Images in Cardiovascular Medicine

Vertebral Erosion due to Spontaneous Thoracic Aortic False Aneurysm

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A 78-year-old man was referred to our hospital because of his severe calcific aortic valve stenosis (mean gradient, 41 mmHg; maximum gradient, 68 mmHg) and dilation of the aortic root and ascending aorta (maximum diameter, 49 mm). Preoperative computed tomograms (CT) of the chest and abdomen revealed a contained spontaneous aortic rupture, localized at the posterior wall of the distal descending thoracic aorta and causing severe erosion of the 11th thoracic vertebra (T11) (Figs. 1A–B). These findings were confirmed with use of magnetic resonance imaging (Fig. 1C). The patient, a retired farmer, was asymptomatic for back pain and intermittent claudication, and his clinical history included no traumatic accidents or aortic surgery. A CT showed a descending thoracic aorta of normal size (Fig. 2). We speculated that a spine osteophyte was the chief cause of the contained

Fig. 1 ***A****) Computed tomogram (axial view) shows an 18 × 14 × 25-mm aortic false aneurysm at the posterior distal thoracic aorta (arrow).* ***B****) Computed tomogram (sagittal view) shows the aortic false aneurysm and severe erosion (>50%) of the anterior vertebral body of T11 (arrow).* ***C****) Magnetic resonance image (sagittal view) shows the aortic false aneurysm and erosion of T11 (arrow).*

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Fig. 2 *Computed tomogram (3-dimensional reconstruction) of the thoracic aorta shows the dilation of the aortic root and ascending aorta, and the normal size and tortuous course of the descending thoracic aorta. Arrow points to the aortic false aneurysm at the posterior distal thoracic aorta. The reconstruction does not show the obvious site of the aneurysm, probably because of thrombosis.*

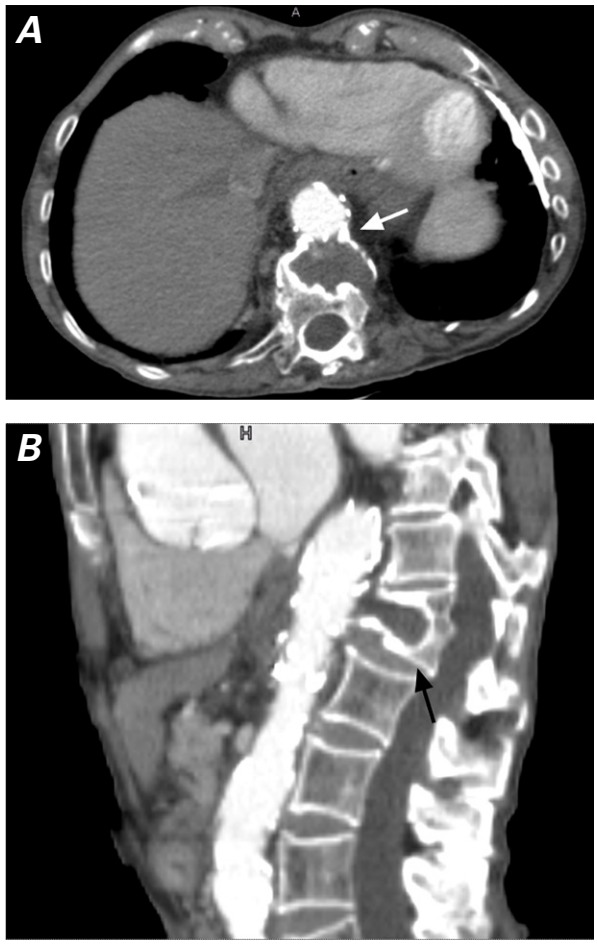

Fig. 3 *Computed tomograms.* ***A****) The axial view reveals the exclusion of the aortic false aneurysm (arrow).* ***B****) The sagittal view reveals the complete exclusion of the aortic false aneurysm and the absence of prosthetic endoleak (arrow).*

aortic rupture and the development of the aortic false aneurysm. The previously planned cardiac operation was delayed, and the lesion was treated with use of a 3 × 10-cm Bolton thoracic endograft (Bolton Medical, Inc.; Sunrise, Fla) (Fig. 3).

Comment

Vertebral erosion caused by a contained aortic rupture is a rare finding and is usually documented after previous abdominal aortic surgery, especially secondary to an aortic anastomosis, infective sequela, or disruption.[1-4] Vertebral spine osteophytes have been described as the main cause of aortic perforation and false-aneurysm development after traffic accidents.[5,6]

Our case combines 2 notable findings: a contained aortic rupture causing thoracic vertebral body erosion in the absence of previous aortic aneurysm or surgery, and a plausible atraumatic origin linked to a vertebral spine osteophyte.

References

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