

LETTER TO EDITOR

Complete Absence of Suprascapular Notch: A Case Report*Rohini Mohan Pawar^{1*}, Mohan Nagorao Pawar²**¹Department of Anatomy, ²Department of Forensic Medicine and Toxicology;
Rural Medical College, Loni (Maharashtra) India***Abstract:**

Suprascapular Nerve Entrapment (SSNE) is an acquired neuropathy secondary to compression of suprascapular nerve in the Suprascapular Notch (SSN). Complete ossification of superior transverse scapular ligament may be a cause for suprascapular nerve entrapment. The absence of suprascapular notch is not very common condition, though its prevalence was quoted by Indian authors to be varying from 1.36% to 32.46% in different parts of the country. It is considered to be a predisposing factor for suprascapular nerve entrapment neuropathy. We noticed a male scapula without suprascapular notch in osteology section of Forensic Medicine department. In this case we observed costal and dorsal surfaces of the left scapula of a male without suprascapular notch at its superior border. The details of the said scapula are discussed in this report.

Keywords: Suprascapular notch, Suprascapular nerve, Suprascapular nerve entrapment, Suprascapular neuropathy.

Introduction:

The scapula (shoulder blade) is a flat triangular bone situated at the posterolateral aspect of the thorax, overlying 2nd to 7th ribs. It consists of a concave costal and convex posterior surface. The triangular body (blade) of the scapula is thin and translucent, superior and inferior to scapular spine [1]. The suprascapular notch is situated in the lateral part of the superior border of the scapula just adjacent to the base of the coracoid process. It serves as a passage for to the suprascapular vessels and is converted into foramen by the superior transverse scapular ligament [2]. The

suprascapular notch is an important landmark of suprascapular nerve during arthroscopic shoulder operations [3]. The first description of suprascapular nerve entrapment syndrome at the site of the suprascapular notch was made by Kopell and Thompson [4]. Suprascapular nerve entrapment is an acquired neuropathy secondary to compression of the nerve in the bony suprascapular notch [5].

The morphology of the suprascapular notch is considered to be a risk factor for suprascapular nerve entrapment either in combination with an anomalous superior transverse scapular ligament or as a narrowed notch. Complete ossification with formation of bony foramina is the most recognized predisposing factor for the compression at the suprascapular notch. The ossified superior transverse scapular ligament can be a risky factor at surgical explorations during a suprascapular nerve decompression [6]. In this case report, a complete absence of the suprascapular notch in left scapula of a male was found.

Case Report:

In oosteology section of Forensic Medicine Department, it was found that there was a left scapula of a male without the suprascapular notch. (Fig. 1 and 2) Various parameters of the said scapula were measured with a sliding caliper. These are mentioned in a Table 1.



Fig.1. Costal Surface of Left Scapula showing Absence of Suprascapular Notch



Fig.2. Dorsal Surface of Left Scapula showing Absence of Suprascapular Notch

Table 1: Parameters of the left scapula (male)	
Length of superior border from the base of coracoid process to medial angle	7.3 cm
Length of medial border from medial angle to inferior angle	11.5 cm
Length of lateral border from infraglenoid tubercle to inferior angle	12 cm
Maximum length of scapula from superior angle to inferior angle of the scapula	15.4 cm
Maximum breadth of scapula from the middle of the dorsal border of the glenoid fossa to the end of the spinal axis at the vertebral border.	11.2 cm

Discussion:

The suprascapular notch is normally present in every scapula. It is commonly bridged by the superior transverse scapular ligament and thus converted into suprascapular foramen. Various factors have been identified as being the causes of suprascapular nerve entrapment, including variation in the shape of suprascapular notch. It could be postulated that complete absence of the suprascapular notch may also be one of the cause for the suprascapular nerve entrapment syndrome [7]. Variations in the morphology of suprascapular notch have been studied previously by various anatomists. As per classification of Rengachary *et al* (1979), there are six different varieties of suprascapular notch based on specific geometrical parameters. The author quoted that variation in the morphology of suprascapular notch has a role to play in suprascapular nerve entrapment [8]. Natsis *et al* studied 423 different scapulae. According to his study, there are five different varieties of the suprascapular notches present in the various scapulae. Type-I suprascapular notches are more prone for the suprascapular nerve entrapment neuropathy. But according to study of Dunkelgrun *et al* on suprascapular notches, V-shaped notches would more likely to be connected with nerve

entrapment [9]. The absence of suprascapular notch in some of the scapulae also suggests the possibility of compression of suprascapular nerve by the superior transverse scapular ligament. With the entrapment of the suprascapular nerve atrophy of supraspinatus, infraspinatus muscles may occur. Paralysis, weakness, numbness, burning sensation in the shoulder region may be the initial symptoms; later there may be only weakness of abduction and external rotation, as is seen in suprascapular nerve injury.

Conclusion:

The knowledge of an anatomical variation of suprascapular notch may always be of a great help to the clinicians in dealing with the patients with suprascapular nerve entrapment. It is important along the course of suprascapular nerve in the source of entrapment neuropathy as well as injury to the suprascapular nerve in arthroscopic procedures. To avoid suprascapular nerve lesions during shoulder procedures, in rotator cuff tears, the variation at the suprascapular notch may always be detected by radiological means. Such type of report may be useful in understanding the role of variation at the suprascapular notch in causing entrapment and to prevent iatrogenic nerve injuries during shoulder surgery.

References

1. Moore KL, Dally AF. Clinically oriented anatomy, 4th edition Lippincott Williams and Wilkins, 1999; 668-669.
2. Williams PL, Bannister LH, Berry MM, Collins P, et al. Gray's anatomy. 38th edition. Churchill Livingstone, 2004; 615-619.
3. Biglani LU, Dalsey RM, MCCann PD, April EW. An anatomical study of suprascapular nerve. *Arthroscopy* 1990; 6:301-305.
4. Paolo Albino, Stefano Carbone, Vittorio Candela, et al. Morphometry of the suprascapular notch: correlation with scapular dimensions and clinical relevance. *BMC Musculoskeletal Disorders* 2013, 14:172.
5. Black KP, Lombardo JA. Suprascapular nerve injuries with isolated paralysis of the infraspinatus. *Am J Sports Med* 1990; 18; 225-8.
6. Khadija Iqbal and Rameez Iqbal S. Classification of Suprascapular Notch According to Anatomical Measurements in Human Scapulae. *Journal of the College of Physicians and Surgeons Pakistan* 2011; 21(3): 169-170.
7. Vyas Kintu K, Rajput Hina B, Zanzrukiya Kalpesh M, et al. An osseous study of suprascapular notch and various dimensions of safe zone to prevent suprascapular nerve injury. *Indian Journal of Applied Basic Medical Sciences* Vol. 15 (20): 27-39.
8. David A Ofuson, Raymond A. Ude, Christianau, et al. Complete absence of suprascapular notch in Nigerian scapula: A possible cause of suprascapular nerve entrapment. *International Journal Shoulder Surgery* 2008; 2(4): 65-66.
9. Dunkelgrun M, Leska K, Park SS, Kummer JD. Interobserver reliability and interobserver reproducibility in suprascapular notch typing. *Bull Hosp Joint Dis* 2003; 61:118-22.

*Author for Correspondence: Dr. Rohini Mohan Pawar, Associate Professor,
Department of Anatomy, Rural Medical College, Loni (Maharashtra)
Email: pawarrohini78@rediffmail.com