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Tuberculosis of the sternoclavicular joint: A case report

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Abstract
Tuberculosis may affect almost all part of the body. However, it is very uncommon for tuberculosis to involve the sternoclavicular joint. We report the case of a 40-year-old female presented with pain and swelling of the medial edge of the right clavicle. A focused Computed tomography and early biopsy had help in timely diagnosis. The patient was put on anti-tuberculosis chemotherapy for on year. After treatment, the clinical and functional evolution were good.

Keywords: Sternoclavicular joint; tuberculosis, osteoarticular

Introduction
Tuberculosis (TB) is a common disease in developing countries [1]. Fifteen percent of TB patients have extra pulmonary lesions of which 1-3% are bone and joint lesion [1]. Tuberculosis of the sternoclavicular joint involvement represents less than 0.5% of cases [1]. The onset of symptoms usually begins from the medial end of the clavicle as an insidious onset painful swelling of joint [1, 2]. Despite the availability of advanced diagnostic facilities, TB of the sternoclavicular joint often poses diagnostic problems, leading to a delay in treatment [1, 2]. We report a case of a 40-year-old female who complained of a swelling over the right upper chest that was confirmed as TB of the sternoclavicular joint by surgical biopsy specimen to the swelling. The patient was put on antituberculosis chemotherapy for one year. After treatment, the clinical and functional evolution were satisfactory.

Case Report
A 40-years-old female had consulted for painful swelling on the right-side sternoclavicular joint evolving two months. There was no history of pulmonary TB, injury or any associated constitutional symptoms such as fever or weight loss. The swelling had gradually increased in size associated with pain continuous and limited to the site of the lesion. There was no history of acute episodes of pain. The clinical examination revealed localized swelling (5cm x 4cm) at the level of right sternoclavicular joint with mild tenderness in the affected area. There were no signs of inflammation. The overlying skin was healthy (Fig. 1). Laboratory tests, including white blood cell count and differential count, were within normal limits. Serological tests for human immunodeficiency virus were negative. C- reactive protein was normal (4mg/L). Chest X-ray did not show any pulmonary lesion. However, the possibility of TB was considered. The left sternoclavicular joint was normal. Computed tomography (CT) scan showed a dense mass with destructive osseous change (lytic lesion) in the right sternoclavicular joint (Fig. 2, arrows). Histological studies of a surgical biopsy specimen confirmed the diagnosis of TB. Biopsy results showed features consistent with tuberculosis - giant cell granulomas with central caseous necrosis and Langhian's-type giant cells. The presence of central caseous necrosis was highly suggestive of TB. There were numerous epithelioid cells with a pale pink cytoplasm and indistinct boundaries with an oval or an elongated nucleolus (Fig. 3). After confirmation of diagnosis, antitubercular therapy (ATT) consisting of four drugs: rifampicin (10mg/kg/ daily), isoniazid (5mg/kg/ daily), ethambutol (20mg/kg/ daily) and pyrazinamide (30mg/kg/ daily) were administered for two months. The chemotherapy protocol was continued with isoniazid and rifampicin for ten months. The clinical, hematological, and computed tomography parameters showed complete healing of the lesion after one year of treatment with antitubercular therapy (Fig. 4). After two years of follow-up, the patient shows no signs of recurrence.

Fig 1: Clinical photograph of the patient showing swelling of the right sternoclavicular joint.

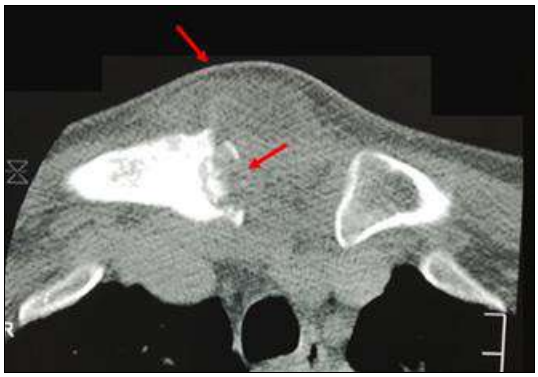

Fig 2: CT scan demonstrating swelling of the anterior chest wall and retrosternal extension of the mass with lytic lesion of the right sternoclavicular joint (red arrows)

