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Morphological variations in shape of suprascapular notch in dry human scapula

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Abstract
Aim: To study the morphological variations in shape of suprascapular notch of human scapula.
Material and Methods: 181 Scapulae (105 right side and 76 left side) were collected from department of anatomy, mahatma Gandhi memorial medical college Jamshedpur Jharkhand. We also obtained scapula from 1st year medical students and examined macroscopically for different shapes of notches and data recorded.

Keywords: morphological, suprascapular, scapula, variations

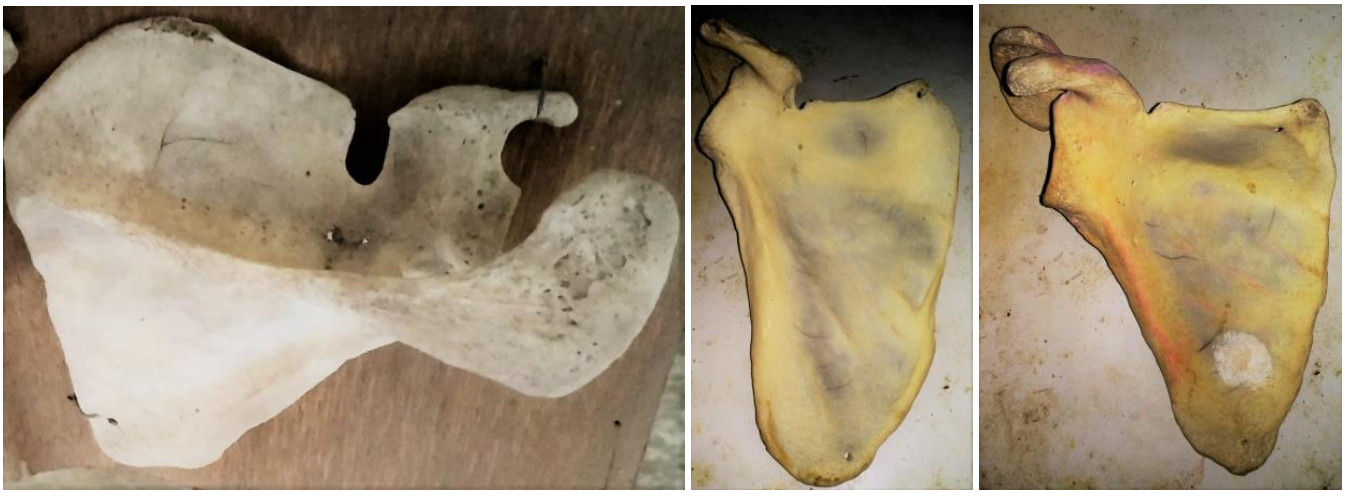
1. Introduction

The scapula also known as shoulder blade is a type of flat bone triangular in shape lies on the posterolateral aspect of thoracic cage and overlying 2nd to 7th ribs. It has two surfaces-costal and dorsal, three borders-superior, lateral (axillary) and medial(vertebral) with three angles- superior, inferior and lateral (glenoid). The triangular body of the scapula is thin and translucent superior and inferior to the scapular sipne (Moore and Dalley, 1999) [12]. The superior border extend from the superior angle to the lateral angle, of three borders it is the thinnest and shortest. The suprascapular notch is present in the lateral part of the superior bordrer near the base of the corocoid process. This notch is converted into a foramen (suprascapular foramen) by the superior tranverse scapular ligament and it transmit suprascapular nerve (Williams, Bannister, Bery el, 2004) [13]. According to Khan, the suprascapular notch is frequently bridged by bone.

Suprascapular notch have been reported with six different types of anatomical variations (Bayramolu, Demiryurek, Tuccar *et al*., 2003) [3]. The variations of shape could be of U-shaped, V-shaped, J-shaped, Indented only, could be converted into a foramen by complete ossification of superior tranverse scapular ligament or may be absence of suprascapular notch. Due to variations in shape of the suprascapular notch suprascapular nerve could be compressed.

