

# Tubercular Arthritis of Sternoclavicular Joint: A Case Report.

Satish Sachdeva<sup>1</sup>, Satinder Pal Kaur<sup>2</sup>, Rama Garg<sup>3</sup>, Tarvinderjit Khurana<sup>4</sup>, Saruchi Garg<sup>5</sup>, Ashish Jindal<sup>6</sup>

<sup>1</sup>Associate Professor, Department of Medicine, GMC, Patiala.

<sup>2,3</sup>Assistant Professor, Department of Obstetrics and Gynaecology, GMC, Patiala

<sup>4</sup>Senior Resident, Department of Medicine, GMC, Patiala.

<sup>5</sup>Junior Resident, Department of Medicine, GMC, Patiala.

<sup>6</sup>Junior Resident, Rajarajeswari medical College, Bangalore.

Received: September 2016

Accepted: September 2016

**Copyright:** © the author(s), publisher. It is an open-access article distributed under the terms of the Creative Commons Attribution Non-Commercial License, which permits unrestricted non-commercial use, distribution, and reproduction in any medium, provided the original work is properly cited.

## ABSTRACT

Sternoclavicular joint (SCJ) is a rare site for occurrence of tubercular arthritis. Diagnosis often gets delayed due to rarity, leading to annoyance to patient. Here we report a case of 66 years old female who presented to us with painful swelling of Right>Left sternoclavicular joint. Diagnosis was clinched by clinical evaluation, appropriate imaging and strongly positive Interferon gamma release assay and fine needle aspiration cytology. Patient was put on ATT with significant improvement after 2 months.

**Keywords:** Tubercular Arthritis, Sternoclavicular Joint.

## INTRODUCTION

Bone and joint tuberculosis (TB) is an ancient disease. Evidence of osteoarticular TB has been detected in Egyptian mummies, Iron Age remains from Asia and skeletons of Europeans living in the middle Ages by histological or polymerase chain reaction (PCR) study. Mycobacterium tuberculosis is by far the most common cause of mycobacterium osteomyelitis and arthritis worldwide.<sup>[1]</sup> Bone and joint tuberculosis is encountered in all age group. No bone is immune from involvement by TB, and the arthritis is mono-articular in 90% of cases. The most frequently involved joints in adults are the weight-bearing joints such as hip, knee, shoulders, or elbow.<sup>[2]</sup> Sternoclavicular joint (SCJ) is a rare site for the occurrence of tubercular arthritis. It accounts 1% - 2% of all cases of peripheral tubercular arthritis.<sup>[3]</sup> This case report describes a rare presentation of skeletal tuberculosis involving sternoclavicular joint.

### Name & Address of Corresponding Author

Dr. Satish Sachdeva  
Associate Professor,  
Govt Medical College,  
Patiala, Punjab, India.

## CASE REPORT

A 66-year-old married female under extreme mental stress, presented in the outpatient department with

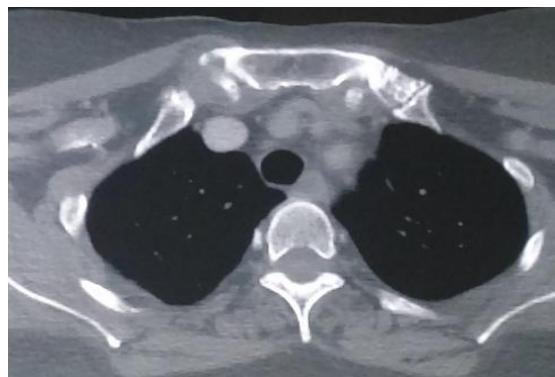
swelling over right sternoclavicular region for the last 3 months. She denied any history of fever, night sweats, chronic cough, dyspnea, loss of appetite or weight loss. Physical examination showed an averagely nourished, well built female. Body (oral) temperature was 37.3°C, pulse rate was 88/min, and blood pressure was 120/80 mmHg in right arm in supine position. The swelling over right SCJ was globular, cystic; with no pulsation and tender to touch ,measuring 2 cm x 2 cm.[Figure 1] The skin was stretched and shiny, but there was no sinus. There was no cervical or axillary lymphadenopathy. The palpation of the remaining clavicle was unremarkable. The shoulder and the Scapulo-thoracic movements were normal and painless. Laboratory findings revealed hemoglobin 11.1 g/dl; total leukocyte count (TLC) within normal limits and an erythrocyte sedimentation rate (ESR) of 21 mm in the 1st hour (Westergren method). Mantoux (tuberculin) test was negative. X ray sternoclavicular joint AP view demonstrated no significant abnormality. Fine needle aspiration cytology of swelling right clavicle was suggestive of granulomatous tuberculosis.

