



Morphometric Study of Supra-Scapular Notch in Eastern Up

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Abstract

Introduction- *Scapula is also known as the shoulder blade. The scapula is flat triangular bone that lies on the posterolateral aspect of the thorax. The superior border is thin and shortest and extends from the superior angle to the root of coracoid process. The supra-scapular notch is converted into Suprascapular foramen by supra-scapular ligament. The Supra-scapular foramen transmits Suprascapular nerve and Suprascapular vessels passes above the foramen.*

Aim and Objective- *The study was determining the Variation of the Shape of Supra-scapular notch of dry human scapula in Eastern UP (Purvanchal) region of India.*

Results- *In our study 150 dry human scapula on the basis of anatomical variations of supra-scapular notch is classified into four groups:-*

1. *V Shaped notch*
2. *U Shaped (shallow)notch*
3. *U Shaped (deep)notch*
4. *J Shaped Notch*
5. *Complete absence of Notch.*

Conclusion:- *The results of present study showed anatomical variation of supra-scapular notch is essential for clinicians, for understanding of location and source of the entrapment of the suprascapular nerve.*

Keywords:- *Dry scapula, Anatomical variations of supra-scapular notch.*

Introduction

The scapula is flat triangular bone that lies on the posterolateral aspect of the thorax. It extends from the 2nd to 7th ribs. The scapula has two surface concave costal surface and dorsal surface. The dorsal surface of scapula divided by the spine of the scapula into a small upper part Supraspinous fossa and lower large part Infraspinous fossa. The supra-scapular notch, a depression on the lateral part of the superior border of the scapula. Superior border of Scapula is thin and shorter near the root of coronoid process, it presents the supra-scapular notch. The supra-scapular ligament bridges the supra-scapular notch and converts it into a foramen. This transmits the supra-scapular nerve below the ligament and supra-scapular vessels above the ligament.

The Suprascapular nerve is motor innervations to the Supraspinatus and Infraspinatus muscles. The present study is a simple method to classify the shapes of the supra-scapular notch. The study was performed on 150 dry human scapulae.

Anatomical Variations in the shape of supra-scapular notch have been identified as one of the causes of supra-scapular nerve entrapment.

Aim and Objective

The study was determining the variation of the shapes of supra-scapular notch of dry human scapula in eastern (Purvanchal) region of India, because the shape of scapular notch may be a responsible factor in nerve compression.

Material and Method

150 dried human scapulae were collected from the department of Anatomy BRD government Medical College in Gorakhpur.

The scapulae were examined for different shapes of notches. The different types of supra-scapular notch were noted and also recorded according to the description given by Rengachary et al.

Result

In our study 150 dry scapulae on the basis of anatomical variations of supra-scapular notch were classified into five groups:-

1. V Shaped notch
2. U Shaped (shallow) notch
3. U Shaped (deep) notch
4. J Shaped Notch
5. Complete absence of Notch

We found	Type-1	9.21%
	Type-2	21%
	Type-3	31.57%
	Type -4	17.10%
	Type -5	21%

Type -1



Type -2



Type -3



Type -4



Type -5



Discussion

Previously supra-scapular notch have been classified by many researchers. They were found six different types of anatomical variation of the Supra-scapular notch-shallow U-Shaped, deep U-

Shaped, J-Shaped, Hockey stick, V-Shaped and absence of Notch. NASTIS et al obtained V notch on the basis of Vertical and Transverse diameter measurement. TICKER et al classified U and V shaped Supra-scapular notch. According to

NASTIS, SIKRAS TOTALIS et al, 2007- no supra-scapular foramina were found in 87 Indian scapulae, while Italian people had foramina only 6.1%, and according to TUCCAR, BAYRAMOLU, DEMIRYUREK et al., 2003, six different types of morphological variations of the supra-scapular notch has been reported in Nigerian population. as will as complete absence the supra-scapular notch also reported by UDERA, OKWUONU, OFUSORI et al-2008. IQBAL et al., reported three types of supra-scapular notches on the basis of shapes V, U, J. Some researcher distinguished V shape-supra-scapular notch on the basis of transverse and vertical diameter measurements. Anatomical classification of supra-scapular notch in the present study were found U-Shaped(Shallow) 21%, deep U-shaped 31.57%,V-

shaped 9.21%, J-shaped 17.10% and no foramen were found only 21 %.

The suprascapular nerve entrapment is more favorable in V-shaped notch.Reduction of the height of the supra-scapular foramen, also one of the Cause of entrapment of the suprascapular nerve. V-shaped supra-scapular notch, defined as having medial and lateral boundary which converge towards a narrow base.

In my study five shapes of supra-scapular notches are present the clinician could be able to correlate suprascapular nerve entrapment according to specific types of supra-scapular notch through the plain radiograph.

In this anatomical variation of supra-scapular notch also help for clinicians making a proper diagnosis.

Comparison of different shapes of Supra-Scapular Notch

Shape of Suprascapular notch	+Previous Study				Present Study
	Sinkeet et al 2010	Polguy et al 2010	Iqbal et al 2010/11	Soni et al 2012	
Deep U		24.4			31.57%-
Shallow U	21	-	-	-	21%
J Shape	-	-	00/22	27	17.10%
Absence of notch	-	-	10/23	02	21%
V Shape	5.18	-	68/20	07	9.21%

Conclusion

The knowledge on such anatomical variation of supra-scapular notch is essential for clinicians, for understanding of location and source of the entrapment of the suprascapular nerve. The morphological and radiological knowledge of the

variation of supra-scapular notch.is also essential for the clinicians and surgeons making a proper diagnosis.

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