

Cardiovascular Imaging In-a-Month

Bilateral Pleural Effusion

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CASE

An 83-year-old man was admitted with a low grade fever (37.5 °C) that had persisted for 5 days. Chest and cardiac examination showed no remarkable abnormality. Laboratory findings demonstrated elevated C-reactive protein level (10.5 mg/dl) without leukocytosis. Electrocardiography showed a slightly wide QRS without elevation of the ST segment. Chest radiography was performed on admission (Fig. 1 - A). A previous chest radiograph is shown (Fig. 1 - B).

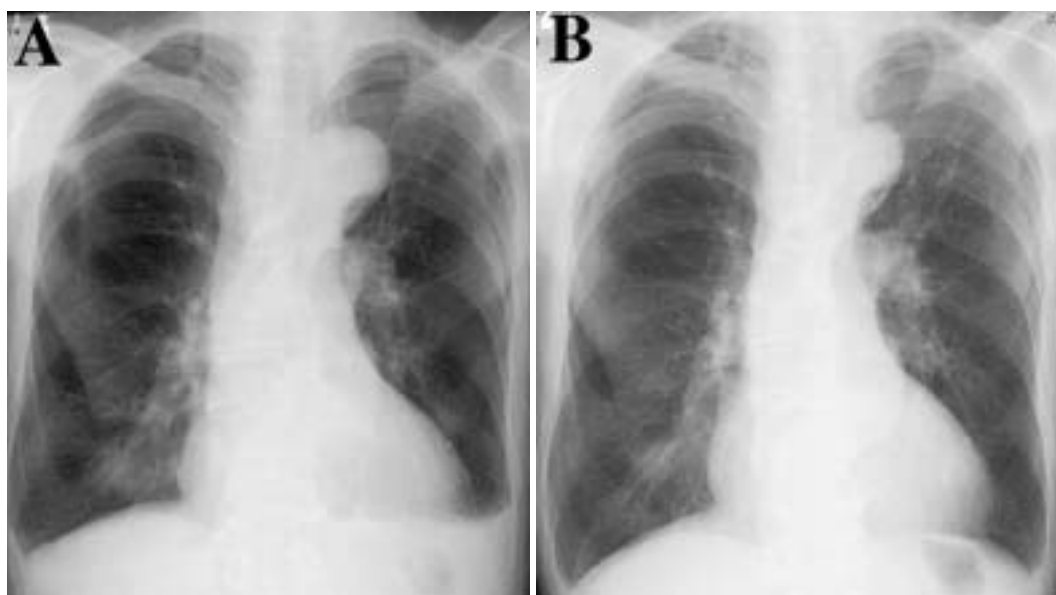


Fig. 1

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Point of Diagnosis

The chest radiograph performed on admission revealed an enlarged aortic knob with bilateral pleural effusion that was not present on the previous chest radiograph taken 6 months previously (Fig. 1). Aortic computed tomography images showed type B aortic dissection with bilateral pleural effusion (Fig. 2). The patient received medical treatment and died of respiratory failure due to aspiration pneumonia 4 weeks after admission.

The incidence of pleural effusion ranges from 25% to 87.5% in patients with acute aortic dissection^{1,2}). Our recent study demonstrated that pleural effusion was undetectable during the first 4 hr after the onset of aortic dissection, but consistently developed more than 4 hr after the onset¹). The prevalence of pleural effusion is 31.3% on the first day following aortic dissection, extending to 87.5% by the 15th day²). The etiology of pleural effusion associated with acute aortic dissection is generally considered to be regional inflammatory reaction around the dissecting aorta³). Pleural effusion may also be caused by systemic inflammatory reaction associated with acute aortic dissection, due to leukocytosis, high body temperature and elevated C-reactive protein²). However, another study found no relationship between pleural effusion and the type of dissection^{1,2}). The pleural effusion laterality in patients with aortic dissection is not yet well understood. The incidence of bilateral pleural effusion is higher than that of left pleural effusion (32 vs 10 of 42 patients)³). Prior to this report, only right pleural effusion was associated with acute

aortic dissection¹).

Pleural effusion may be associated with various diseases such as congestive heart failure, renal failure, liver cirrhosis, respiratory infection, malignancy and thoracic injury. Although the incidence of bilateral and unilateral pleural effusion is variable in acute aortic dissection, a diagnosis of the etiology of pleural effusion must be made with caution.

Diagnosis: Aortic dissection (Type B)

Key Words: Aortic disease (aortic dissection); Complications (pleural effusion); Computed tomography

References

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Fig. 1 Chest radiographs on admission (A) and 6 months previously (B)

Fig. 2 Computed tomography scans (aorta) with contrast medium

Left: Typical aortic dissection was revealed at the distal site of the aortic arch.

Right: Bilateral pleural effusion was present predominantly on the left.

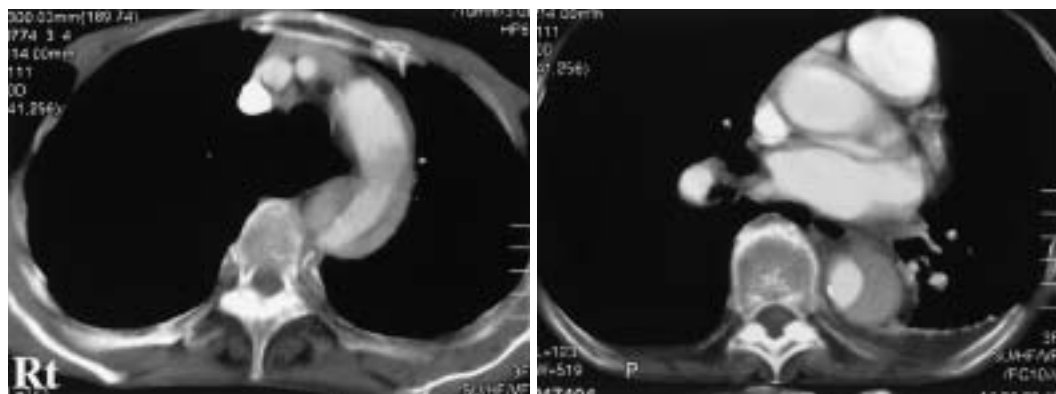


Fig. 2