

Calcium sign of thoracic aortic dissection in Takayasu's arteritis

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DESCRIPTION

A 53-year-old woman with known chronic atrial fibrillation was referred for evaluation of abnormal chest film. She has been diagnosed with Takayasu's arteritis 10 years earlier when she underwent right subclavian-to-common carotid artery bypass grafting due to major aortic branches occlusion. Initial examination revealed totally irregular pulse with cardiomegaly. The blood pressure was normotensive without significant difference among all extremities.

Chest film unveiled cardiomegaly with long, diffuse calcified descending thoracic aorta (figure 1A, arrowheads). Notably, dilatation of the proximal descending thoracic aorta was suggestive of aortic aneurysm. The curvilinear calcification (figure 1A, arrow) medial to the aortic wall corresponded with the splitting of intimal calcification in CT scan (figure 1B,C: contrast-enhanced CT in coronal and axial planes, figure 1D: non contrast-enhanced CT in axial plane). The true lumen (T) was smaller and located medially to the false lumen (F).

Since there was no associated organ ischaemia, the patient was treated conservatively with the diagnosis of chronic, type B aortic dissection.

The risk factors of thoracic aortic dissection include bicuspid aortic valve, Marfan syndrome, uncontrolled hypertension, pregnancy and iatrogenic intimal tear during cardiac catheterisation. The atherosclerosis of the aorta also predisposes to dissection either from senile degenerative change or healed aortopathy as a result of chronic inflammation such as in Takayasu's arteritis. The common abnormal chest film findings include a widening of the mediastinum, deviation of the trachea or nasogastric tube to the right and left pleural effusion. The 'calcium or calcium split sign' was defined as a separation of two layers of the displaced intimal calcification from the outer aortic wall by at least 10 mm. However, the calcium sign is rather specific for the aortic arch dissection but it has low sensitivity.¹

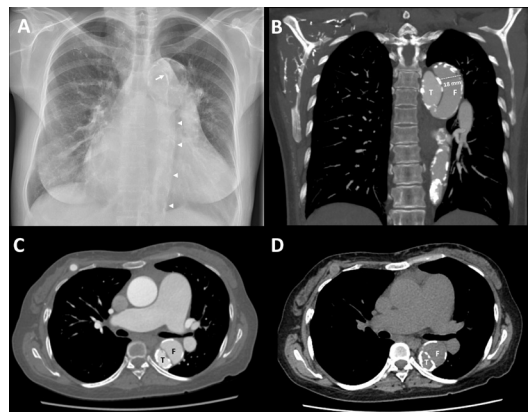


Figure 1 (A) Chest film showed cardiomegaly with diffuse calcified descending thoracic aorta (arrowheads). The curvilinear calcification (arrow) corresponded to the splitting of intimal calcification in CT scan (B and C: contrast-enhanced CT in coronal and axial planes, D: non-contrast-enhanced CT in axial plane). F, false lumen; T, true lumen.

Learning points

- ▶ Healed aortopathy from chronic inflammation found in Takayasu's arteritis is one of the risk factors of aortic dissection.
- ▶ The 'calcium or calcium split sign' was defined as a separation of two layers of the displaced intimal calcification from the outer aortic wall by at least 10 mm.
- ▶ The calcium sign is rather specific for the aortic arch dissection but it has low sensitivity.

Contributors VL and PC drafted the manuscript. MT edited the image. SB reviewed and revised the manuscript.

Competing interests None declared.

Patient consent Obtained.

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