

Case Report

Atraumatic spontaneous swelling of sternoclavicular joint: a case report

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ABSTRACT

Atraumatic spontaneous swelling of the Sternoclavicular Joint (SCJ) is not very common in elderly women. The SCJ is an integral part of the shoulder girdle that connects the upper limb to the axial skeleton. Trauma, degeneration, infections and other disease processes that affect synovial joints are the common causes of swelling of the SCJ. Here authors report a case of nontraumatic spontaneous anterior subluxation of the sternoclavicular joint in 66-year-old women without any underlying pathology who presented with sudden onset of a nontender swelling in the suprasternal area. The patient was treated conservatively and remained asymptomatic throughout 6 months follow up.

Keywords: Atraumatic, Elderly, Spontaneous swelling, Sternoclavicular joint

INTRODUCTION

The Sternoclavicular joint is the joint that connects the arm to the axial skeleton. Based on bony anatomy, SCJ is unstable, but this joint is very well supported by costoclavicular, interclavicular ligaments as well as capsule and thereby making sternoclavicular joint (SCJ) one of the least dislocated joints in the body, 1% of all joint dislocation and 3% of dislocation involving upper body.¹ Spontaneous subluxation without any trauma is not very common.

Most of these cases are reported in young women less than 20 years of age without any major trauma, one or both of medial end of clavicles spontaneously displaced anteriorly during abduction or flexion to above shoulder movement.² Sadr and Swann reported spontaneous subluxation in older populations in 22 cases.³ Rockwood and Odor discussed 37 cases with nontraumatic anterior subluxation, many of this had generalized ligamentous laxity and was treated conservatively with full recovery.⁴ Surprisingly, patient with conservative treatment had a better outcome than patients treated surgically.

CT is the imaging modality of choice and preferred over plain radiographs. Most of the patient with nontraumatic anterior displacement with painless swelling and no specific treatment needed other than explanation, reassurance and analgesia if needed. Pain, if present, is mild and usually self-limiting for few months.

CASE REPORT

A 66-year-old female presented with two weeks history of swelling at the medial end of the right clavicle (Figure 1). She reported no pain and felt it was increasing in size. She didn't have any history of trauma. She has no other significant medical history. Physical examination showed a hard-non-tender bony swelling of approximately 2x2 cm on the medial end of the right clavicle. X-ray of clavicle arranged on the same day and a follow up was arranged after 2 days.

On follow up visit patient didn't have any other new symptoms. X-ray was reviewed which was reported as no evidence of obvious displaced fracture, no bony or articular abnormality detected (Figure 2). The bony

alignment was reported as normal. She was referred under two days referral policy of suspected cancer to orthopedics as the swelling was noted over a short time and not associated with any pain or trauma. Sarcoma was one of the possibilities and was referred to orthopedics for advice.



Figure 1: Swelling on right SCJ joint.



Figure 2: X-ray of right SCJ joint.

She was seen in Orthopedics clinic and Computerized Tomographic (CT) scan of the sternoclavicular joint was arranged. After a week, on follow up visit, CT scan of both sternoclavicular joints showed mild subluxation of the right acromioclavicular joint and mild degenerative changes of acromioclavicular joints. No focal osteolytic or osteosclerotic bony lesions, periarticular swelling or collection noted.

She was followed up after 12 days in Orthopedic clinic and was reassured regarding the swelling and was advised that swelling may remain the same or even get bigger but no need for intervention at this stage. She was seen in Family Medicine Clinic after 3 weeks for a non-related medical condition and swelling was reviewed, and it showed no changes and the patient remained asymptomatic. She was followed up by the family

physician after 6 months and remained asymptomatic during this visit. She was advised to return if any concerns or changes with regards to the swelling.

