

Coracoclavicular Joint Arthrosis – An Uncommon Cause of Shoulder Pain

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Abstract: The coracoclavicular joint is a diarthrodial synovial joint that is eventually located between the upper surface of the horizontal part of the coracoid process and the conoid tubercle of the clavicle, and is considered an unusual anatomical alteration. The coracoclavicular joint has a low prevalence and can be diagnosed by imaging tests – radiography and computed tomography. Treatment can be performed both conservatively and surgically. We report a case of an 81-year-old female patient presenting of pain in her left shoulder due to coracoclavicular joint arthrosis. A radiograph of the left shoulder was performed, which detected a deformity in the lower portion of the middle third of the clavicle and the upper portion of the coracoid process, corresponding to the coracoclavicular joint, a finding confirmed by computed tomography. The patient was treated conservatively with analgesics (Dipyron) and anti-inflammatories (Ibuprofen) with improvement in symptoms.

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Introduction

The coracoclavicular joint is a diarthrodial synovial joint that eventually lies between the superior surface of the horizontal part of the coracoid process and the conoid tubercle of the clavicle. It was first described by Gruber in the late 19th century. The coracoclavicular joint is considered an uncommon anatomical alteration (Singh et al., 2009).

It is essential to emphasize the higher incidence in Asians than in Europeans or Africans (Paraskevas et al., 2009). The mean age at which shoulder pain related to the coracoclavicular joint presents is 42 years old, with a ratio between men and women of 1.1:4 (Willekens et al., 2013).

Although coracoclavicular diarthrosis is considered a neglected structure, its presence is clinically relevant to determine the origin of shoulder pain and the decision to treat it in some cases (Paraskevas et al., 2009). The presence of such a joint can cause, in some cases, shoulder pain radiating to the arm (Singh et al., 2011).

Herein, we report the case of an 81-year-old female patient presenting pain in her left shoulder for three months.

Case report

An 81-year-old female patient presenting pain in her left shoulder for three months. She informs that the pain radiates to the arm, limiting daily activities, having difficulty lifting weights, and hang clothes on the clothesline. She denies a history of trauma and previous surgeries.

On physical examination, she doesn't show edema and hematoma, but has a positive Hawkins-Kennedy impingement test. Refers pain with elevation of the left upper limb and in Jobe's test.

The radiography of the left shoulder was performed, which detected a deformity in the lower portion of the middle third of the clavicle and the upper portion of the coracoid process, corresponding to the coracoclavicular joint arthrosis (Figure 1), later confirmed by computed tomography (CT) scan (Figure 2).

The patient was treated conservatively with analgesics (Dipyrone) and anti-inflammatories (Ibuprofen) with improvement in symptoms in one week.

Discussion

Some authors report few symptomatic cases. Singh et al. (2011) analysed 21 symptomatic cases of the coracoclavicular joint and detected that the predominant characteristic was pain in the shoulder followed by movement limitation. In addition, other associated complaints can be exemplified, such as

