SVC obstruction and cardiac tamponade

MAIN TEXT

A 53-year-old male subject with a history of coronary artery bypass grafting 9 years ago, was investigated for exertional dyspnoea and tiredness. The first echocardiography was done under suboptimal window, showing normal left ventricular ejection fraction and mild pericardial effusion (PE) with the largest collection 1.2 cm posteriorly. After being discharged home for one day, he was readmitted with increasing dyspnoea and orthopnoea. Jugular venous pressure was raised with systolic blood pressure about 100 mm Hg and not tachycardic. Chest x-ray did not reveal any significant lung pathology with cardiothoracic ratio 0.56. In view of the suboptimal echocardiography and inconsistent clinical signs of significant PE, the patient underwent dual source CT (DSCT) which demonstrated multiple lung nodules, lymphadenopathy and large PE compressing the superior vena cava (SVC). Urgent pericardial tapping yielded haemorrhagic effusion but no malignant cells seen. Metastatic adenocarcinoma was reported in the histopathology examination of the right supraclavicular lymph node.

Malignancy should be suspected in haemorrhagic PE.[1] Prior chest surgery, especially coronary artery bypass grafting, can cause scarring of the pericardium and loculated regional accumulation of PE. The physical signs of cardiac tamponade may be absent or atypical. DSCT confirmed the compression and scalloping of the heart chambers with actual cardiac tamponade and subsequent compression of the SVC (figures 1 and 2). There were concomitant right supraclavicular, hilar and mediastinal lymphadenopathy, lung nodules and pleural based lesions.

We highlight the utility of using DSCT in diagnosing atypical malignant PE and the discovery of SVC compression by the cardiac tamponade in a patient with prior cardiac surgery.

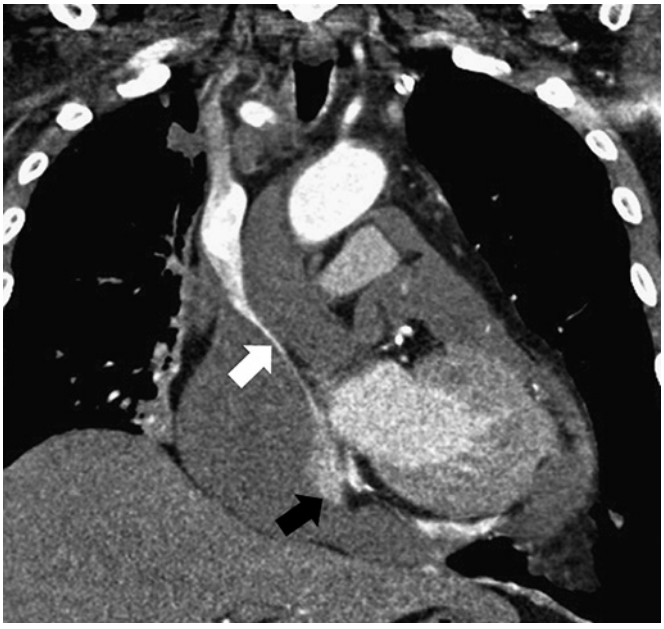

Figure 1 Coronal cardiac CT image in soft tissue setting showing compression of the superior vena cava (white arrow) and the right atrium (black arrow) by the pericardial effusion.

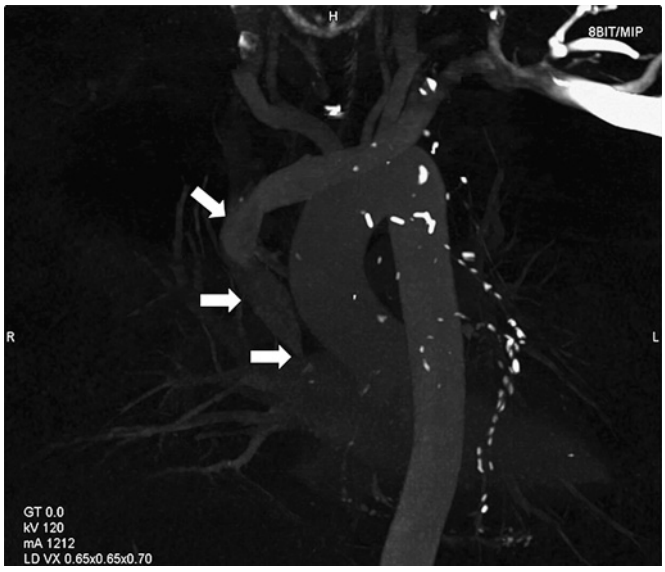

Figure 2 Volume rendering technique with maximum intensity projection of cardiac CT image showing the compression of the superior vena cava (white arrows) with abrupt tapering as it entered the right atrium.

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