Diagnostic Images

Aortic calcification

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The patient

A male aged 63 presented with acute chest pain.

Investigation

PA and lateral chest radiography, and thoracic computed tomography.

Comment

Aortic calcification is a common finding in the elderly, and is usually in the aortic knuckle and descending thoracic aorta, often being associated with atheromatous fusiform dilatation and tortuosity of the aorta. Dense calcification in the ascending aorta is uncommon in atheromatous aortitis but is almost pathognomonic of syphilitic aortitis with or without a saccular aneurysm. Calcification in the ascending aorta is readily distinguished from pericardial calcification but on the frontal view may be similar to calcification of the left atrium when grossly dilated as in mitral valve disease. However, the dilated left atrial appendage is more posterior and caudad on the lateral view. Serology was positive for syphilis. Anterior mediastinal cyst and dermoids may calcify but usually are seen in the younger age group.

On computed tomography, the calcification is seen to be thick, and there is a collection of fluid between the calcification and aortic lumen margin with a linear defect within the contrast-filled lumen indicating a dissection. The right pulmonary arterial trunk and the left atrium are moderately compressed as well as the main bronchi.

Figure 1 PA chest radiograph shows the obvious calcification of the ascending aorta on both the right and left margins of the mediastinum (arrows) as well as in the aortic knuckle.

Figure 2 On the lateral view the circumferential calcification is in the anterior mediastinum in the position of the ascending aorta. The trachea is displaced posteriorly and compressed distally.

Figure 3 Gross calcification in the wall of the dilated ascending aorta (A) with evidence of a dissection flap (arrow). The right main pulmonary artery (RPA) and the pulmonary trunk (LA) are compressed as well as the main bronchi. LPA = left pulmonary artery.