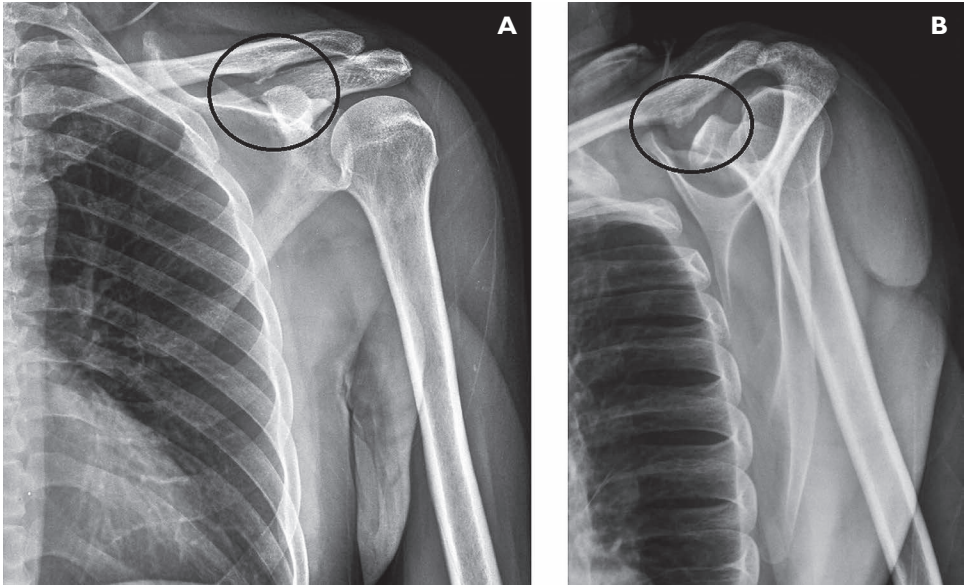


Figure 1 – Radiography of the left shoulder in the posteroanterior view (A), and in the lateral scapular view (B), demonstrating arthrosis of the coracoclavicular joint (black circle).

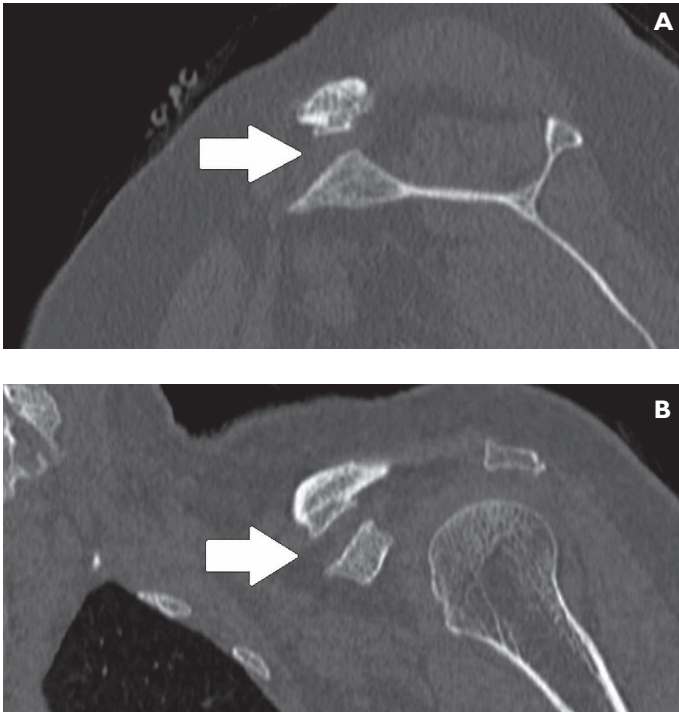


Figure 2 – Computed tomography scan bone window of the left shoulder in the sagittal section (A), and in the coronal section (B), demonstrating arthrosis of the coracoclavicular joint (white arrow).

upper limb paresthesia, brachialgia, and pain with ipsilateral irradiation. Patients had localized swelling and tenderness at the site of the anomalous joint and hand weakness (Schuh et al., 2018).

The coracoclavicular joint has been associated with cervicobrachial syndrome, decreased shoulder movement, and degenerative changes in adjacent joints (Willekens et al., 2013). The origin of the pain is attributed to impairment of the brachial plexus, where microscopic nerves are compressed and are relieved after joint removal (Paraskevas et al., 2009). Another cause described in the literature is the set of degenerative alterations of the joint and its proximity to the brachial plexus (Paraskevas et al., 2009). Compression of the brachial plexus can be seen on magnetic resonance imaging (MRI) in extreme shoulder abduction (Nehme et al., 2004).

Aging is an important factor in the development of this joint. In an osteological study, five coracoclavicular joints were observed. Among them, joint facets were found in adults over 25-years-old, being found bilaterally in two individuals; in an individual unilaterally to the left; in two unilaterally to the right. The analysis of 1,000 adult individuals aged between 18 and 95 years to analyse the incidence of the coracoclavicular joint resulted in: an incidence of 10.1% in men, 5.7% bilateral, and 4.4% unilateral, while the incidence in women was 8.3%, 3.6% bilateral and 4.8% unilateral (Nehme et al., 2004).

