INTRODUCTION

The suprascapular nerve arises from the upper trunk (Erb’s point) of the brachial plexus in the posterior triangle of the neck. Its root value is C5&6. It supplies motor branches to the supraspinatus and infraspinatus muscles and sensory branches to rotator cuff muscles and ligaments of the shoulder and acromiooclavicular joints. In its course, the nerve passes backward below the clavicle and disappears beneath the anterior border of trapezius. It passes successively through the suprascapular notch below the superior transverse scapular ligament (STSL) and then through spinoglenoid notch beneath spinoglenoid ligament. The suprascapular nerve is liable to be compressed where it crosses osteofibrous canals at the suprascapular and at the spinoglenoid notches. Compression by tumors and ganglion cysts, traction injuries, direct trauma such as fracture of scapula and variations in anatomical course of the nerve have been reported as the causes of suprascapular nerve entrapment.

Suprascapular nerve entrapment is characterized by pain in the posterolateral region of the shoulder, atrophy of the infraspinatus and supraspinatus muscles and weakness of the arm’s external rotation and abduction. 1–2% of shoulder pain is caused by the entrapment of the suprascapular nerve, and therefore can be easily overlooked in the differential diagnoses of shoulder discomfort. Spinoglenoid notch syndrome shares the same symptoms of suprascapular neuropathy, but it is due to the cyst causing compression at the spinoglenoid notch resulting in weakness and wasting of infraspinatus muscle. The incidence of suprascapular neuropathy is as high as 10-30% in volley ball players. Although, uncommon, the spinoglenoid notch syndrome which shares the same symptoms due to entrapment of suprascapular nerve is potentially treatable cause and completely reversible when recognized and intervened early. Since there is dearth of literature regarding the depth of spinoglenoid notch in North Indian population, so, the present study was planned to study the depth of spinoglenoid notch in dry scapula of North Indian population and its comparison between males and females on both sides.

Experimental Section

The present study was conducted on 50 pairs of dry human scapulae in the Deptt. of Anatomy, Pt. B.D. Sharma PGIMS, Rohtak (Haryana) in the year 2017-18. Out of 50 pairs, 30 belonged to males and 20 were of females. Bones with clear and intact features were included in this study. The depth of spinoglenoid notch was measured from the posterior rim of the glenoid cavity to the maximum concavity of the lateral border.

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ABSTRACT

Background: The suprascapular nerve is liable to be compressed where it crosses osteofibrous canals at the suprascapular and at the spinoglenoid notches. Since there is dearth of literature regarding the depth of spinoglenoid notch in North Indian population, so, the present study was planned to study the depth of spinoglenoid notch in dry scapula of North Indian population and its comparison between males and females on both sides.

Methods: The study was performed at Department of Anatomy, PGIMS Rohtak on 50 pairs of human scapula, out of which 30 were males and 20 were females. The depth of spinoglenoid notch was measured using digital vernier caliper. This parameter was compared in both sexes on both the sides.

Results: The mean depth of spinoglenoid notch was observed to be 14.97 mm in the present study. On left side, it was more in males in comparison to females with statistically significant difference.

Conclusions: Knowledge of the morphometric parameter of spinoglenoid notch is important for Orthopaedicians, Forensic experts and Anatomists.
of the spine of scapula. The depth of spinoglenoid notch was measured using digital vernier caliper accurate up to 0.01 mm.

Data obtained was analysed using SPSS 17.1 software. The Independent t-test was employed in the assessment of side and gender differences. p-value ≤ 0.05 was considered significant.

**RESULTS**

The mean depth of spinoglenoid notch was observed to be 14.97 mm in the present study. It was found to be 15.18 mm in males, 14.66 mm in females, 15.13 mm on right side and 14.81 mm on left side. On left side, it was more in males in comparison to females with statistically significant difference (Table 1).

### Table 1 Comparison of the mean depth of spinoglenoid notch between males and females on both sides with p value

<table>
<thead>
<tr>
<th>Side of Scapula</th>
<th>Mean ± SD</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Males n=30</td>
<td>Females n=20</td>
</tr>
<tr>
<td>Right</td>
<td>14.76 ± 1.9</td>
<td>14.9 ± 2.2</td>
</tr>
<tr>
<td>Left</td>
<td>15.6 ± 2.02</td>
<td>14.42 ± 1.58</td>
</tr>
</tbody>
</table>

The mean depth of spinoglenoid notch was more on right side in females and more on left side in males, but the difference was found to be statistically insignificant (Table 2).

### Table 2 Comparison of the mean depth of spinoglenoid notch between right and left sides in both males and females with p value

<table>
<thead>
<tr>
<th>Gender</th>
<th>Mean ± SD</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Right</td>
<td>Left</td>
</tr>
<tr>
<td>Male</td>
<td>14.76 ± 1.9</td>
<td>15.6 ± 2.02</td>
</tr>
<tr>
<td>Female</td>
<td>14.9 ± 2.2</td>
<td>14.42 ± 1.58</td>
</tr>
</tbody>
</table>

**DISCUSSION**

Suprascapular nerve neuropathy secondary to ganglion cyst impingement causes shoulder pain and therefore often mistaken as rotator cuff injury or cervical spondylosis and treated by orthopedician until they develop significant wasting and weakness of infraspinatus muscle. Patients typically present with shoulder pain exacerbated by abduction and external rotation. Suprascapular nerve compression at the spinoglenoid notch results in weakness of only the infraspinatus, but if the involvement is at the suprascapular notch, it can cause weakness of both infra and supraspinati. There is scarcity of literature regarding the depth of spinoglenoid notch. Pahuja et al performed a study on 129 scapula of unknown age and gender and reported that the mean depth of spinoglenoid notch was 17.2 ± 2.4 mm and found it to be higher on left side. In the present study, we found the mean depth of spinoglenoid notch to be 14.97 mm and it was more on right side in females and more on left side in males.

**CONCLUSION**

In the present study on 100 scapulae, the mean depth of the spinoglenoid notch was more in males in comparison to females on left side with statistically significant difference. The above data may not only help the orthopaedic surgeons during surgical repair of the suprascapular nerve entrapment in the spinoglenoid notch but also may be of interest to the forensic experts in determination of gender from this parameter.

**References**