DISCUSSION

Subluxation and dislocation of SCJ can occur without any significant trauma. In such cases, detailed history of presenting complaint, thorough physical examination, and appropriate imaging helps to determine the type of SCJ injury. Spontaneous or nontraumatic subluxations can be congenital, developmental, or idiopathic, they are more often anterior than posterior, and are very rarely bilateral.^{5,6} Congenital cases can subluxate, dislocate and can be permanent or recurrent.^{2,7} This case is unique as nontraumatic SCJ subluxation is very uncommon finding in this age group. These are usually seen in patients younger than 20 years, with a higher incidence in females than males.²

Usually, SCJ swellings can be secondary to many non-traumatic pathologies including infective, degenerative, and inflammatory conditions like psoriasis, ankylosis spondylitis, reactive arthritis and inflammatory bowel disease. Patients present with bony or soft tissue swelling, deformity, localized tenderness and signs of inflammation. All these systemic diseases need to be excluded to make the right diagnosis.⁸ Initial screening tests such as inflammatory markers (white cell count, erythrocyte sedimentation rate (ESR), C-Reactive Protein (CRP), rheumatoid factor (RA), Antinuclear Antibodies (ANA) and tissue antigen tests for Human Leukocyte Antigen (HLA-B27) are useful to diagnose chronic inflammatory conditions and infections. However, in this case, due to the presentation and the absence of any inflammatory signs, the patient was directly referred for radiography tests.

There are atypical conditions affecting SCJ joint like SAPHO syndrome (acronym for the combination of synovitis, acne, pustulosis, hyperostosis, and osteitis) which has multifactorial pathogenesis including genetic, immunologic and infectious causes. Although usually affected unilaterally, untreated and delayed diagnosis can develop to bilateral involvement.⁶ Other conditions include condensing osteitis, which is sclerosis of the medial end of the clavicle. Usually, this is unilateral, affects women of 20-60 years old. SCJ is not always involved in this condition. This is caused by unknown etiology, but trauma, infections and stress are possible etiological factors. Lab tests usually are normal for this condition. Treatment is symptomatic management with non-steroidal anti-inflammatory medications. Surgical methods were used in the past. Pain settles mostly by 6 months with conservative treatment.

In the diagnosis and management of SCJ instability, other differentials like ligamentous injuries, congenital joint laxity (e.g.: Ehlers-Danlos syndrome), as well as neoplasm, needs to be excluded.⁷ In this case, patient

swelling came spontaneously over a short period of a few weeks and was painless, so neoplasm was the main concern. The patient is a retired pediatrician who was also concerned about malignancy.

Conventional radiography may be helpful in detecting degenerative arthritis, hyperostosis and calcification of the surrounding tissues. Radiographs can be difficult to interpret because of variations in anatomy and overlap of the underlying superior mediastinal structures. CT and MRI are more sensitive as well as specific in detecting certain pathologies.⁹⁻¹¹ In this case, CT scan helped us to finalize the diagnosis and its management.

A CT scan-based study reported a case with acute pain and swelling of SCJ, this was associated with osteoarthritis changes. These are treated with anti-inflammatory medications and corticosteroid injections locally.⁸ However, it can present as a swelling of joint which can mimic tumour like present case.

Spontaneous atraumatic posterior subluxation is extremely rare. Martin et al reported a case of nontraumatic spontaneous posterior dislocation of sternoclavicular joint in 50-year-old women without known underlying pathology. Surgery was performed (closed reduction) under general anaesthesia.¹² The dislocation recurred for this case, further surgery was not performed but she was managed conservatively with symptoms improvement progressively except pain and discomfort during adduction and flexion.¹²

This case demonstrates mild subluxation of the right acromioclavicular joint and mild degenerative changes of acromioclavicular joints occurred. No focal osteolytic or osteosclerotic bony lesions, periarticular swelling or collection noted. She was advised that swelling may remain the same or even get bigger but no need for intervention at this stage and suggested to be seen by a family physician after 6 months for further follow-up. However, in this patient, it was a spontaneous painless swelling, developed over a very short period that leads to the concern of neoplasm.

CONCLUSION

In conclusion, instability of the SCJ can result in a spectrum of conditions that range from asymptomatic subluxation to symptomatic dislocation. While most anterior dislocations can be managed conservatively, posterior dislocations would benefit from surgical intervention. The SCJ, being a synovial joint, could be affected by all the conditions that affect this type of joint, and in addition there are a few uncommon conditions that are specific to the SCJ. Awareness of these conditions and better understanding of SCJ patho-anatomy by the treating physician is essential for the management of these conditions.

This case emphasizes the extreme importance of detailed physical history and initial screening. Authors think nontraumatic anterior subluxation of sternoclavicular joint probably has self-limiting pathology and is best treated conservatively. Appropriate explanation of swelling and investigations can be initiated in primary care and referral to secondary care needed to exclude more sinister pathology in case of any doubt.

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