Case presentation

A 49 years old male patient presented with a 3 years history of progressive pain in the left shoulder, restricted range of movement and crepitations during the active movement of the left shoulder. He is a Non-smoker construction worker. He denied any trauma on the region and has no past medical history of interest for the pathology. He had no active movements above the head of the left shoulder after 40 degrees of abduction. On the physical examination he had progressive pain in the left shoulder, restricted range of movement, which often progresses slowly for several years as in our case. SC affects most commonly the knee and hip joints but can also be seen in the elbow, ankle, temporomandibular, and shoulder joints respectively. 

It starts as a focal chondral tissue that becomes pediculated and eventually loose, becoming unattached bodies in any synovial articular space. Once free, they can still grow nourished by the synovial fluid. These loose bodies can go through a ossification process, generating symptoms due to a mass effect inside the articulation, triggering erosive damage. The pathology it’s divided in three major stages; active intrasynovial stage without loose bodies, transitional lesions with synovial proliferation and loose bodies and loose bodies without synovial disease. The definitive treatment for SC is surgical resection, which can be done on an open or closed arthroscopic procedure.

Figure 1 Left shoulder simple X-ray showing multiple intraarticular calcifications.
The definitive treatment for SC is surgical resection, which can be done on an open or closed arthroscopic procedure. The exact timing of surgical intervention has not been defined in the literature but theoretically the loose bodies within the subacromial space can cause supraspinatus outlet impingement, acromial spurring, and bursal sided rotator cuff tears, as was in our case. Generally, arthroscopic treatment has a better outcome in terms of lower morbidity rates, earlier return to function, shorter rehabilitation protocol, decreased post operative pain, and earlier active range of motion. But the gold standard of treatment has not been established. The recurrence rates following open and arthroscopic treatment of SC in the shoulder is comparable (0-31%), many authors recommend to perform an adjunct synovectomy to reduce the possibilities of recurrence. Multiple case reports describe SC in knee and hip primarily, with the shoulder being the least common. Only a few reports cases in which the synovial chondromatosis produces partial to total rotator cuff tears. Neumann et al. described a bursal sided rotator cuff tear secondary to Synovial Chondromatosis as in our case. Horn et al. described a partial tear of the rotator cuff, and Ogawa et al. described a bilateral case. All of the cases were treated with the resection of the loose bodies and the reconstruction of the rotator cuff tear, all had outcomes typical for rotator cuff restoration.

**Conclusion**

In conclusion, we reported the case of a patient with Synovial Chondromatosis in the shoulder that resulted in subacromial impingement and a complete tear of the supraspinatus tendon. A mechanical problem secondary to an obstruction generated by the loose bodies. Besides the clinical presentation an MRI should be taken as imaging test of choice for diagnosis in this kind of pathology, because some of the loose bodies can’t be seen under a simple X-ray or ultrasonography. Today closed arthroscopic treatment is the most accepted treatment to address this pathology because appears to produce less morbidity and a better and faster functional outcome compared with open resection, but there is not enough published evidence to support this. During the procedure the loose bodies shall be resected as well as the surrounding synovitis to reduce the chances of recurrence. Malignant degeneration into chondrosarcoma has been reported but is uncommon.

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None.

**Conflict of interest**

The author declares no conflict of interest.

**References**


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**Figure 2** Supraspinatus tendon ultrasonography with a complete rupture.

**Figure 3** Subacromial Arthroscopic view of loose bodies and synovitis.

**Discussion**

Synovial chondromatosis is an unusual and benign pathology that involves the synovial lining, bursa tissue, and or tendon sheaths of the major articulations. It is usually monoarticular and its characterized by development of multiple osteochondral loose bodies. This disorder is more commonly seen on the knee followed by the hip, elbow, ankle, temporomandibular, and shoulder joints respectively. SC starts with a benign synovial proliferation that leads to chondral or osteochondral foci formation. The exact etiology remains unknown, but it is theorized that it may be due to synovial irritation secondary to trauma injury, or even possible infection. SC can be classified as primary or secondary. The main secondary reasons are trauma, degenerative joint disorders, osteochondritis dissecans, rheumatoid arthritis and tuberculous arthritis. In recent research, clonal karyotypic abnormalities have been reported in chromosome 6, suggesting neoplastic origin. Patients usually present with progressive articular pain, loss of movement and local swelling. The patient usually complains of stiffness, dull ache, instability, locking or crepitus. Diagnosis is made by clinical examination, radiographic investigation and histologic confirmation. Usually the laboratory findings are non-specific. The radiographic features on a plan film depend on the degree of ossification, which has occurred. Because calcification is absent in 25-30% of the cases, simple X-rays can show no specific findings and may be normal. CT scan can be used to confirm the localization of the loose bodies. Nowadays the imaging study of choice is the MRI, that provides a better diagnosis of intra and extra articular pathology and localization. The most frequent pattern is one of principally unmineralised nodules. We were not able to perform a MRI on our patient because he was treated at a low-level social care facility without MRI access.

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