. H & E, original magnification × 10.