Some authors claim that the formation of the coracoclavicular joint is conditioned by genetics. Likewise, some cadaveric studies have not found a coracoclavicular joint in neonates and young children. Another study evaluated paired clavicles of 50 neonates and 35 fetuses in northwest India but concluded that the facet joints were absent, leading to the reasoning that the coracoclavicular joint has a non-congenital cause (Kaur and Jit, 1991; Nehme et al., 2004).

Local anesthesia with the aid of imaging tests helps to understand the location of the origin of the pain. If there is partial symptomatic remission after targeted injectable analgesia, the coracoclavicular joint should be considered as the pathological site. This joint can be seen by radiography and confirmed by CT scan, presenting it with degenerative alterations (Willekens et al., 2013), as in the case reported. However, dynamic MRI can be used if the symptoms are secondary to neurovascular impact – the result of the mechanical alteration of the shoulder – because conservative treatment will not be effective. MRI visualizes the anatomy of soft tissues, and bones, and also evidence of traction or impingement of neurovascular structures in various regions of the arm (Singh et al., 2011).

The treatment can be surgical or conservative. Conservative treatment is the first line of treatment and has low efficacy, consisting of the use of anti-inflammatories, physiotherapy, lifestyle modification, or local injection of corticosteroids under fluoroscopy. It is indicated for a specific group of patients, being elderly people with low functional demand, patients who do not want to be admitted to surgery, and patients with a high American Society of Anesthesiologists (ASA) score for high

respiratory risk. Due to the failure of conservative treatment, there is justification for surgical excision of the joint, which has a success rate of 100% (Singh et al., 2011).

It is possible to observe that in the clinical presentation of the exposed case, the image pattern in the diagnostic methods used and the conduct performed – conservative therapy – as the first-choice treatment followed the recommended literature, with no need for surgical intervention. However, even though conservative therapy has a low success rate, it is undeniable that the symptomatic treatment was effective for the patient in this case.

Conclusion

In this case, we report the presence of a coracoclavicular joint, which has a low prevalence, in an elderly patient, whose diagnosis was confirmed with imaging tests – radiography and CT scan. Treatment can be performed both conservatively and surgically. However, it has been reported that the invasive process (surgical excision of the joint) is 100% effective and has a curative effect, promoting immediate pain relief.

References

- Kaur, H., Jit, I. (1991) Brief communication: Coracoclavicular joint in Northwest Indians. *Am. J. Phys. Anthropol.* **85(4)**, 457–460.
- Nehme, A., Tricoire, J. L., Giordano, G., Rouge, D., Chiron, P., Puget, J. (2004) Coracoclavicular joints. Reflections upon incidence, pathophysiology, and etiology of the different forms. *Surg. Radiol. Anat.* **26(1)**, 33–38.
- Paraskevas, G., Stavrakas, M. E., Stoltidou, A. (2009) Coracoclavicular joint, an osteological study with clinical implications: A case report. *Cases J.* **2**, 8715.
- Schuh, A., Seehaus, F., Onyemaechi, N. O., Höhle, W. (2018) Osteoarthritis in a symptomatic coracoclavicular joint. *Glob. Med. Ther.* **3(1)**, 10.15761/gmt.1000106.
- Singh, V. K., Singh, P. K., Balakrishnan, S. K. (2009) Bilateral coracoclavicular joints as a rare cause of bilateral thoracic outlet syndrome and shoulder pain were treated successfully by conservative means. *Singapore Med. J.* **50(6)**, e214–e217.
- Singh, V. K., Singh, P. K., Trehan, R., Thompson, S., Pandit, R., Patel, V. (2011) Symptomatic coracoclavicular joint: Incidence, clinical significance, and available management options. *Int. Orthop.* **35(12)**, 1821–1826.
- Willekens, I., Maeseneer, M. D., Boulet, C., Verhelle, F., de Mey, J. (2013) Coracoclavicular joint with shoulder pain. *JBR-BTR* **96(1)**, 44.