Dumbbell-Shaped Spinal Cavernous Hemangioma: A Case Report

Epidural cavernous hemangiomas are rare. The MR appearance of a purely intraspinal, epidural lesion has recently been described [1]. We report a case of a dumbbell-shaped cavernous hemangioma that extended through the adjacent neural foramen, producing a large paraspinal mass.

Case Report

An otherwise healthy 46-year-old man had had midthoracic pain and lower-extremity hypesthesia for 10 months. Chest radiographs showed a smoothly marginated, 3-cm, left-sided paraspinal mass. Lumbar and subsequent cervical myelograms showed cord compression with high-grade epidural block and mostly left-sided epidural disease extending from T2 to T4. CT scans obtained after myelography showed a dumbbell-shaped mass with a large intrathoracic component extending through the T3–T4 neural foramen (Fig. 1A). The well-circumscribed left-sided epidural component of the mass extended from T2 to the T4–T5 interspace. No intradural component was seen. The mass was isodense with muscle and relatively homogeneous. The T3 vertebral body was mildly eroded but intrinsically normal. The well-circumscribed mass was isointense with spinal cord and skeletal muscle on T1-weighted MR images (600/20) (Figs. 1B and 1C) and markedly hyperintense to these structures on T2-weighted images (2150/60) (Fig. 1D), where scattered serpiginous foci of hypointensity were noted within the lesion. The coronal T1-weighted images showed the dumbbell shape and long intracanalaricular segment. A small hyperintense focus was present in the postero- lateral aspect of the vertebral body adjacent to the mass. The preoperative differential diagnosis included lymphoma, neurofibroma, schwannoma, and meningioma. Thoracotomy and laminectomies revealed a more infiltrative mass than suspected preoperatively, and only partial resection was possible. No intradural or osseous involvement was present despite the suggestion of vertebral involvement on the axial T2-weighted MR images. Pathologic examination showed a cavernous hemangioma involving the overlying parietal pleura and entrapping a segment of peripheral nerve and spinal ganglion.

Discussion

Most hemangiomas involving the epidural space are actually extensions of lesions of the vertebral bodies [2]. Purely vertebral hemangiomas are relatively common; they are found in 11% of cases at autopsy and are symptomatic in less than 1% of cases [3]. Exclusively extradural hemangiomas are distinctly unusual, and the few reported dumbbell-shaped lesions were in the thoracic spine [4]. Although grossly they appear well-circumscribed, hemangiomas are unencapsulated and infiltrate adjacent tissue, necessitating extensive surgery. Although some think that hemangiomas are true neoplasms, most pathologists think the lesions are hamartomatous malformations and categorize the masses as cavernous or capillary on the basis of the size of the vascular channels; cavernous hemangiomas are the larger ones.

The intensities of soft-tissue cavernous hemangiomas on MR have been described and are characteristic, reflecting the lesions underlying morphology [5, 6]. T1-weighted MR images suggest a well-defined mass hypointense to muscle. The marked hyperintensity on T2-weighted images may reflect the increased free water in the stagnant blood present within the large vascular channels. Intervening fibrofatty septae, vascular thrombosis, and calcification appear as serpiginous foci of central hypointensity.

Although characteristic, the radiologic features of hemangiomas are nonspecific and might be compatible with a diagnosis of neurofibroma, schwannoma, or meningioma, tumors that more commonly produce dumbbell-shaped spinal lesions [7]. The extensive cephalo-caudal epidural involvement, the absence of an intradural component, and the possible involvement of the adjacent vertebral body should, however, prompt consideration of and an adequate surgical approach suitable for other more infiltrating extradural entities, such as lym-
phoma, angiolipoma, and, as described, cavernous hemangioma.
Administration of contrast agent also might be helpful in preoperative
differential diagnosis.

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Erratum

In the commentary by Kucharczyk that followed the letters to the editor by
Abrahams and by Berns and the reply by Katz (AJNR 1991;12:580–581),
the first sentence of the fifth paragraph should read "The coronal image in case 1
in the paper by Benshoff and Katz [not Truwit and Barkovich, as printed] is
misleading." AJNR apologizes for this error.