

Ossification of the Upper Transverse Ligament of the Scapula and its Importance in Clinical Management

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ABSTRACT

Introduction: ossification of the superior transverse scapular ligament and morphological variations of the scapular notch can lead to incarceration of the suprascapular nerve.

Case report: during the routine of care in the single health system, during the physiotherapeutic evaluation and after delivery of the radiography, ossification of the upper transverse scapular ligament was found on the right scapula of one of the patients attending the orthopedics department.

Conclusion: ossification of the superior scapular transverse ligament certainly seems to be an event responsible for the incarceration of the suprascapular nerve and some painful syndromes in the shoulder.

Keywords: Anatomical variations; Entrapment syndrome; Ossification; Suprascapular notch.

Introduction

The suprascapular notch is converted into foramen by the superior transverse scapular ligament (STSL), where the suprascapular nerve passes by^{1,2}. The ossification of this ligament (figure 1) (which can be parcial or total), as well as the morphological variations of the notch can lead to the suprascapular nerve entrapment³.

This nerve receives fibers from the nerve roots of C5 and C6 and occasionally from C4, providing motor innervation to the supraspinatus and infraspinatus muscles, and also branches for the coracohumeral and coracoacromial ligaments, subacromial bursa and cranioclavicular joint⁴.

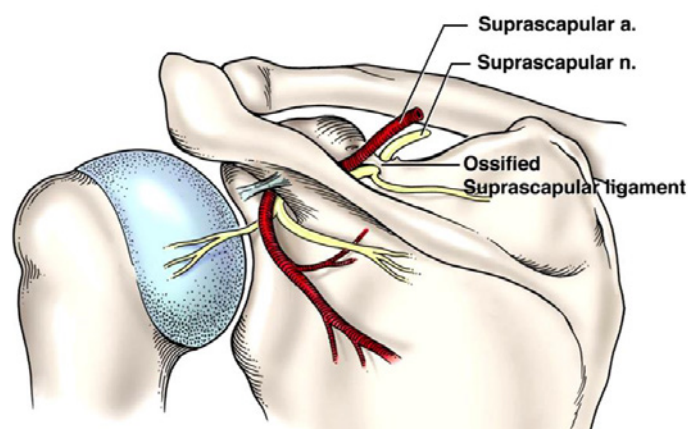


Figure 1. Illustration of left-sided suprascapular nerve compression within the scapular foramen. Posterior view of the scapula. Adapted by Tubbs R. et al., 2013⁴.

Case report

During a physical therapy assessment with the aim of treating a patient's shoulder due to painful symptoms during the range of motion for shoulder flexion and abduction at around 45° and strength deficit for the same movements, a radiography of the shoulder joint was requested in the anteroposterior plane in order to assess bone structures and possible anatomical variations in the acromion.

The evaluation was then started by palpation, inspection and after the radiography was evaluated, the formation of the scapular foramen was noted, which is called calcification of the upper transverse ligament of the scapula (figure 2).

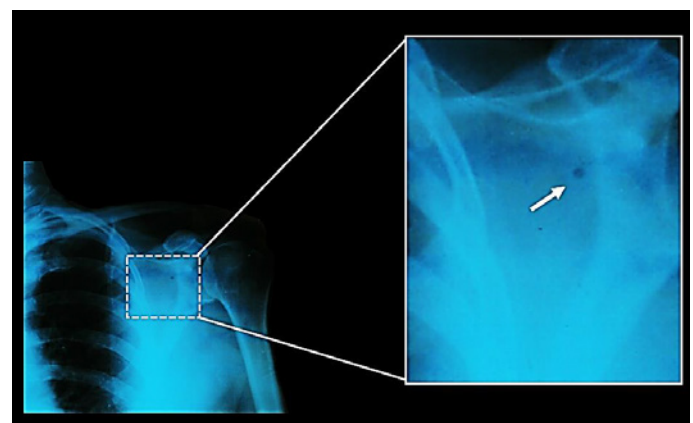


Figure 2. Radiograph of the right shoulder in the antero-posterior plane. The scapular foramen was noticed in the image with greater magnification. Arrow: Scapular foramen.

Discussion

The STSL is inserted from the base of the coracoid process to the medial border of the scapular notch, forming a foramen where the suprascapular nerve passes by⁵. This foramen was found in 10,3% of the population⁶ and has been reported in several populational groups⁷⁻⁹.

This agrees with what was found in the present study, in which was possible to observe a foramen in a pear shape with its apex facing up and right due to the ossification of the STLS on a right scapula.

According to Tubbs *et al.*⁴ the most important predisposing factor for the entrapment of the suprascapular nerve is the complete ossification of the STSL. On their analysis, all ossified STSL cases would present signs of neural degeneration of the suprascapular nerve, what could in most cases lead

to pain, weakness and atrophy of the supra and infraspinatus muscles^{1-10,11}.

The knowledge about this ossification is of fundamental importance not only to the clinic, but specially, as a reference, for surgeons on the treatment of patients with compression of the suprascapular nerve^{12,13}.

Conclusion

Partial or complete ossification of the STSL can significantly contribute to the compression of the suprascapular nerve and cause painful syndromes in the shoulder. However, a more careful assessment and knowledge of the possible anatomical variations of the shoulder complex is necessary, as the physiotherapeutic approach becomes more desirable in these cases.

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