TUBERCULOSIS OF STERNOCLAVICULAR JOINT: DIAGNOSTIC DILEMMA – A CASE REPORT

INTRODUCTION
Mycobacterium tuberculosis with impunity can attack any organ or tissue of the human body. Currently there is world wide resurgence of tuberculosis due to HIV pandemic and a host of other predisposing factors. A high index of suspicion is indispensable especially in high tuberculosis burden countries and immuno- compromised patients in Euro-Zone and United States1.

There is a continuous rise in the number of tuberculosis cases all over the world despite global efforts to control this menace. There were an estimated 9.27 million new cases of tuberculosis worldwide in 20072. Pakistan ranks 8th amongst the countries with highest burden of tuberculosis in the world and contributes about 44% of tuberculosis burden in the Eastern Mediterranean Region (EMRO). According to the World Health Organization (WHO), the incidence of sputum positive tuberculosis cases in Pakistan was 80 and for all types 177 and prevalence was at 304/100,000. Tuberculosis was responsible for 5.1% of the total national disease burden in Pakistan3. Diagnosis of extrapulmonary tuberculosis pose challenges to physician’s clinical acumen as is evident from the present case of Mycobacterium tuberculosis infection at an unusual site of sternoclavicular joint. We reviewed the literature and present a rare case of tuberculosis of SCJ4-10.

CASE REPORT
A 22 years old young pregnant woman in the last trimester presented with swelling over right sternoclavicular joint region (Fig.1), with pain especially on movement of shoulder and fever off and on over the last two months.

Clinical Examination
On general examination no lymphadenopathy was noted. On local examination there was a globular, non pulsating swelling of right SCJ-region measuring 4 x 5cm, slightly tender, hard in consistency, covered with normal skin and local temperature was normal. The opposite (left) SCJ was normal in appearance. The shoulder and scapular movements were painful on right side.

Laboratory Workup
Hb 9.1 g/dl, ESR: 30 mm during 1st hour (Wintrobe method), WBC 10.2x106 cells/L polymorphs 45%, lymphocytes 49%, C reactive protein normal (<8 Iu/L), S1 Fibrinogen and Rheumatoid factor were negative; Chest X-ray postero-anterior view (after covering the gravid abdomen with lead jacket) was free of remarkable radiological findings. X-ray of right SCJ were inconclusive.

MRI chest with focal examination of SCJ on T1 and T2 weighted images showed a soft tissue mass around the joint with destruction of the joint and fluid retention in the joint (Fig. 2).
**Fig. 2: MRI T2 of the left SCJ-swelling (marked by long arrow)**

It was reported as a suspected case of tuberculosis, neoplasia or osteomyelitis by the radiologist.

**DISCUSSION**

Infection of sternoclavicular joint is rare and often misdiagnosed at the initial presentation. It has not been reported in literature from Pakistan. In a series of 75 cases of tuberculosis of the body joints, sternoclavicular joint was involved in only one case and of 1074 cases of osteoarticular tuberculosis only 7 cases were reported involving the clavicle and SCJ.

There is a distinction between subcontinental type of arthritis of sternoclavicular joint and European type. The former is predominantly caused by Mycobacterium tuberculosis while later by pyogenic organisms. Ross et al reviewed arthritis cases and found that tuberculosis of sternoclavicular joint accounted for only 1% while Staphylococcus aureus was responsible for about 49% of cases. The key means of infection in European sternoclavicular joint arthritis was central venous line and drug addiction. Other pathogenic organisms reported in sternoclavicular joint arthritis were Pseudomonas spp. and Brucella melitensis in areas of the world where brucellosis was rife such as Jordan desert, Palestine, Latin American countries especially Peru. The pathogenesis of sternoclavicular joint infection is not fully understood but appear to be due to blood supply of the joint (hematogenous) or by contiguity from infected scalene lymph node or directly from reactivated apical pulmonary focus. In almost all cases the disease (either primary tuberculosis or pyogenic) is unilateral. However bilateral involvement has been rarely reported.

We propose the following predisposing factors for subcontinental (tuberculosis) type and the European (pyogenic) type.

In our case like many others MRI considered diagnostic may not always be decisive. The riddle of the diagnosis of such swelling was only demystified by FNA cytology report in our case as well as others. Regarding culture and sensitivity, in our case it did not yield any growth on common media and Lowenstein Jensen media. Even on Ziehl-Neelsen stain it was reported negative in contrast to findings of Shah et al, where it was positive on ZN stain and there was no growth of Mycobacterium tuberculosis on culture.

According to Robert et al sternoclavicular joint is difficult to visualize accurately on routine bone scans and is, therefore, of little value in its diagnosis.

FNAC report was of paramount importance and provided conclusive information. We, therefore, started anti-tuberculosis medications after being certain about the weight of the patient and to be taken on empty stomach in early morning. After complete treatment course swelling disappeared, patient felt well and her weight also increased.

**CONCLUSIONS**

To the best of our knowledge this is the first reported case of tuberculosis of sternoclavicular joint from Pakistan. Although a rare involvement clinicians should include it in examination of head and neck. MRI and FNAC are of utmost importance in vanishing perplexity.

**ACKNOWLEDGEMENT**

We are thankful to Mr. Shehbaz (librarian Dow University of Health Sciences Karachi), Mr. Hanif Khatri, Mr. Khalilullah Irfan and Sohan Qadir Khan for typing manuscript.

**Reference**

1. Swaminathan S, Narendran G. HIV and tuberculosis in India; J. Biosci. 2008; 33: 527–537