

VERTEBRAL HEMANGIOMA PRESENTING WITH INTERMITTENT CLAUDICATION

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Study Design: A patient with vertebral hemangioma and unusual clinical presentation is reported.

Objectives: The report describes and attempts to explain these unusual clinical complaints.

Summary of Background Data: Vertebral hemangioma is a common and often asymptomatic tumor. The neurologic symptoms may appear with the pressure on the neural tissue caused by extraosseous extension.

Method: The patient presented with intermittent claudication. Conventional X-rays, CT and MRI slices revealed vertebral hemangioma at the T5 vertebra and extraosseous extension compressing the spinal cord. Gravity related vascular dilatation may induce further compression of the spinal cord and, thus, is thought to be the underlying event in the induction of the intermittent clinical symptoms.

Result: Lesion was treated with subtotal corpectomy after embolization and fusion with strut iliac crest graft. Post-operative 4 month follow-up of the patient is without complaints.

Conclusion: Vertebral hemangioma should be thought of in cases with intermittent neurological symptoms at the lower extremities.

Key Words: Vertebral hemangioma, Cord compression, Embolization.

INTRODUCTION

Hemangioma of the vertebrae is a common and benign tumor usually found incidentally. Most cases are asymptomatic (2-6). Vertebral hemangioma becomes symptomatic due to either expansile enlargement of the vertebral bodies, pedicles and laminae or extraosseous extension towards extradural space. Hemangiomas therefore may present with symptoms of low back pain syndrome, root irritation findings, and even with paraplegia (3, 8-10).

We present a case of vertebral hemangioma which first presented with lower extremity paresthesia and muscle cramps initiated by walking and standing, and which improved with resting; the symptoms were initially taken as intermittent claudication due to peripheral vascular pathology.

Case Report

A 42 year-old obese man referred to our clinic with a 6-month history of paresthesia and muscle cramps in both legs when walking and standing for about 20 min. His complaints disappeared after resting.

Examination revealed no sensory-motor deficits and a follow up schedule was initiated. One month later the patient came with paresthesia in lateral aspects of his calves and muscle cramps on the legs appeared within shorter ranges of walking compared to previous

admittance, but there were still no motor deficits at the lower extremities. Neurological examination was repeated after an effort test performed by walking and stairing for 20 minutes: slight sensory disturbance at L4, L5, S1, and S2 dermatomes were found, and deep reflexes were hyperactive, Babinski's sign was positive.

First, direct conventional radiographic examination was done and as coarsening and vertical striation at thoracic 5th vertebra was observed. CT findings suggested a hemangioma of the corpus of the 5th thoracic vertebra. Whole vertebral column MRI examination confirmed the diagnosis and sagittal T1 weighted post-contrast MR imaging revealed increase enhancement of the vertebral body (T5) associated with epidural masses. The epidural mass showed significant compression of the spinal cord. The signal intensity changes of the spinal cord were present, and attributed to either myelomalacia or edema (Figure 1).

After the dimensions of the hemangiomatous vascular structures were determined by angiography, selective embolization, using 200 micron PVA (poly vinyl alcohol) particles, was applied. Post-embolization angiographies showed that hypervascularization returned to normal (Figure 2A, 2B). Twenty-four hours after embolization, patient was taken to operation. In the operation, right thoracotomy incision was used; leaving the left lateral wall of thoracic 5th vertebrae, subtotal corpectomy was applied. The pressure on spinal cord was removed by the cleaning

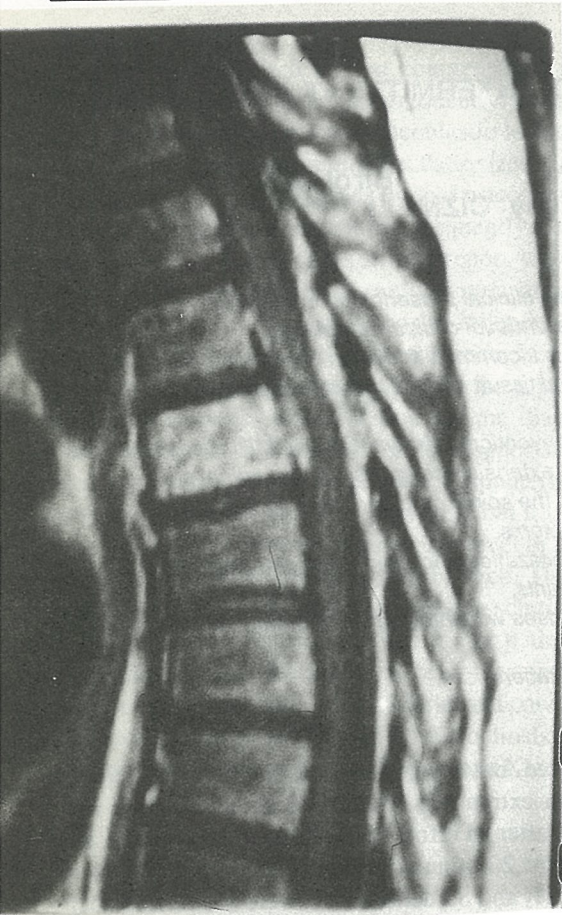


Figure 1.

