Aortic intramural haematoma associated with pulmonary artery periadventitial haematoma

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DESCRIPTION

A 54-year-old man who has a medical history of untreated hypertension presented to the emergency department with sudden onset of back pain and sweat. His back pain suddenly started while he was washing the dishes. The pain was sharp, continuous and radiating to his chest. His vital signs were normal and physical examination revealed neither heart murmur nor pulse deficit. Laboratory test revealed elevated D-dimer level of 2.5 µg/mL (reference range <0.5 µg/mL), but normal troponin-T level. Electrocardiography was normal. Chest X-ray showed widened mediastinum.

Non-contrast enhanced and contrast-enhanced CT was obtained. Non-contrast enhanced CT showed crescentic high attenuation sign along the aortic wall from the ascending to the descending aorta (figure 1), whereas contrast-enhanced CT showed a hypoattenuating aortic wall, with no evidence of dissection (figure 2). The haematoma was extended along the aortopulmonary connective sheath (figure 3). The patient was transferred to the tertiary hospital and underwent the replacement of ascending aorta. He had an uneventful postoperative course.

Pulmonary artery periadventitial haematoma is a rare complication of IMH. Because ascending aorta and pulmonary trunk have a common adventitia at the root of the great vessels, blood from ruptured IMH in ascending aorta can extend along the pulmonary artery. Investigators reported the periadventitial haematoma may compress pulmonary artery and restrict the blood flow of pulmonary artery, mimicking pulmonary embolism.2

The treatment strategy for IMH is decided based on Stanford Classification and complication such as cardiac tamponade and organ ischaemia. Because patients with type A IMH can develop AD, aortic rupture or aortic aneurysm, the mortality...
Images in…

Patient’s perspective

I was really relieved to know the cause of my back pain.

Learning points

- Contrast-enhanced CT and also non-contrast enhanced CT should be performed for the patients with suspected acute aortic syndrome.
- Pulmonary artery periadventitial haematoma is one of the complications of Stanford type A intramural haematoma (IMH).
- The management of type A IMH is basically surgical intervention.

of patients with type A IMH treated medically is high, about 40%. Surgical management, which aims to prevent the progression, clearly reduces the mortality compared with non-operative management, so generally, operative management is indicated for the type A IMH. The patients who are haemodynamically unstable or have complications such as tamponade or impending rupture need timely surgery. If the patient is stable and has no complications on arrival, some CT features such as maximum aortic diameter ≥50 mm and maximum aortic wall thickness ≥11 mm are reported as predictors of the progression, so timely surgery is recommended in these patients.

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