The calcium sign of aortic arch dissection

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DESCRIPTION

A 62-year-old man, a case of hypertension, presented with severe and progressive upper back pain for 1 day. Physical examinations were unremarkable, except for a high blood pressure (178/102 mm Hg). The haemogram and biochemistry were within normal limits. Chest radiography showed cardiomegaly, mediastinal widening and the calcium sign at aortic arch (figure 1). ECG showed sinus tachycardia (106 bpm) and non-specific ST-T wave changes. A sudden loss of consciousness followed and cardiopulmonary resuscitation was performed immediately for pulseless electrical activity. Chest ultrasound showed fluid accumulation in left pleural cavity and fresh blood was noticed with thoracentesis. A diagnosis of thoracic aortic dissection with rupture into the left pleural cavity was made. Unfortunately, the patient died after 2 h resuscitation.

The diagnosis of aortic dissection is usually prompted by the presence of acute chest pain and mediastinal/aortic widening on chest radiography.¹ Nonetheless, the radiological findings of aortic dissection are usually non-specific and its diagnosis depends on a high index of suspicion.² The calcium sign defined as the separation of the intimal calcification from the outer aortic soft tissue border by more than 10 mm is a specific chest radiographic finding of aortic dissection.² Although it would be observed in about 14% of patients with descending aorta

dissection, this finding would be rare in patients with aortic arch dissection.³

Learning points

- ▶ The majority of chest radiographic findings in aortic dissection are not specific.
- ▶ The calcium sign indicating the separation of the intimal calcification from the outer aortic soft tissue border by more than 10 mm is specific for the diagnosis of aortic dissection.
- ▶ The calcium sign would be far more frequently observed in patients with descending aorta dissection than in those with aortic arch dissection.

Competing interests None.

Patient consent Obtained.

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Figure 1 Chest radiography demonstrates cardiomegaly, mediastinal widening and the calcium sign at aortic arch (arrows). The right panel is a magnified area of aortic arch.

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