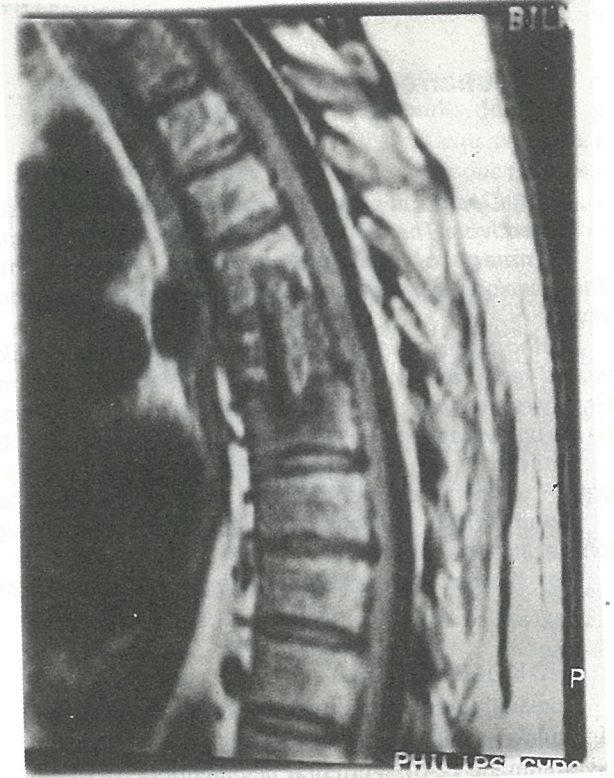


Figure 3.

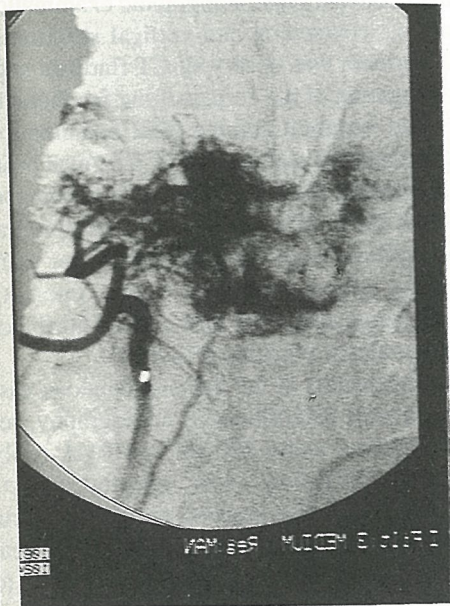


Figure 2a.

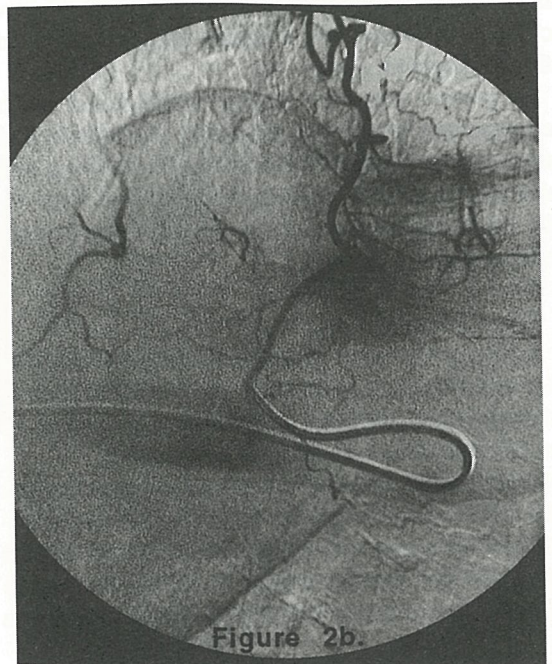


Figure 2b.

of whole extraosseous extensions. The corpectomy region was settled with tricortical iliac strut graft and surrounding area was filled with costal chip grafts. A total of 350 cc. blood was lost during the operation.

In the examination of the 4th post-operative month, MRI showed that the graft was in its original position. No compression on the cord was observed. But, persistent low signal intensity of the cord with focal atrophy most likely represented a myelomalacia of the cord due to chronic compression (Figure 3). However, the patient was free of complaints. Physical examinations was normal, including negative Babinski's sign and normoactive deep reflexes.

DISCUSSION

Vertebral hemangioma is most often an asymptomatic tumor. It has an estimated incidence of 10-12 % in the population (3, 4, 9, 10). The neurological symptoms may appear with the pressure on the spinal cord or roots caused by extra-osseous extensions. Unless it becomes symptomatic, conservative treatment is recommended (2, 3, 7, 8).

Several authors have reported that intermittent claudication is due to some vascular disease and degenerative conditions. They explain the intermittent nature of the symptoms with a decrease in the spinal cord blood supply during walking (1). We did not meet any report of a case with intermittent claudication complaints as the first symptoms.

We believe that the intermittent nature of the initial symptoms and their close relation with special postures and activities, is the result of gravity induced vascular dilatation in the hemangioma during walking and standing, which reverses with rest. This dilatation reduces the blood flow of the cord and leads to relative ischaemia (1).

As method of treatment, subtotal corpectomy after embolization, and excision of extra-osseous vascular structures and fusion with strut iliac graft was preferred. As hemangioma is a benign tumor, the method above is quite succesful to remove the pressure on the spinal cord; moreover, as the left lateral wall and posterior elements of the vertebral body are conserved, and

as the vertebrae with hemangioma is normally stronger than a normal vertebrae (2), additional stabilization was not applied. The patient was followed with brace.

CONCLUSION

Vertebral hemangioma should be thought of in cases with intermittent claudication, but with normal peripheric veins and nerves. Operative bleeding can be decreased to minimum with pre-operative embolization (5, 6).

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