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***Case Report***

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# Diagnostic dilemma of anaerobic septic arthritis of Sternoclavicular joint (SCJ) in a previously healthy patient: A case report

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## Abstract

We came across a 30 year old healthy female patient with severe pain and swelling over the left sternoclavicular joint for three weeks, without any history of trauma. Patient was evaluated elsewhere and empirically started on Anti-tubercular drugs. Patient was admitted and evaluated as per pain was unpropotionate to her complaints. Computerised Tomography scan revealed eroded medial end of the left clavicle. Magnetic Resonance Imaging scan showed hyper intensity along the sternocleidomastoid and collection in anterior mediastinum. Erythrocyte sedimentation rate and C-reactive protein on admission was 120 and 98 respectively. Patient underwent decompressioof the left sternoclavicular joint with resection of the medial end of clavicle and excision of the sinus. Anaerobic culture showed growth of bacteroids. Patient was started on Clindamycin and Metronidazole for six weeks. Patient was symptomatically better. Repeat ESR and CRP was 20 and five at the end of six weeks. We suggest that decompression with appropriate antibiotics should be considered at the earliest in sternoclavicular arthritis.

**Keywords:** Arthritis, Anaerobic Septic Arthritis, Sternoclavicular joint (SCJ), Healthy Patient.

### Introduction

Sternoclavicular joint is involved in 1% of all infectious arthritis cases [1-3]. It is usually seen in patients with predisposing factors like diabetes mellitus, intravenous drug abusers, rheumatoid arthritis and Immunosuppressive disorders [4-7]. The common organisms staphylococcus aureus, including MRSA, pseudomonas, mycobacterium tuberculosis [2], [3], [8,9]. A delay in the diagnosis of SCJ septic arthritis may lead to complications such as empyema, mediastinitis, osteomyelitis or large abscess formations [10-13].

There are only 27 documented cases of sternoclavicular joint septic arthritis in a previously healthy patient. We report a case of anaerobic bacterial infection of sternoclavicular joint in a patient who was not at risk of septic arthritis. From this case report we discuss the difficulty in diagnosis and also the recommended treatment in such cases.

### Case Report

A 30 year old female came to OPD with severe pain and swelling over the medial end of left clavicle for three weeks. She also complained of pain over the left anterior chest wall and the nape of the neck. She was evaluated elsewhere for the same complaints and empirically started on ATT before presenting to us but did not have any relief. Patient did not have fever but gave history of increased pain at night. On clinical examination patient had a swelling measuring 3x2 cm over the left SCJ. Swelling was fluctuant and tender. Range of movements of the left shoulder was painfully restricted. Blood investigations at the time of admission showed total count 6100, ESR -95mm, CRP -70. CT scan showed erosion of the medial end of the clavicle and MRI scan showed hyper intensity along the sternocleidomastoid suggesting muscle oedema and collection in the anterior mediastinum.

Patient developed sinus over the swelling with discharge. Patient was still on ATT. Pain increased drastically. Repeat ESR and CRP values were 120 and 98 respectively but Total count was in normal range. Since patient did not have any symptomatic relief and blood values kept increasing, inspite of being under the cover of ATT, tuberculosis was very unlikely. Decision was made to do an open biopsy with decompression of the Left SCJ.

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**Figure 1:** T2 weighted MRI scan showing hyperintensity along the sternocleidomastoid and left SCJ

**Figure 2:** STIR images showing hyperintense signal along the left sternocleidomastoid and left SCJ

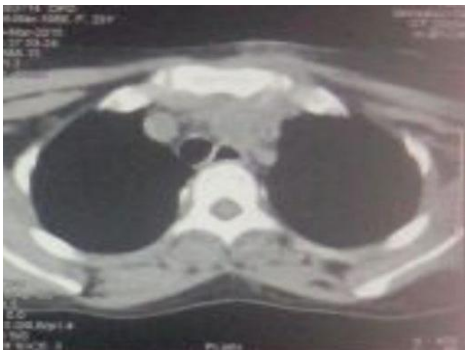

**Figure 3:** CT scan image showing collection at the left SCJ

*Operative Procedure:* Patient under G.A was taken up for decompression. A 6cm incision was made over the sternoclavicular joint excising the sinus. Sinus was found to directly communicate with the SCJ. Unhealthy granulation tissue was found between the clavicle and sternum. Medial end of clavicle was eroded about 7-10mm. Around 15ml of pus was evauated. The medial end of the clavicle was excised without disturbing the costoclavicular ligament which is the major ligament which provides stability.

The material was sent for aerobic culture and sensitivity, AFB, PCR for Tuberculosis, Anaerobic culture and sensitivity and also bone biopsy. Wound was then closed over a drain which was removed after 48 hours.

Post operatively wound healed well.

Immediately following decompression patients symptoms improved.

All reports including PCR showed normal study. Aerobic culture and sensitivity showed growth of bacteroids. ATT was stopped immediatly as patient started developing peripheral neuropathic symptoms. Patient was then started on Clindamycin and Metranidazole injection for period of 2 weeks followed by oral antibiotics for 4 weeks. Repeat blood investigations showed reduced values.

| Investigations | On admission | 3rd week | 6th week | 10th week |
|---|---|---|---|---|
| Total count | 6100 | 5800 | 5900 | 5900 |
| ESR | 120 | 115 | 40 | 20 |
| CRP | 98 | 22 | 10 | 5 |

**Discussion**

Infectious arthritis of SCJ accounts for 0.5 to 1 % of all septic arthritis cases.The principle of management are eradication of infection, relief of pain and restoration of function. A delay in diagnosis may lead to serious complications such as empyema, mediastinitis, large abscess formation and sepsis leading to mortality. There are various pre disposing factors like Diabetes Mellitus, rheumatoid arthritis, Intra venous drug abuse and immunosuppressive disorders. But septic arthritis of SCJ occuring in a healthy adult is very rare.There are only 27 documented cases till 2001[1]. The common Infection causing organisms are *Staphylococcus aureus* including MRSA, *Pseudomonas aeruginosa*, *E. coli*. The other lesser known organisms are *H. Influenza*, *Strep. pneumonia*, *Strep. pyogenes*, *N. gonorhoea*, *C. albicans* etc. Ross *et al* reported that the incidence of Strep. Aureus was 49% in their study which included 180 cases.

In our case, patient had only severe pain with swelling. There was no fever throughout her hospital stay. The patient was on ATT for 3 weeks before presenting to us. But there was no relief of her symptoms and moreover the values of inflammatory markers were increasing. The diagnosis was dilemma until open decompression was done and anaerobic culture showed growth of bacteroids. Patient improved drastically with the start of appropriate antibiotics. The value of ESR and CRP also reduced within normal in 4 weeks time. The constant functional score14 improved from poor to fair in 4 weeks.

The points we want to share from our experience is:

- If diagnosis is not certain then re consider at the earliest.
- Symptoms of infection like fever or raised total count may not be seen in anaerobic infection.
- If in doubt always do a decompression at the earliest which can be of diagnostic and therapeutic help.
- Send for aerobic, anaerobic culture, AFB, PCR for Tuberculosis, Fungal culture.
- Repeat ESR, CRP every two weeks to see the response to appropriate antibiotics.

**Conclusion**

In SCJ septic arthritis with delay in diagnosis, open arthrotomy with debridement and resection of the medial end of the clavicle should be the choice of management as it helps in diagnosis as well as relieves the symptoms.

**Consent**

Written informed consent from patient is taken for the study

**Conflict of interest** – Nil

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