

Thoracic vertebral intra-osseous hemangioma with spinal cord compression: A rare presentation

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Citation

R Sherwani, S Zaheer, A Sabir, S Goel, K Rahman. *Thoracic vertebral intra-osseous hemangioma with spinal cord compression: A rare presentation*. The Internet Journal of Pathology. 2008 Volume 8 Number 2.

Abstract

Benign vascular tumors of bone are extremely infrequent. Symptomatic vascular tumors are even more infrequent. Vertebral hemangiomas represent 2-3% of all radiologically detectable spinal tumours. Symptomatic vertebral hemangiomas are rare and represent <1% of all hemangiomas. If untreated they can lead to serious neurological deficit. We report a case of a vertebral hemangioma in thoracic region causing spinal cord compression. We want to emphasize the point by reporting this case is that, although symptomatic spinal hemangioma is rare but it should always be included in the differential diagnosis of symptomatic spinal lesions especially in developing countries where tubercular lesion is more common.

INTRODUCTION

The word hemangioma comes from the Latin word "hemangio" meaning blood vessels and "oma" meaning tumor with active cell division. Vertebral hemangiomas represent 2-3% of all radiologically detectable spinal tumors.[1] Symptomatic vertebral hemangiomas are rare & represent <1% of all hemangiomas and less than 10 % of the spinal hemangiomas.[2] Hemangiomas are most often found in head & neck region (80%) however they may occur anywhere on the skin or internal organs

Today treatment options include surgical excision, laser treatments, steroid and or alpha interferon therapy and rarely embolization or sclerotherapy.[3]

CASE-REPORT

A 32-year male patient presented with weakness of the both lower limbs for the last 18 months. No tenderness or swelling was present in back. On investigation - Hb-10.5 gm%, TLC-7200 cells/mm³, DLC-P₅₄L₄₄E₀₂ and ESR-34 mm in 1st hour was observed.

Magnetic resonance imaging (MRI) -Cervicodorsal spine (fig 1) – findings were suggestive of altered spinal intensity of T₂ (2nd thoracic vertebrae) vertebrae, involving body, left pedicle, lamina & transverse process appearing hypo intense on T₁ W₁ & hyper intense on T₂ W₂ with intense post contrast enhancement with enhancing epidural soft tissue causing spinal cord compression with underlying cord oedema &

minimal bilateral para-vertebral soft tissue enhancement (Pott's spine). A clinical differential diagnosis of aneurysmal bone cyst, giant cell tumor T₂ body, or Pott's spine was made in the T₂ vertebral body region.

Figure 1

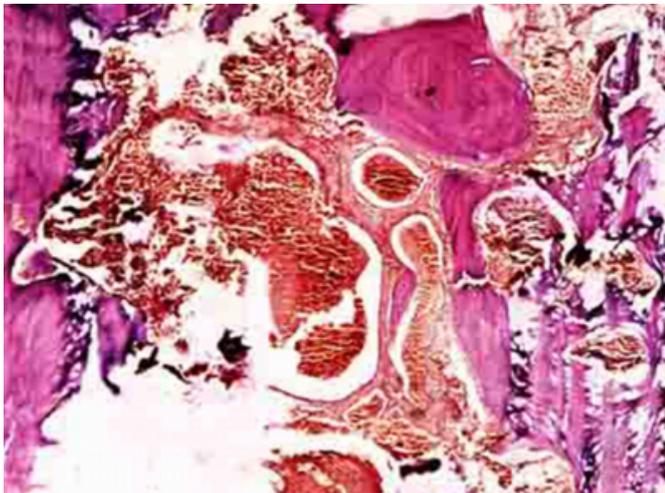
Figure 1: Magnetic resonance Imaging shows hyper intense lesion involving the body of the second thoracic spine on T₂-weighted image



Patient underwent decompressive laminectomy and tissue submitted for histopathological examination. Gross examination of tissue showed multiple bony tissue pieces with small amount of soft tissue pieces aggregate, measuring 2.5 cm, admixed soft tissue pieces measured 1 cm. Microscopic examination showed (fig 2) cavernous and capillary lesions composed of broad thin walled blood vessels and small capillaries lined by banal endothelial cells filled with blood within the medullary cavity between the bone trabeculae and the histopathological diagnosis of hemangioma of bone was made