Ultrasonography of Right Sternoclavicular joint revealed small cystic to solid SOL seen near medial margin of right clavicle measuring approx. 2.4 x 2.3 cms with surrounding bones and vessels appearing normal.



**Figure 1:** Clinical Photograph Showing swelling in Right Sternoclavicular area.

Contrast Enhanced Computed tomography of the Sternoclavicular joint revealed asymmetrically widened sternoclavicular joint space (Right>>Left) with suspicion of Synovial hypertrophy or effusion [Figure 2].



**Figure 2:** CECT Sternoclavicular joint:  
Asymmetrically widened sternoclavicular joint space  
(Right>> Left).

There were erosions in articular surface of manubrium sterni more on right side and subtle irregularity and sclerosis affecting inferior articular surface of medial end of right clavicle [Figure 3].



**Figure 3:** CECT Sternoclavicular joint: Erosions in articular surface of manubrium sterni on right side with subtle irregularity and sclerosis affecting inferior articular surface of medial end of right clavicle.

MRI was not done. Patient was non reactive for HIV, Rheumatoid factor, CRP, Anti CCP

Antibodies, Anti-nuclear Antibodies. Mycobacterium Tuberculosis Interferon Gamma Release Assay was strongly positive with T-N value 47.84 pg/ml. Provisional diagnosis of Tubercular arthritis of Sternoclavicular joint was made based on clinical evaluation, imaging and Lab investigations and patient was put on ATT. It was planned to give four-drug anti-tubercular therapy consisting of rifampicin (450 mg daily), isoniazid (300 mg daily), ethambutol (1000 mg daily) and pyrazinamide (1500 mg) in the initial intensive phase for three months followed by rifampicin and isoniazid for nine months. At the end of 2 months, Swelling improved significantly, patient is on ATT and asymptomatic.



**Figure 4:** Clinical Photograph showing significant improvement at end of 2 months of treatment.

## DISCUSSION

Tuberculosis (TB), which is caused by bacteria of the Mycobacterium tuberculosis complex, is one of the oldest diseases known to affect humans and a major cause of death worldwide. Recent population genomic studies suggest that *M. tuberculosis* may have emerged ~70,000 years ago in Africa and subsequently disseminated along with anatomically modern humans, expanding globally during the Neolithic Age as human density started to increase. This disease most often affects the lungs, although other organs are involved in up to one-third of cases. In order of frequency, the extra pulmonary sites most commonly involved in TB are the lymph nodes, pleura, genitourinary tract, bones and joints, meninges, peritoneum, and pericardium. However, virtually all organ systems may be affected.<sup>[4]</sup> Osteoarticular involvement in tuberculosis constitutes 10% of extra pulmonary tuberculosis in immunocompetent individuals.<sup>[5]</sup> No bone is immune from involvement by TB, and the arthritis is monoarticular in 90% of cases. The most common location in childhood is spine, accounting for 60% to 70% of cases. The most frequently involved joints in adults are the weight-bearing joints such as hip, knee, shoulders, or elbow.<sup>[2]</sup> Tuberculosis of sternoclavicular joint is very rare accounting for 1% of all peripheral tuberculous arthritis.<sup>[5]</sup> The sternoclavicular joint is vulnerable to the same

