Clinical History:

A 52-year-old male patient presented with a history of right shoulder pain, which started about two weeks earlier, and was aggravated by lifting the arm. There was no restriction of movements, nor prior history of trauma.

Imaging Findings:

The conoid tubercle of the right clavicle is elongated, with a flattened inferior surface directly pointing at the coracoid process of the scapula, forming an anomalous articulation [arrow, Fig. 3]. Sclerosis of the articular surfaces and osteophytes formation was noted. A comparison X-ray of the left shoulder revealed similar findings [arrow, Fig. 4].
Discussion:

Normally in humans, there is a coracoclavicular ligament (CCL) between the conoid tubercle of the clavicle and the superior surface of the horizontal part of the coracoid process of the scapula. The CCL is composed of two separate bands (conoid and trapezoid) in humans (Fig. 1), as opposed to a single band in primates [1]. On plain films, the conoid tubercle is a bony prominence on the inferior surface of the lateral third of the clavicle (arrows, Fig. 2). The coracoclavicular joint (CCJ) is formed between a prominent conoid tubercle of the clavicle and the coracoid process of the scapula. It is a true synovial joint that is easily observed in some primates [2] because their shoulders are weight-bearing due to their locomotion and posture [1]. It is rarely seen in humans as a normal variant, as the human shoulder is a relatively weight-free structure. It may be found unilaterally or bilaterally, and is usually asymptomatic. It can be symptomatic due to trauma [3] or degeneration [4]. Posttraumatic ossification of the CCJ will lead to neurovascular impingement.

The plain radiographs of both shoulders in the current case show a bony outgrowth from the normal position of the conoid tubercle of the clavicle, forming an articulation with the coracoid process. There are associated degenerative changes in both joints. It is not clear if the presented symptoms are due to the degenerative changes.

Osteophytes, which are defined as lateral outgrowths of bone at the margin of the articular surface of a synovial joint, occur due to aging or as a response of the skeletal system to stress and injury. CT examination can confirm the presence of the abnormal joint and the existence of degenerative changes [4]. MRI will show not only the joint, but also its capsule.

A symptomatic CCJ can be treated by intracapsular injection of local anaesthetic - Xylocaine 2%, or by surgical resection [3, 5, 6].

**Differential Diagnosis List:** Bilateral coracoclavicular joints with degenerative changes., Coracoclavicular ligament calcification, Post-traumatic changes to the distal clavicle

**Final Diagnosis:** Bilateral coracoclavicular joints with degenerative changes.

**References:**

Wright-Fitzerald AS, Balenciuk MD, Burrows AM. (2010) Shouldering the burdens of locomotion and posture: Glenohumeral joint in Prosimians. The Anatomical Record 793;680-691 (PMID:20235324)


Description: Normal ligamentous anatomy of left shoulder
Description: Arrows show normal conoid tubercles of the clavicles. Origin: Adamu A, Department of Radiology, Ahmadu Bello University, Zaria, Nigeria.
Description: Arrow shows right coracoclavicular joint. Origin: Adamu A, Department of Radiology, Ahmadu Bello University, Zaria, Nigeria.
Description: Arrow shows left coracoclavicular joint. Origin: Adamu A, Department of Radiology, Ahmadu Bello University, Zaria, Nigeria.
Figure 5

Description: Arrows show right and left coracoclavicular joints. Origin: Adamu A, Department of Radiology, Ahmadu Bello University, Zaria, Nigeria.