

## Quiz: Sternoclavicular Joint Swelling in a Previously Healthy Adult

Stergios Skrimpas, Asterios Polyzos, George N Dalekos\* and Kalliopi Zachou

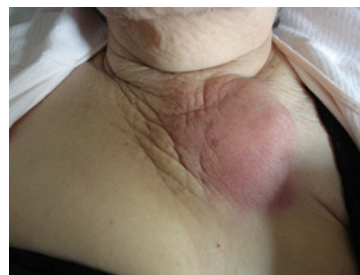
Department of Medicine, Medical School, University of Thessaly, Larissa, Greece

### History, Presentation and Diagnosis

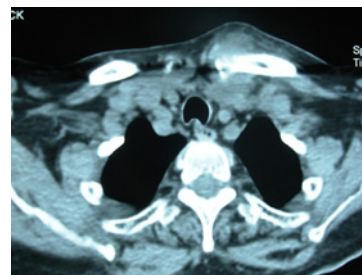
A 77-year-old woman was admitted to our department because of 30-day history of low grade fever (up to 38.5°C) and pain in the left sternoclavicular joint. Twenty days before admission a progressively worsening swelling of the area occurred. She did not report any trauma and apart from low grade fever, the patient had also general symptoms such as loss of appetite, weakness and malaise. Her past medical history revealed only mild arterial hypertension. The patient had never received any kind of immunosuppression in the past whereas, there was no history of tuberculosis, diabetes mellitus, iv drug abuse, immune dysfunction or other known risk factors which have been associated with the presence of sternoclavicular joint infection (SCJI) [1]. She had been treated previously by her own general practitioner for 10 days before admission with oral beta-lactam antibiotic and cephalosporin without any improvement. On admission, physical examination revealed a dolorous, inflammatory lesion of the left sternoclavicular joint (Figure 1) and movement limitation of the left arm, whereas there was no ascites or peripheral lymphadenopathy. Laboratory work-up showed only moderate elevation of CRP (5.7 mg/dL; upper normal limit < 1 mg/dL), increased erythrocyte sedimentation rate (ESR; 66 mm/1h), positive tuberculin test (20 mm) while chest x-ray was normal. MRI of the area showed mild osteomyelitis of the clavicle and cellulitis of the surrounding tissues with no effusion at SCJ. The CT scans of the thorax, upper and lower abdomen and retroperitoneal space revealed no lymphadenopathy or pulmonary lesions. After drawing several sets of blood cultures, treatment with daptomycin was started at a dose of 8 mg/kg/day. We chose daptomycin as unfortunately in our area the rates of community- and hospital-associated methicillin resistant *Staphylococcus aureus* (MRSA) infections have been increased from 14.5% in 2000 up to 40-50% in 2006 and 65% in 2007-2009 [2,3]. Therefore, in our practice we usually manage severe infections of soft tissues, bone or spine initially with vancomycin, teicoplanin or daptomycin until a positive culture with sensitivity tests was obtained [4].

The fifth day of treatment, because of negative results from blood cultures, lack of improvement and continuation of the fever, ceftazidime was added empirically at a dose of 2 g iv q8h in case of *Pseudomonas aeruginosa* or other Gram (-) bacteria infection were implicated. This combination of antibiotics was administered for 14 days in total. Because of failure of the conservative medical treatment a new imaging study with CT was decided which, revealed deterioration of the lesion with development of collection (7 x 5 x 5 cm) expanding to the sternocleidomastoid and the major thoracic muscles but without any extension to the mediastinum (Figure 2). These findings led to the classification of SCJI of the patient as stage 3 according to Abu Arab et al. [5] report. Subsequently, surgical management was decided in an attempt firstly, to identify the causative agent and secondly, drain and debride probable necrotic tissues. Incision, curettage and drainage of the collection were performed with debridement of some necrotic tissues. Characteristically, the drainage of the pus showed a

typical caseous necrotic material. Using the RT-PCR technique [6] mycobacterium tuberculosis was rapidly identified in the biological material obtained by the abscess drainage; the development of mycobacterium was also confirmed subsequently by culture of the pus. Treatment with ceftazidime and daptomycin was stopped immediately. Investigation by molecular techniques showed absence of the known mutations of mycobacterium tuberculosis which have been associated with resistance to the first-line anti-tuberculosis drugs (rifampicin and isoniazid) [7]. In addition, the sensitivity tests of the isolate revealed very good profile for all known anti-tuberculosis drugs. Therefore, treatment with rifampicin 600 mg per day and isoniazid 300 mg per day for 9 months combined with pyrazinamide 2 g per day for the first two months was started. After 10 days of anti-tuberculosis treatment the patient was afebrile, the CRP and ESR were within normal limits



**Figure 1:** Profound inflammatory lesion of the left sternoclavicular joint proved to be due to mycobacterium tuberculosis involvement of the joint.



**Figure 2:** CT scan of the patient with left sternoclavicular joint infection showing remarkable pus collection at the left sternoclavicular joint.

**\*Corresponding author:** George N Dalekos, MD, Ph.D, Professor of Medicine, Head, Department of Medicine, Medical School, University of Thessaly, 41110 Larissa, Greece, Fax: +30 241350 1557; E-mail: [dalekos@med.uth.gr](mailto:dalekos@med.uth.gr)

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and she was discharged in a very good health. Last clinical follow-up one and two years after initial presentation, the patient's general health remained excellent with none attack of fever or signs of SCJI.

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