Figure 2

Figure 2: Histopathological examination showing cavernous and capillary lesions composed of broad thin walled blood vessels and small capillaries lined by banal endothelial cells filled with blood between the bone trabeculae (H & E X 400)



DISCUSSION

Vertebral hemangiomas are usually seen as a solitary lesion localized in the vertebral body. Although there is a predilection for the thoracic region of the spine, [4] hemangiomas also may occur in the cervical or lumbar spine. The most common type of presentation is an incidental inactive lesion requiring no treatment. Symptomatic vertebral hemangiomas are rare (< 1% of spinal hemangiomas). The most frequent symptom is pain. An active lesion with spinal cord compression or nerve root compression is seen rarely.[2]

The diagnosis can usually be made by radiologic studies [3]. If at least one third of the vertebral body is involved, a honeycomb appearance is observed on radiographs. Sometimes compression fractures can be seen. The thickened vertical trabeculae causing axial cuts, which is

called polka dot, can be seen on computed tomography. MR plays the main role in the diagnosis of the hemangiomas. The differentiation between intra- and extraosseous hemangiomas is important as extraosseous hemangiomas are associated more frequently with symptomatic lesions and it can easily be done on MRI.[5] Our case was unusual in the sense that it was a intra-osseous hemangioma associated with symptoms which lead to the diagnosis of symptomatic Pott's spine/ Giant cell tumour by orthopaedic surgeon on radiological examination and decompressive laminectomy was done.

On the basis of histology hemangiomas can be either capillary or cavernous type. Capillary hemangiomas are most common in the skin, sub-cutaneous tissue and mucous membrane of oral cavity & lips, it varies in size from few millimeter to several centimeters in diameter. They are bright red to blue and are level with the surface of the skin or slightly elevated. Histologically capillary hemangiomas are usually lobulated but encapsulated aggregates of closely packed, thin walled capillaries, usually blood filled and lined by a flattened epithelium, separated by scant connective tissue stroma.[6]

Cavernous hemangiomas are less common than capillary hemangiomas, they are usually larger, less well circumscribed and more frequently involve deeper structure than do capillary hemangiomas. Grossly they appear as a red-blue, soft, spongy mass 1-2 cm in diameter. Histologically the mass is sharply defined, but not encapsulated and is made up of large, cavernous vascular spaces, partly or completely filled with blood separated by a scant connective tissue stroma. Histopathologically, vertebral haemangioma consist of thin-walled, blood filled vessels and sinuses lined by endothelium and interspersed among the longitudinally oriented trabeculae of bones. The dilated vascular channels are set in a substratum of fatty marrow.[3]

Treatment of vertebral hemangiomas is indicated if symptoms such as neurological deficits or severe pain develop. The most common treatment option for painful lesions is radiotherapy.[3] Another treatment option is embolization. In cases with spinal cord compression, a decompressive laminectomy usually is performed.[3]

We want to present this case because of rarity of symptomatic presentation of spinal hemangioma, further we want to emphasize the point by reporting this case is that, although symptomatic spinal hemangioma is rare but it

should always be included in the differential diagnosis of symptomatic spinal lesions because if it can be diagnosed correctly on clinical and radiological studies alternate form of treatment in the form of radiotherapy and embolization can be attempted and the patient can be saved from surgical intervention.

References

1. Nguyen JP, Djindjian M, Gaston A, et al. Vertebral hemangiomas presenting with neurologic symptoms. *Surg Neurol.* 1987; 27:391-97
2. Nassar SI, Hanbali FS, Haddad MC, Fahl MH. Thoracic vertebral hemangioma with extradural extension and spinal cord compression. Case report. *Clin Imaging.* 1998 Jan-Feb; 22: 65-8
3. Fox MW, Onofrio BM. The natural history and management of symptomatic and asymptomatic vertebral hemangiomas. *J Neurosurg.* 1993 Jan; 78: 36-45.
4. Templin CR, Stambough JB, Stambough JL. Acute spinal cord compression caused by vertebral hemangioma. *Spine J.* 2004; 4(5): 595-600
5. Ross JS, Masaryk TJ, Modic MT, Carter JR, Mapstone T, Dengel FH. Vertebral hemangiomas: MR imaging. *Radiology.* 1987; 165:165-9
6. Disease of infancy and childhood. In. Kumar, Abbas, Fausto (editors) *Robbins and Cotran; Pathologic basis of disease*, 7th edition. Philadelphia: Sunders; 2004. p. 545-546

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