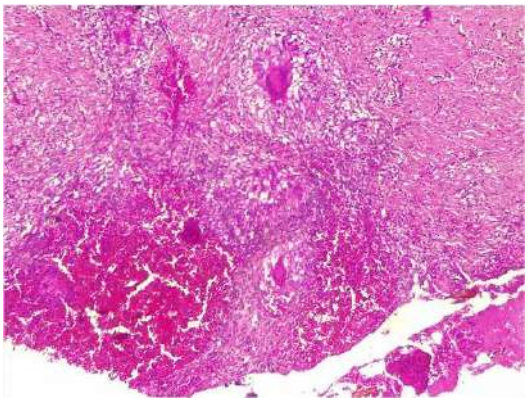

Fig 3: The histo-pathological sample of biopsy of clavicle with surrounding soft tissue showing tubercular granuloma with Langhans-type giant cells and numerous epithelioid cells

Fig 4: Clinical picture with healed lesion, b CT scan taken two years after antitubercular therapy showed complete healing of the lesion. But there are residual cavities in the joints.

Discussion

Osteoarticular TB is chronic disease that mostly affects weight-bearing joints [3]. The sternoclavicular joint involvement is infrequent, leading to a delayed diagnosis [3]. The pathogenesis of sternoclavicular tuberculosis remains controversial [3,4]. The blood supply to the joint comes from

internal thoracic artery and suprascapular artery and hematogenous spread remains the most common accepted etiology [3]. However, contiguous spread from apical pulmonary tubercular focus has also been reported [4]. In our case the patient had not history of pulmonary tuberculosis. We believe that contiguous involvement would only occur in a case of pulmonary TB, where the symptomatology would be very obvious. Additionally, the rarity of involvement of the sternoclavicular joint goes against the notion of direct spread, otherwise all cases of pulmonary TB would be at risk for involvement of either the sternum or the ribs [5]. Sternoclavicular tuberculosis is usually insidious in onset [4]. Thus, a high level of suspicion is necessary to make the diagnosis in patients who present with painful or painless swelling, cold abscess, as in the case of our patient. In our case pain was not so severe as would be expected in cases having septic arthritis, nor were local symptoms very marked. The swelling was significantly palpable, in spite of the fact that a large part of the caseous material had collected posteriorly in the mediastinum (as seen on the CT scan). Due to a confluence of structures, this region is poorly visualized by plain radiographs [4]. Modern imaging methods like CT scan give excellent detail and magnetic resonance images (MRI) can demonstrate soft tissue swelling [3,6,7,]. However, Financial limitation and lack of availability of MRI at most of the hospitals in our country makes this a difficult procedure of choice. The differential diagnosis of this problem is rather complex, as all rheumatic disorders like rheumatoid arthritis, ankylosing spondylitis, Tietze syndrome [5] come into the picture. In monoarticular swelling, conditions like sternoclavicular hyperostosis, condensing osteitis and necrosis with infection should also be considered [3,5]. A tuberculous abscess of the sternoclavicular joint may be misdiagnosed clinically as a tumor. Therefore, it is important to consider tuberculous infection as a possible cause of swelling near the sternoclavicular joint [4,8]. The diagnosis was confirmed on biopsy materiel that was analyzed a histology [9]. When the infection is diagnosed at an earlier stage than it was in our patient treatment with antituberculosis agents alone may be sufficient, this is the protocol followed at most centers in our country. In spite of the fact that all cases of osteoarticular TB are not routinely operated at our center, we believe that in cases with abscess formation, surgical debridement is essential. In the present case, surgical debridement at the time of open biopsy promoted early healing in this case.

Conclusion

Sternoclavicular tuberculosis is an unusual condition and requires a high index of suspicion for an early diagnosis. A focused sternoclavicular CT scan or magnetic resonance images and early biopsy may help in timely diagnosis. Early commencement of ATT has overall good clinical and functional results. However, the risk of reactivation of tuberculosis necessitates careful long-term follow-up'.

Consent

The patient included in this study voluntarily agreed on the inclusion of materials in this work by signing a written consent form. The informed consent explained the premise of this report, the state of his anonymity within the report and the confidentiality of her personal information.

Conflict of Interest

Authors declare no conflict of interest.

Authors contribution

KJEK wrote the introduction, the clinical presentation, the discussion, and the abstract. KLK participated in the writing of the discussion, JRA also revised the final form of the report. ANK, participated in the discussion, abstract, gathering data and images from the patient and health record system. MK wrote the figure's description and final form of the report.

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