OBJECTIVES:

i) To study topography of radial nerve in relation to certain external landmarks.

ii) To locate origins and point of entry of radial nerve branches to triceps.

iii) To study branching patterns of radial nerve to triceps

METHODS:

28 arms were dissected. The acromion - transepicondylar distance and the points where radial nerve reached and left spiral groove and pierced lateral intermuscular septum were determined. The distances from lateral epicondyle to superior and inferior margins of spiral groove were measured. In order to locate the radial nerve intraoperatively, the distance of radial nerve from distal end of detoid tuberosity,
point of confluence and lateral border of triceps aponeurosis was determined. The
distances of the branches from deltoid and teres major were measured. Study of
the innervation patterns of the triceps was done and the most suitable branch for
nerve transfer was determined. The measurements made were compared between
the side of the specimen using paired t-test.

RESULTS:

The acromion – transepicondylar distance was 268.1 mm. The radial nerve reached
and left spiral groove and pierced lateral intermuscular septum, at the levels of
40.6%, 54.7%, and 67% of the acromion - transepicondylar line, respectively.
Distance from lateral epicondyle to superior and inferior margins of spiral groove
were 188.4 mm and 127.4 mm respectively. Length of spiral groove was 62.4 mm.
The division of the radial nerve into superficial and deep branches was above
transepicondylar line in 85.7%, and below transepicondylar line in 14.3% of
arms. The distances between radial nerve and distal end of deltoid tuberosity and
point of confluence were 37.6 mm and 39.7 mm respectively. The radial nerve was
found to pass at a distance of 12 – 19.5 mm from lateral border of triceps
aponeurosis. Each head of the triceps brachii had a mean number of 1.1 nerve
branches innervating it. The distance from the deltoid muscle to origin and entry
point of - branch to long head of triceps was 62.8 mm and 48.6 mm; branch to
lateral head - 56.1 mm and 26.7 mm; branch to medial head -49.3 mm and 27.8
mm. Distances from teres major and origin of branch to long head, lateral head
and medial head were 9.9 mm, 10 mm and 16.7 mm respectively. The most common pattern of nerve branching seen was Type C3 (78.6%).

**Keywords:** Radial nerve; triceps brachii; humeral fracture; nerve transfer; spiral groove