

Abstract:

The thesis describes the anatomical study, which has been taken place at Orthopedic Clinic of the 1st Faculty of Medicine, Motol University Hospital and at Institute of Anatomy 1st Faculty of Medicine, Charles University in Prague from 2002 till 2009. The study was focused on the area of the upper part of the humerus in order to measure spatial relationships among anatomical structures, especially attachments of rotator cuff muscles to optimize implantation arthroplasty of shoulder joint.

Clinico-anatomical study, which results were published in 2010, was also based at measuring angular relations of structures proximal humerus. The proximal humerus was marked by 29 points on the cortical bone, which defined the position of the medial margin of the greater tubercle, the lateral margin of the lesser tubercle, bicipital groove, the crest of greater tubercle and to define position of the proximal humeral metaphyseal axis and anatomical neck.

Measurements were carried out in the transversal planes and the measurement method was developed on the reconstruction and the spatial definition of basic axes (axis of humeral head and axis of proximal humeral shaft) with the optimized number of reference points of anatomical neck and cortical bone of proximal humeral shaft. Angles between the axis of the head and defined landmarks of muscles attachments and bicipital groove were then measured.

Results of the study were used to assess the suitability of bony landmarks of the proximal humerus as far as their accuracy in reconstruction of the retrotorsion during operation of shoulder arthroplasty. We also proposed average angles suitable for reconstruction the retrotorsion.