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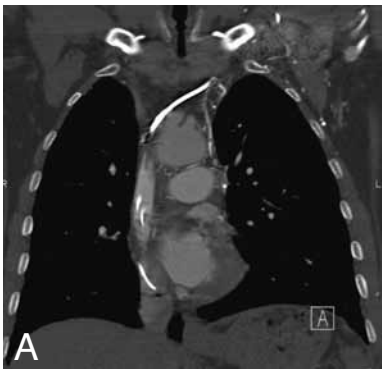
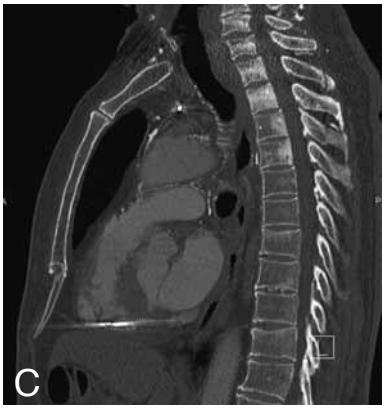
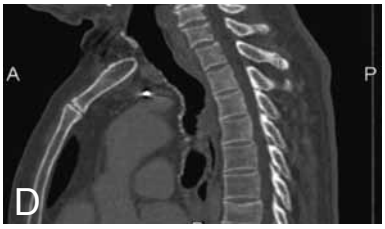
IMAGES IN CLINICAL RADIOLOGY







Osseous venous congestion simulating sclerotic bone lesions in superior vena cava syndrome

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A 77 year-old patient is admitted to the Emergency Department in April 2009, complaining of a one-month persistent face oedema. No amelioration was seen after stopping the treatment with Coversyl.

The case study of the patient shows a type II insulin-requiring diabetes, added to a polyneuropathy and a chronic renal insufficiency, a post-smoking emphysema, an anthracosillicosis, an acute coronary syndrome and a mild heart attack with ventricular tachycardia for which the patient benefited from the placing of an implantable cardiac defibrillator in July 2008.

Clinical examination on admission shows no particularity, except from facial oedema.

Blood test shows a renal insufficiency as well as a moderate increase in D-Dimers.

Cervical venous echo-Doppler US study shows a left subclavian vein thrombosis spread as far as the internal left jugular.

CT angiography of the thoracic aorta made at the same time confirms the presence of a left subclavian vein thrombosis and a left innominate vein thrombosis in the surrounding area of a pacemaker catheter, which is also partly surrounded by clots in the superior vena cava.

Many venous collateral pathways are visible in the parietal, muscular and left mediastinal areas (Fig. A, B).

The bone window analysis shows high density in several superior dorsal vertebrae, simulating osteo-condensing lesions (Fig. C).

In the context of anthracosillicosis and masses or pulmonary pseudomasses, a follow-up by thoracic CT-scan is recommended.

The areas of high bone density are visible on some of the CT scans, with density and extension varying whether an injection IV of an iodized contrast medium is given or not, as well as with the timing and also depending on the side (left or right arm) the injection was given.

In June, July and August 2009, without contrast, no lesion is seen (Fig. D).

In the above described case, on the scans made with injection, the venous congestion bound to superior vena cava syndrome could have been confused with a metastatic bone invasion.

Comment

The superior vena cava syndrome is a frequent entity, mainly manifesting itself by a swelling of the face and of the superior limbs and complicating in almost 90% of the cases a malignant tumor of mostly bronchial origin.

Investigation requires medical imaging report and Doppler US study, and also a thoracic CT-scan, looking for a stenosis or venous occlusion and also for a bronchial tumor.

The metastatic bone lesions found in the bronchial carcinomas are mainly lytic lesions. However, during treatment, the lesions can condense, showing a certain osteoblastic activity level.

In the above described case, on the scans made with injection, the venous congestion bound to superior vena cava syndrome could have been confused with a metastatic bone invasion.

The superior vena cava syndrome being in nearly 90% of the cases linked to the existence of a malignant tumor, it is advisable to recognize this type of image in order not to confuse them with possible metastases. In doubt, a late scan with or without contrast should allow to see the difference.

Reference

1. Jesinger R.A., Huynh B., Gover D.: Superior Vena Cava Syndrome Resulting in Osseous Venous Congestion Simulating Sclerotic Bone Lesions. *AJR,* 2009, 192: 344-345.

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