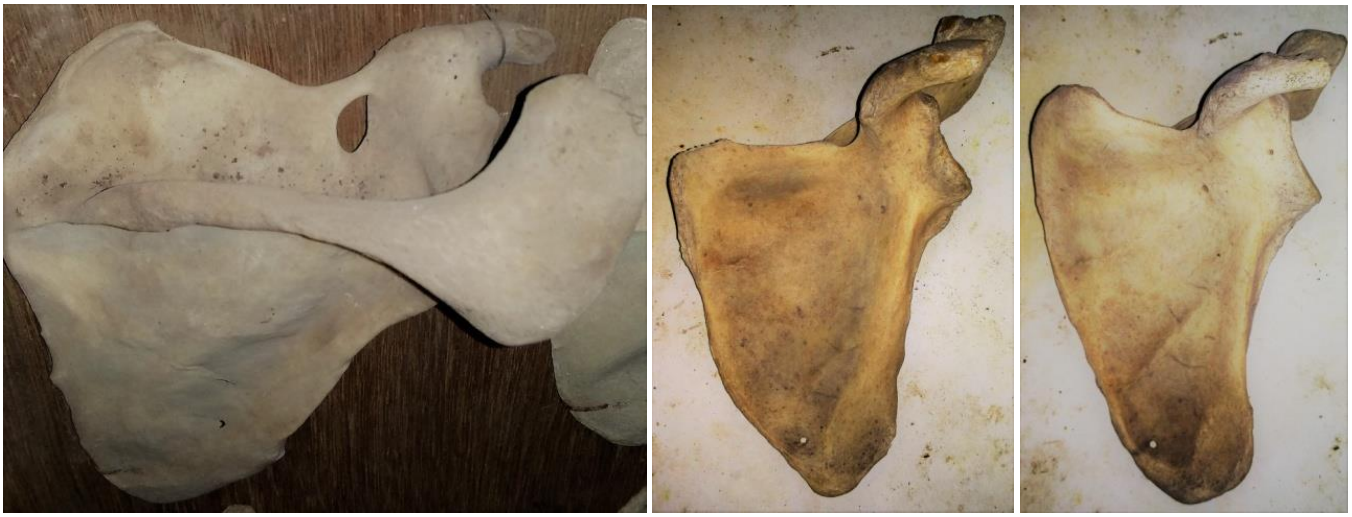
2. Result

Present study was done on 181 dry human scapula, we noted 96(53.04%) had U-shaped, 52(28.73%) had J-shaped, 22(12.15%) had V-shaped, 6(3.3%) had suprascapular foramen, 3(1.66%) had Indended and 2(1.1%) had absent of notch(Figure A-F).



U-Shaped Notch **J-Shaped Notch** **V-shaped Notch**

Fig 1



Suprascapular Foramen **Indentation** **Absent of Notch**

Fig 2

3. Discussion

In past many studied had been conducted regarding the variations in the shape of suprascapular notch. In this study three types- U, J and V are in accordance with this classification. This system classify the suprascapular notch into three distinct types, namely the U-shaped suprascapular notch, defined as having almost parallel sides with a rounded base, J-shaped suprascapular notch defined as one limb is longer with curved base and a V-shaped suprascapular notch defined as having medial and lateral sides which conversed towards a narrow base (Natsis, Totlis, Sikaras *et al*., 2007) [5]. The suprascapular nerve entrapment is more common with a narrow V-shaped notch. A reduction in the height of the suprascapular foramen may predispose to entrapment of the suprascapular nerve and thus cause entrapment neuropathy.

Soni *et al*. have further included four more conditions in their classifications. They are- indentation, absent notch, partial ossification of suprascapular ligament and complete ossification of suprascpular ligament. Rengachary *et al*. classified the suprascapular notch into six type based on inferior shape of the suprascapular notch as well as the degree of ossification of the superior transverse scapular ligament.

Table 1: Shape of suprascapular notch

Shape of the notch	Number with Percentage(%)
U-shaped	96 – 53.04%
J-shaped	52 – 28.73%
V-shaped	22 - 12.15%
Suprascapular Foramen	06 – 3.30%
Indented	03 – 1.66%
Absent of notch	02 – 1.10%

4. Conclusion

In conclusion, knowing the anatomical variation in detail is better for understanding of site and source of suprascapular nerve entrapment neuropathy. The knowledge of anatomical variation in shape of the suprascapular notch should be kept in mind while dealing with patient coming with sign and symptom of suprascapular nerve entrapment syndrome.

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