A Rare Case of Dumbbell-shaped Spinal Epidural Capillary Hemangioma

ABSTRACT

Study design: A case report and literature review.

Summary of background data: Hemangiomas are frequently considered as hamartomatous congenital vascular malformations. Hemangiomas of the spine are usually lesions of the vertebral bodies, but they can occur at other locations, such as the intramedullary or epidural space. Purely epidural hemangiomas are rare and most of them are of cavernous type.

Materials and methods: This is a case report of a 70-year-old male with a D6, D7 dumbbell-shaped capillary hemangioma with extraforaminal extension on the left side. Patient underwent D6-8 laminectomy and en bloc resection of the lesion.

Results: Microscopic evaluation showed a fibrofatty tissue with a proliferation of small-sized vascular structures with areas of myxoid appearance. To date, there have been nine epidural capillary hemangiomas of the thoracic and lumbar spine reported in the literature.

Conclusion: It is important to consider hemangiomas in the differential diagnosis of epidural lesions with dumbbell-shaped appearance in the magnetic resonance imaging study, especially at the thoracic level. These benign lesions usually present as a progressive myelopathy, so early treatment may prevent permanent neurological defects and result in complete cure.

Keywords: Capillary hemangioma, Cavernous hemangioma, Dumbbell shaped, Epidural mass.

DISCUSSION

Hemangiomas are considered to be congenital hamartomatous vascular malformations. Hemangiomas of the spine are generally lesions of the vertebral bodies, but can occur in other locations. It frequently occurs in the intradural extramedullary compartment. Pure epidural hemangiomas are very rare. To the best of our knowledge, only nine cases in the English literature have been described. Eight of these cases involved thoracic spinal levels and one case involved a lumbar level. Of these, four cases presented with an extraforaminal extension causing a dumbbell-shaped appearance in spinal MRI studies. The tumors are usually well-circumscribed, iso- or hypointense on T1-weighted images, hyperintense on T2-weighted images, and enhanced relatively homogeneously on T1-weighted images with gadolinium. The radiological aspects are nonspecific, well-circumscribed tumors and the dumbbell shapes on MRIs are also commonly found in other tumors, such as schwannoma, neurofibroma, or meningioma. Histologically, hemangiomas are divided into capillary and cavernous types, depending on the dominant vessel size at microscopy. The cavernous type are histologically a large number of sinusoidal channels in collagenous tissue, whereas the capillary hemangiomas are capsulated lesions.
Fig. 1: T1 contrast weighted axial image showing a left paravertebral heterogeneous rounded mass extending from T6 to T7 with intrathoracic extension

Fig. 2: T1 axial image showing a mildly hyperintense mass at T6-T7 level extending through neural foramen, widening and obliterating the epidural fat and displacing and compressing the spinal cord

Fig. 3: Postoperative axial image showing no evidence of residual tumor with establishment of CSF space around the cord
characterized by lobules of thin irregular capillary-sized vessels lined by endothelial cells separated by septa of fibrous connective tissue.\textsuperscript{2,11,12} Capillary hemangiomas usually present in a chronic progressive manner because of mass effect and nerve root irritation.\textsuperscript{3} Cavernous hemangiomas present with an acute symptomatology related to intratumoral bleeding.\textsuperscript{7,14} Complete surgical removal is the treatment of choice for epidural capillary hemangioma.\textsuperscript{15,16}

Recurrences have not been described in the literature and in most cases, as in our case, the pain relieved significantly, and sensory and motor deficits were improved from preoperative medical research council grade II to grade IV postoperatively.

CONCLUSION

It is important to consider the diagnosis of hemangiomas in the differential diagnosis of epidural lesions with dumbbell-shaped appearance in the MRI, especially at the thoracic level. It is a benign and potentially curable disease and the most appropriate surgical treatment is \textit{en bloc} resection of the entire lesion. They are usually presented as a progressive myelopathy, so early treatment may prevent permanent neurological deficit.
REFERENCES


