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## Chest

## Primary septic arthritis of the manubriosternal joint in an immunocompetent young patient: A case report

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## ABSTRACT

The aim of this article was to illustrate a case of primary septic arthritis of the manubriosternal joint, due to *Staphylococcus aureus* infection, in an immunocompetent 28-year-old male patient. The manubriosternal joint can be rarely involved in inflammatory processes, but pyarthrosis is even more unusual in an otherwise healthy adult. Although rare, pyarthrosis could be associated with significant morbidity and mortality, first of all because of spreading to mediastinal structures. Diagnosis is generally made thanks to imaging findings after clinical suspicion in a patient with anterior chest pain and swelling, fever, and raised inflammatory markers, especially when any risk factors are known. Management is generally aggressive because intravenous antibiotics and surgical debridement are necessary.

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### Case report

The current study reports the case of a 28-year-old male patient referred to the emergency department with a two-week history of a painful anterior chest wall swelling with malaise and fever.

The patient was a smoker, working as a disc jockey; he was an amateur mixed martial arts player, but denied recent episodes of a direct chest trauma.

There was no history of intravenous drug abuse.

Examination of the chest revealed an obvious tender and fluctuant swelling at the manubriosternal region associated with an overlying skin erythema.

On admission, the temperature was 40°C; laboratory tests proved neutrophilic leukocytosis (white cell count of  $18 \times 10^9/L$ , neutrophils of  $13.9 \times 10^9/L$ ) and raised inflammatory markers (C-reactive protein level of 7.6 mg/L).

The serology for HIV infection was negative.

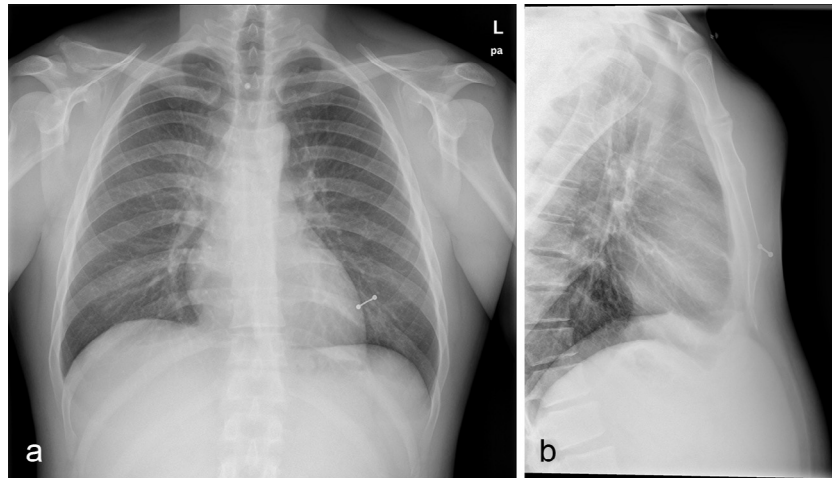
A chest roentgenogram was performed: the lateral view, with a lateral projection for the sternum, confirmed the presence

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**Fig. 1 – (A) Posterior-anterior (PA) chest roentgenogram and (b) lateral (L) view of the sternum, showing a soft-tissue swelling over the manubriosternal region; mild joint space widening and articular surfaces irregularity are noted.**

of a soft-tissue swelling; articular space widening, mild sclerosis, and irregularity on both sides of the manubriosternal joint were noted (Fig. 1).

The soft-tissue sonographic study revealed a lobulated, ill-defined, heterogeneously hypoechoic soft-tissue mass over the manubriosternal joint, appearing to communicate to the articular space. Increased vascularity in the periphery was seen on Doppler ultrasonography images (Fig. 2).

For further evaluation, a Computed Tomographic (CT) (64-row computed tomography scan, VCT; General Electric Healthcare, Waukesha, WI) chest scan was obtained before and after the intravenous administration of iodinated contrast material (Iomeron 400; Bracco SpA, Milan, Italy), showing an inhomogeneous, low-attenuation, poorly delimited 9-cm mass,



**Fig. 2 – Soft-tissue ultrasonography, longitudinal plane, demonstrating a lobulated heterogeneously hypoechoic mass (straight arrows) over the manubriosternal joint (curved arrow).**

centered on the manubriosternal joint; note was made of associated small air bubbles (Fig. 3). The lesion extended anteriorly into the chest subcutaneous tissue and posteriorly into the anterior-superior mediastinum, without any signs of involvement of the pericardium, great vessels, pleural linings, or the lungs. After an intravenous contrast media administration, peripheral enhancement was noted. The manubriosternal joint, well depicted in the sagittal plane reformatted images, appeared irregular and widened (Fig. 4). All these findings were suggestive of a suppurative process arising from the manubriosternal joint, spreading to the anterior chest wall subcutaneous tissue and to the anterior-superior mediastinum.

After a transverse incision was made over the presternal region, the entire destruction of the manubriosternal joint was demonstrated (Fig. 5).

The patient underwent a video-assisted minithoracotomic approach to evacuate the mediastinal inflammatory collection: a large volume of purulent fluid and necrotic tissue were



**Fig. 3 – Enhanced computed tomography axial image of the mass; note is made of the presence of small air bubbles related to suppurative soft-tissue involvement (arrows).**

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