

Morphometric analysis of axillary nerve anatomical and surgical points in adult human cadavers

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The aim of this study is to introduce new distance measurements of the axillary nerve and make a statistic comparison between such measurements at the left and right sides of the body. The measurements consist of the axillary nerve distance to the achromion anterolateral edge (ANDAA); to the greater tubercle of the humerus, at the level of the lesser tubercle (ANDGT) and to the median point of the superior edge of the greater tubercle of the humerus (ANDGTm). 30 upper limbs of adult human cadavers were dissected, 19 from the right side and 11 from the left side of the body, with skin incisions starting at the achromion anterolateral edge. The subcutaneous tissue was removed and an incision was performed at the rafé between the anterior and middle heads of the deltoid muscle. The axillary nerve and the posterior circumflex humeral artery were identified and isolated. Three points were marked: achromion anterolateral edge, median point of the greater tubercle of the humerus at the lesser tubercle's level and the superior edge of the greater tubercle. Photographic registries and statistic study of the anatomical pieces were performed. The distance of the axillary nerve to the acromion ranged from 4.55 to 7.55 cm (average: 6.48 cm); the distance of the axillary nerve to the greater tubercle of the humerus, at the level of the lesser tubercle ranged from 1.75 to 3.74 cm (average: 2.78 cm); and the distance of the axillary nerve to the middle point of the superior edge of the greater tubercle ranged from 2.64 to 4.72 cm, (average: 3.55 cm). The study of these points may contribute to improve the safety of axillary nerve dissection during shoulder surgical procedures, thus allowing pre-operative planning and decreasing the risk of axillary nerve surgical injury.