Classification of Suprascapular Notch According to Anatomical Measurements in Human Scapulae

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ABSTRACT

The objective of this study was to measure the maximum superior and inferior lengths of the suprascapular notch with the help of a Vernier caliper and to classify the notches accordingly into four types. This is an observational study, conducted from January to December 2009 at Islamic International Medical College, Rawalpindi. Two hundred and fifty dried human scapulae were procured and measured irrespective of age, gender, race, and sidedness. The maximum superior and inferior lengths were calculated with the help of a Vernier caliper. The percentage of notches with greater maximum superior length as compared to inferior length was the highest i.e. 68% (type-III); percentage of notches with equal superior and inferior length was 14% (type-II) absence of notch was noted in 10% of scapulae (type-I) and notches with greater maximum superior length as compared to inferior length was 8% (type-IV). Suprascapular nerve entrapment may be associated with a specific type of suprascapular notch.


Absence of notch was noted in 10% of scapulae classified as type-I. Those with equal superior and inferior length were 14% classified as type-II. The edges of notches

Table I: Percentages of scapulae showing differences in lengths of suprascapular notch.

<table>
<thead>
<tr>
<th>Types</th>
<th>Numbers (%)</th>
<th>Criteria for classification</th>
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<tbody>
<tr>
<td>I</td>
<td>27 (10)</td>
<td>Without notch</td>
</tr>
<tr>
<td>II</td>
<td>33 (14)</td>
<td>Equal superior and inferior length (U shape)</td>
</tr>
<tr>
<td>III</td>
<td>170 (68)</td>
<td>Greater maximum superior length as compared to inferior length (V shape)</td>
</tr>
<tr>
<td>IV</td>
<td>20 (8)</td>
<td>Greater inferior maximum length as compared to superior length (inverted V)</td>
</tr>
</tbody>
</table>

Absence of notch was noted in 10% of scapulae classified as type-I. Those with equal superior and inferior length were 14% classified as type-II. The edges of notches...
were sharply defined. The percentage of notches with greater maximum superior length as compared to inferior length was the highest i.e. 68% (Table I). The edges were smooth and shape could be seen closely resembling a ‘V’. Those scapulae were classified as type-III. Notches with greater maximum inferior length as compared to superior length classified as type-IV were 8%.

Many classifications of suprascapular notches have been done in the past. Some researchers classified the suprascapular notch into two distinct types, namely the U-shaped suprascapular notch, defined as having approximately parallel sides with a rounded base, and a V-shaped suprascapular notch, defined as having medial and lateral sides which converge toward a narrow base.\textsuperscript{3,4} A reduction in the height of the suprascapular foramen may predispose to entrapment of the suprascapular nerve.\textsuperscript{6} Suprascapular nerve entrapment is more likely to be associated with a narrow V-shaped notch, however, no direct correlation between notch type and suprascapular nerve entrapment has been shown clinically.\textsuperscript{7} We could not find a narrow V shaped notch; instead the notches were wide V shaped and classified as scapulae with greater superior maximum length as compared to inferior length. Suprascapular nerve entrapment is an acquired neuropathy secondary to compression of the nerve in the bony suprascapular notch.

Knowing the anatomical variations in detail is better for understanding of location and source of the entrapment syndrome. Using this method, the clinician will be able to define easily and quickly the notch type on a plain radiograph, and perhaps be able to correlate suprascapular nerve entrapment with a specific type.

REFERENCES