disease processes as other synovial joints, the most common of which are instability from injury, osteoarthritis, infection and rheumatoid disease. Patients may also present with other conditions, which are unique to the joint, or are manifestations of a systemic disease process. The sternoclavicular joint is the forgotten articulation of the shoulder girdle. Over the last 20 years, there has been a considerable expansion in the range of conditions affecting the glenohumeral and acromioclavicular joints, which can be successfully treated by open or arthroscopic surgery. By contrast, most disorders of the sternoclavicular joint continue to be treated conservatively because of the poor results associated with surgical treatment and the potentially catastrophic complications with which such surgery is associated.<sup>[6]</sup> The rarity of occurrence of tuberculosis of sternoclavicular joint can be explained by the peculiar blood supply of the joint. The disease usually starts in the bone at the medial end of the clavicle and presents as painless or painful swelling. The swelling is slowly progressive in nature and it may or may not be associated with constitutional symptoms. Diagnosis is often difficult because of similar presentation in acute pyogenic arthritis, rheumatoid arthritis, multiple myeloma and metastasis. Poor response to antibiotic therapy may give a clue to underlying tuberculosis. If diagnosis of sternoclavicular tuberculosis goes unrecognized, it may lead to formation of cold abscess or sinus. Eventually there may be compression or erosion of the surrounding large blood vessels at the base of the neck and migration of tuberculous abscesses to the mediastinum. Patient usually presents with painless or painful swelling around the sternoclavicular joint with or without constitutional symptoms.<sup>[5]</sup> Dhillon et al<sup>[7]</sup> reported series of 9 patients with tuberculous arthritis of sternoclavicular joints. Clinical presentation varied considerably in the 9 patients. The 3 presenting complaints in decreasing order of frequency were painful swelling (7 joints), painless swelling (2 Joints) and discharging sinus (1 joint) with a mean duration of symptoms of 13 (6 - 32) months. Pain is not significant in the early phase of the disease; painless swelling may be present for long periods before the appropriate diagnosis is made. Yasuda et al.<sup>[8]</sup> reported 3 patients with tubercular arthritis in the SCJ. Painless swelling was the commonest mode of presentation (3/3 joints).<sup>[3]</sup> In our case, pain was neither severe as would be expected in cases having septic arthritis, nor were local symptoms very marked. The swelling was however palpable. Due to confluence of structures, this region is poorly visualized by plain radiographs. Because tubercular arthritis of the sternoclavicular joint may cause a retrosternal abscess with or without mediastinitis. we believe that modern imaging methods like CT scan and MRI delineates the abscess better in the soft tissues and shows joint effusion, which is hyper intense on T2-weighted

images.<sup>[3]</sup> Definitive diagnosis of sternoclavicular tuberculosis could be made on the basis of isolation of mycobacteria in the histological specimen.<sup>[5]</sup>

## CONCLUSION

Tuberculosis of the sternoclavicular joint is rare form of osteoarticular tuberculosis. Its diagnosis is often delayed or missed resulting in increased morbidity such as disfiguring scar, instability of the sternoclavicular joint, ruptured abscess, and rarely disseminated tuberculosis. Uncommon presentation of a common disease (tuberculosis) is the most common presentation & it should be considered in differential diagnosis of non-traumatic swelling of the clavicle.

## REFERENCES

- Pigrau-Serrallach C, Rodríguez-Pardo D. Bone and joint tuberculosis. Eur Spine J. 2013 Jun; 22(Suppl 4):556-66.
- Mousa HA-L. Bones and Joints Tuberculosis. Bahrain Medical Bulletin. 2007; 29(1):17-21.
- Walid O, Amine TM, Hamdi K, Sonia J, Nader N, Laziz BAM. Tuberculosis Arthritis of the Sternoclavicular Joint. Open Journal of Orthopedics. 2015;5:135-9.
- Raviglione MC. Tuberculosis. In: Harrison's Principles of Internal Medicine. 19th edn. Kasper DL, Fauci AS, Hauser SL, Longo DL, Jameson JL, Loscalzo J. (eds.) McGraw Hill. 2016;1102-9.
- Barman B, Ete T, Komut O, Nobin H, Mondal S. Tuberculosis of Sternoclavicular Joint: A Rare Presentation of Common Disease. Medico Research Chronicles. 2015;2 (4):517-20.
- Robinson CM, Jenkins PJ, Markham PE, Beggs I. Disorders of the sternoclavicular joint. J Bone Joint Surg Br. 2008 Jun; 90(6):685-96.
- Dhillon M S, Gupta R, Rao K S, Nagi O N. Bilateral Sternoclavicular joint tuberculosis. Arch Orthop Trauma Surg. 2000; 120 (5-6): 363-5.
- Yasuda T, Trauma K, Fujiwara M. Tuberculous arthritis of the sternoclavicular joint-a report of three cases. J Bone Joint Surg (Am) 1995; 77: 136-9.

**How to cite this article:** Sachdeva S, Kaur SP, Garg R, Khurana T, Garg S, Jindal A. Tubercular Arthritis of Sternoclavicular Joint: A Case Report. Ann. Int. Med. Den. Res. 2016; 2(6):ME05-ME07.

**Source of Support:** Nil, **Conflict of Interest:** None declared