

Case Report

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Severe Vertebral Erosion by Huge Symptomatic Pulsating Aortic Aneurysm

Aortic abdominal aneurysm rarely has been reported as causing osteolytic lesions of the spine. It may produce back and radiating pain patterns similar to those of several commonly encountered neurosurgical processes. We report a uncommon complication of huge pulsating aortic aneurysm causing severe vertebral erosion with incapacitating back and radiating pain.

KEY WORDS : Aortic aneurysm · Vertebral erosion.

INTRODUCTION

Patients presenting with pain secondary to abdominal aortic aneurysm demand prompt attention. Such cases could be encountered in a neurosurgical field such as lumbar disc disease, spondylosis, or cauda equina tumor. So aortic aneurysm should be included in the differential diagnosis of back pain syndrome⁵⁾. The diagnostic importance of back pain is emphasized because it is the second most common symptom of abdominal aortic aneurysm. We report a rare complication of pulsating aortic aneurysm causing severe vertebral erosion and incapacitating back and radiating pain.

CASE REPORT

A 84-year-old man with progressive incapacitating back pain over the preceding 3 months before visiting our institute. On examination, his groin and foot pulsation were normal. But, the motions of his spine were extremely painful. He also had radiating pain from low back and right hip to the medial thigh. The results of neurologic examination including straight leg raising test were normal. He had no fever and hematological tests were within normal limits. The results of polymerase chain reaction (PCR) for tuberculosis were negative. Lumbar magnetic resonance images (MRI) and computed tomography (CT) scans confirmed a marked lytic process in anterior part of L3 and L4. Saccular dilated aneurysm having entry from aortic intima to adventia contained residual contrast media with blood-contrast level was shown. Thickened atheromatous aortic wall with calcified plaque was also seen (Fig. 1, 2). Vascular surgical consultation was sought



Fig. 1. Sagittal, axial, and three dimensional computed tomographic images show a huge fusiform shaped aneurysm in distal abdominal aorta below the level of renal artery. The pressure erosion is also seen in L3 and L4 body.

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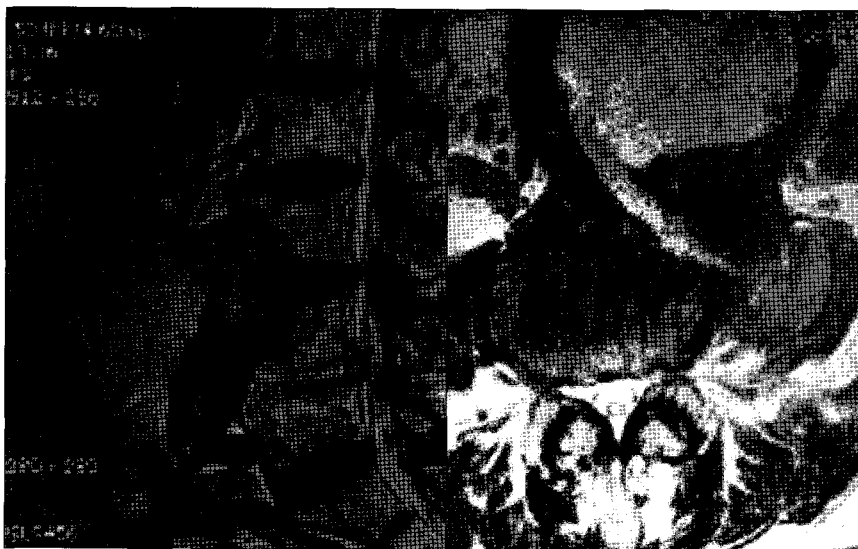


Fig. 2. Sagittal and axial magnetic resonance images show saccular dilated aortic aneurysm in distal abdominal aorta.

promptly and aortography was carried out and the patient was referred to vascular surgical department. Because of his advanced age and medical condition, he underwent interventional treatment without surgical treatment.

DISCUSSION

There is a well-recognized association between back pain and the existence of an abdominal aortic aneurysm^{2,4}. A few reports in the literature have described spinal complications of aortic aneurysm^{4,6}. As the reported cases show, complications of abdominal aortic aneurysm can cause erosions and may mimic tumors, infections or other vertebral pathologies. Consideration of the anatomy of these lesions provides some explanation for the pain patterns described previously. The mechanism of back pain in these lesions is generally thought to be the direct pressure of adjacent structures. Involvement of the iliohypogastric or ilioinguinal nerve would give pain radiation into the lower abdominal and inguinal area, testicle, and possibly the anterior thigh. Less commonly, involvement of the lateral femoral cutaneous nerve or femoral nerves could occur. Involvement of the sciatic plexus would require the aneurysm to include the common iliac or hypogastric arteries or to have dissection of a false aneurysmal sac over the pelvic brim⁵. Expediency in diagnosis and operative intervention is indicated by the established statistics demonstrating that the mortality of operation on the unruptured aneurysm is 5 to 7%, whereas the mortality of operation directed at the

ruptured aneurysm is 35 to 40%. This reinforces the need to promptly workup and treat these lesions to avoid a potentially disastrous outcome¹. Spine surgeons tend to consider such lesions highly suspicious for other spinal pathologies such as infective spondylitis or metastatic bone tumor. In our case, the decisive factors to make diagnosis of non-infective lesion were the lack of agreement on both the clinical features and laboratory findings as well as the radiologic interpretations. The defining characteristic of the present case was maintenance of disc height

at L3-L4 disc level; disc height gradually decreases with irregularity of end plates in the natural course of infective spondylitis. We consider this point as the most suggestive findings in differential diagnosis. Spine surgeons should be aware of the existence of this disorder, and that it can mimic infective spondylitis or other kinds of spine pathologies.

CONCLUSION

We report a rare case of huge pulsating aortic aneurysm causing severe osteolytic vertebral erosion. The neurosurgeons must include these aortic aneurysms in his differential diagnosis of back and radicular pain, especially in the geriatric population.

References

1. Crawford ES, De Bakey ME, Morris GC Jr, Garrett HE, Howell JF : Aneurysm of the abdominal aorta. *Surg Clin North Am* 46 : 963-978, 1966
2. Diekerhof CH, Reedt Dortmund RW, Oner FC, Verbout AJ : Severe erosion of lumbar vertebral body because of abdominal aortic false aneurysm : report of two cases. *Spine* 27 : E382-E384, 2002
3. Grevitt MP, Fagg PS, Mulholland RC : Chronic contained rupture of an aortic aneurysm mimicking infective spondylitis. *Eur Spine J* 5 : 128-130, 1996
4. Harris RD, Usselman JA, Vint VC, Warmath MA : Computerized tomographic diagnosis of aneurysms of the thoracic aorta. *Comput Tomogr* 3 : 81-91, 1979
5. Kramer PW : Back and leg pain secondary to abdominal aortic aneurysm. *Neurosurgery* 7 : 626-628, 1980
6. Mii S, Mori A, Yamaoka T, Sakata H : Penetration by a huge abdominal aortic aneurysm into the lumbar vertebrae : report of a case. *Surg Today* 29 : 1299-1300, 1999