

Case Report

VARIATION IN BRANCHING PATTERN OF AXILLARY NERVE

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ABSTRACT

In our present case the axillary nerve on both sides was arising from posterior cord. About 2.5cm from its origin at the lateral border of subscapularis, it gave 2 branches i.e anterior and posterior branch. The axillary nerve branched before entering the quadrangular space. Knowledge of the precise relationship of the branches of the axillary nerve, its relationship to the shoulder capsule and its common variations within deltoid muscle is necessary for performing surgical procedures over shoulder and reduce the incidence of iatrogenic nerve damage.

KEYWORDS: Axillary nerve, Quadrangular space, Shoulder joint.

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INTRODUCTION

Axillary nerve (C5, C6) or circumflex humeral nerve is stout branch from the posterior cord of brachial plexus. It leaves the posterior wall of axilla along with posterior circumflex humeral vessels and enters the quadrangular space. The trunk of axillary nerve while passing through the quadrangular space gives a first branch to shoulder joint, there after it divides into anterior and posterior branches.

Axillary nerve is described as having two posterior branches, one of which supplies the Teres minor to become the superior-lateral brachial cutaneous nerve while the other supplies the posterior aspect of the deltoid [1]. Where as anterior branch accompanies the posterior circumflex humeral vessel and winds around posterior surface of surgical neck of

humerus and supplies anterior and middle fibers of deltoid [2].

CASE REPORT

During routine dissection of axilla for undergraduate students in Department of Anatomy of Bidar institute of medical sciences, Bidar, Karnataka, India. Among 13 cadavers dissected we found variation in branching pattern of axillary nerve on both sides in a male cadaver.

On observation Axillary nerve on both sides was arising from posterior cord. About 2.5cm from its origin near the inferior border of subscapularis it gave 2 branches i.e. anterior and posterior branch. Both the branches entered the quadrangular space. At the origin anterior branch first gave a branch to joint capsule and later supplied the anterior part of deltoid, and

post branch supplied the posterior part of deltoid as well as a branch to Teres minor, it showed typical pseudo ganglion.

Fig. 1: Showing axillary nerve branching after entering quadrangular space.

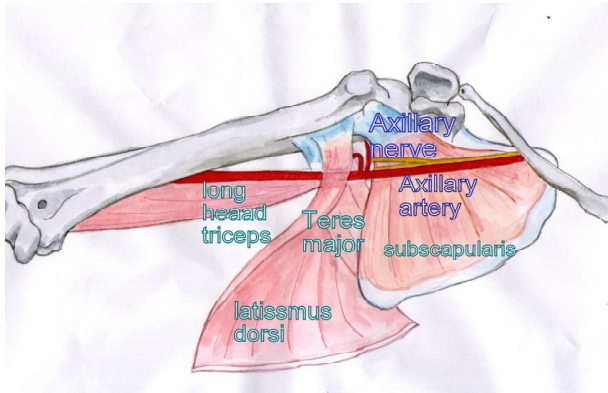
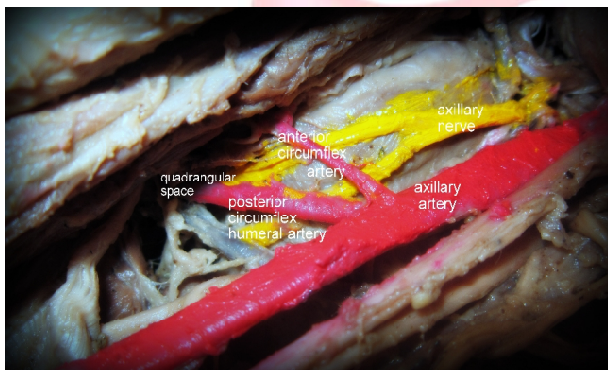


Fig. 2: Showing photograph of axillary nerve branching before entering quadrangular space.



DISCUSSION

In the present case the axillary nerve on both sides is branching before entering the quadrangular space and both the branches are supplying the muscle normally.

In a study by Loukas. M et al. reported that 65% of cases branching of axillary nerve was within quadrangular space and in 35% case branching within the deltoid muscle [3].

Tubbs RS et al also studied the anatomy of the axillary nerve within the quadrangular space in 15 human cadavers and stated that the nerve branched within the quadrangular space in 33% cases and posterior to it in cases 66%cases [4]. No cases were reported of branching of axillary nerve before entering the quadrangular space.

CONCLUSION

Axillary nerve injury can be due to

- Anterior dislocation of the humerus at the glenohumeral joint.

- Fracture of the humerus at the surgical neck
- Compression in quadrilateral space causing quadrilateral space syndrome
- Iatrogenic [5].

In our present study the Axillary nerve branched before entering the quadrangular space, but the branches supplied the muscles normally. Knowledge of such variation is important for anesthetists and also to orthopaedicians while performing axillary nerve block prior to the correction of fractures or during operative procedure of shoulder.

Knowledge of this variation may also be useful for surgeons for improved guidance during infra clavicular block procedures and for surgical approaches of tumors involving axillary region.

Conflicts of Interests: None

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