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### The anterolateral ligament of the knee: Descriptive anatomy and clinical correlation



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**Introduction:** Anterolateral ligament (ALL) rupture has been hypothesized to be responsible for residual rotatory laxity after isolated intra-articular reconstruction of the ACL. The aim of the present study was to observe anatomical parameters of the ALL of the knee joint in the Indian population.

**Materials and methods:** The qualitative and quantitative characteristics of the ALL were observed in 20 embalmed cadaveric specimens – 12 female (6 right and 6 left) and 8 male (4 right and 3 left). After isolating the ALL, its length, width, and points of attachments were determined.

**Observations:** The ALL was observed in all but one specimen (95%) in the anterolateral region of the knee separate from the joint capsule. Its proximal attachment was at the lateral femoral epicondyle anterior and distal to the attachment of the fibular collateral ligament. Distally the superficial fibres of the ALL inserted close to the Gerdy's tubercle at the level of the fibular head and the deeper fibres merged with lateral meniscus. The mean length of the ALL was 43.35 mm in flexion and 40.38 mm in extension. The average width of the ALL was 6.98 mm at its origin and 9.36 mm at its insertion.

**Conclusion:** 95% of specimens studied showed presence of ALL in Indian population. The ALL may play a role in internal tibial rotation owing to its anatomical location and attachments.

#### Conflicts of interest

The authors have none to declare.

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### Study of brachial plexus with regards to its formation, branching pattern and variations and possible clinical implications of those variations



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**Introduction:** Through this study we intend to search variations in formation and branching pattern of brachial plexus and correlate them with possible clinical and surgical implications.

**Materials and methods:** 25 Human bodies were dissected for this study. Dissection was started in posterior triangle of neck and extended to distal part of upper limb passing through axilla. Photographs were taken and data was tabulated and analyzed.

**Observations:** All 50 plexuses had origin from C5 to T1. Dorsal scapular nerve was absent in 2 plexuses. Long thoracic nerve was made of C5, C6 fibers in one and of C6, C7 fibers in another. Lower trunk was abnormal in 2 plexuses both of same body, their was no contribution from T1 fibers to posterior cord in one of these plexuses. One plexus had double lateral pectoral nerve, communication between lateral and medial pectoral nerves, lateral pectoral and medial root of median nerve and also between musculocutaneous and lateral root of median nerve. 2 more plexuses had communication between lateral and medial pectoral nerves. One

plexus showed 2 branches coming from posterior division of upper trunk itself before formation of posterior cord.

**Discussion and conclusion:** These variations may make clinical interpretation of injury to plexus disease of plexus difficult. The variations may pose challenges for surgeons and anesthetists but at the same time they may help explain some previously ill understood presentations and outcomes of treatment procedures.

#### Conflicts of interest

The author has none to declare.

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### Morphometric analysis of glenoid cavity in dry adult scapulae and its surgical implications



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**Background:** The variable anatomy of glenoid cavity is of great importance during evaluation of different pathological conditions like rotator cuff disease, osteochondral defects and Bankart lesion. The aim of this study was to present an anthropometric reference database of scapulae and the glenoid cavity in Indian population and enable comparison with other populations.

**Materials and methods:** A total of 206 adult dry undamaged scapulae (106 left side, 100 right side) were selected from the Department of Anatomy, MAMC, and New Delhi. All linear measurements were carried out with the help of digital vernier caliper and glenoid version angle was calculated by using digital photograph and imageJ analyser.

**Results:** In the present study, the most common shape of glenoid cavity was found to be pear shaped (50%), followed by inverted comma shaped (30.58%). The least common shape was oval (19.42%). The mean scapular length was observed to be  $136.83 \pm 10.10$  mm, the mean scapular breadth was  $98.89 \pm 6.58$  mm, the mean supero-inferior glenoid diameter was  $35.81 \pm 2.22$  mm, the mean antero-posterior-1 glenoid diameter was  $24.28 \pm 2.31$  mm and the mean antero-posterior-2 glenoid diameter was  $16.37 \pm 2.84$  mm. The mean glenoid cavity index was  $67.37 \pm 5.80$ %. In all the above measurements, bilateral differences were found to be statistically insignificant. The mean value of the glenoid version angle ranges from  $-14.58^\circ$  to  $+4.36^\circ$  and the right sided being significantly retroverted.

**Conclusion:** This data will be helpful for proper alignment and fixation of the implants during shoulder arthroplasty because any variance from normal would alter gleno-humeral mechanics and may predispose to instability and arthropathy.

#### Conflicts of interest

The authors have none to declare.

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