

# Mediastinal abscess in an immunocompromised patient which progressed from sternoclavicular joint septic arthritis

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## DESCRIPTION

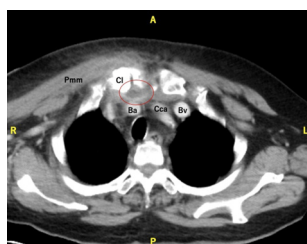
Sternoclavicular joint septic arthritis is a relatively rare but serious joint infection, which is sometimes complicated by chest wall abscess and mediastinitis. It can spread by direct extension into a neighbouring structure through the space formed by the cervical fascia.<sup>1</sup> Common risk factors include an immunocompromised host, diabetes mellitus, trauma, infection at a distant site and intravenous drug use.<sup>2</sup>

We present a case of sternoclavicular joint septic arthritis during regular steroid use, which resulted in mediastinitis through the pretracheal space despite early puncture drainage.

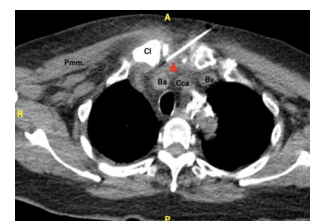
A woman in her early 80s with right shoulder pain presented to the emergency department. She had been taking prednisolone (5 mg daily) for 3 years to address non-specific numbness in both upper limbs. She had no other comorbidities.

She had stable vital signs, but had a fever of 38.8°C and had redness and tenderness around the right sternoclavicular joint. Her C reactive protein (CRP) level was 25.6 mg/dL. The differential diagnosis at this point was sternoclavicular joint septic arthritis; crystalline arthritis as it was an acute-onset monoarthritis.

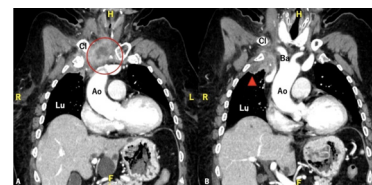
There was also the possibility of synovitis, acne, pustulosis, hyperostosis and osteitis (SAPHO) syndrome or cellulitis, but SAPHO syndrome did not meet the diagnostic criteria.<sup>3</sup> CT revealed an abscess localised to the sternoclavicular joint (figure 1), leading to the patient being diagnosed with sternoclavicular joint septic arthritis. Emergency CT-guided puncture drainage was performed on the same day (figure 2), and the patient was admitted.



**Figure 1** On admission, CT showed an abscess localised to the sternoclavicular joint (circle). a, anterior; Ba, brachiocephalic artery; Bv, brachiocephalic vein; CCa, common carotid artery; Cl, clavicle; L, left; Pmm, pectoralis major muscle; P, posterior; R, right.

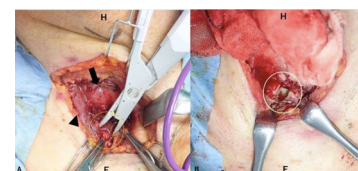


**Figure 2** On admission, emergency CT-guided puncture drainage was performed for the sternoclavicular joint abscess (arrowhead). a, anterior; Ba, brachiocephalic artery; Bv, brachiocephalic vein; CCa, common carotid artery; Cl, clavicle; L, left; Pmm, pectoralis major muscle; P, posterior; R, right.



**Figure 3** CT re-examination (A, B) on the fifth day showed an enlarged sternoclavicular joint abscess (circle) and extension into the mediastinum and extrapleural spaces (arrowhead). Ao, aorta; Ba, brachiocephalic artery; Cl, clavicle; F, foot; H, head; Lu, lung; L, left; R, right.

Ampicillin-sulbactam treatment was initiated. On day 4, *Proteus mirabilis* was cultured from her blood and abscess samples and by day 5, her general condition had not deteriorated, but her fever persisted. CT was reperformed, and the findings showed that the sternoclavicular joint abscess had increased in size and had extended into the mediastinum and the right extrapleural



**Figure 4** Emergency surgical drainage using a cervical approach on day 5. A serous abscess (yellow circle) between the thyroid gland (arrow) and the sternum was observed. There were no necrotic findings in the sternocleidomastoid muscle (arrowhead) (A). An abscess found in the sternoclavicular joint capsule (white circle) was drained (B). F, foot; H, head.



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## Images in...

space (figure 3). No new abscess formation was observed at other distant sites.

Emergency surgical debridement was performed. Surgical observations included an abscess in the sternoclavicular joint capsule, but no signs of destruction or necrosis of the clavicle or sternum (figure 4). Therefore, extended resection of the sternoclavicular joint was not performed.<sup>4</sup> Moreover, no necrosis was found in the sternocleidomastoid muscle.

The patient showed good postoperative outcomes, with resolution of fever as well as resolution of sternoclavicular joint redness, swelling and tenderness within a few days. Her CRP levels eventually normalised.

A drain was placed in the sternoclavicular joint during surgery and continued to wash the joint until day 14. *P. mirabilis* was cultured from the intraoperative specimen as well.

Antibiotics were administered for 6 weeks as per the standard dosing period for deep abscesses. The antibiotic regimen was changed from ampicillin–sulbactam to amoxicillin–clavulanate on day 15.<sup>1</sup>

Her CT on day 20 showed resolution of the extrapleural and mediastinal abscesses, and a decrease in the extent of her sternoclavicular joint abscess. She was discharged on day 22. Steroid treatments were tapered off during hospitalisation.

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Case reports provide a valuable learning resource for the scientific community and can indicate areas of interest for future research. They should not be used in isolation to guide treatment choices or public health policy.

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### Learning points

- ▶ Systemic steroid administration is a risk factor for the development and progression of sternoclavicular joint septic arthritis.
- ▶ If sternoclavicular joint septic arthritis does not resolve after initial treatment, early imaging to reassess abscess expansion and additional drainage should be considered.

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