

# FULL ARTHROSCOPIC DISSECTION OF THE AXILLARY NERVE: AN ANATOMICAL STUDY

400 WORDS

## HYPOTHESIS

Axillary nerve dissection is uneasy due to its specific course: frontward to the shoulder in the medial part and backward to the shoulder in the lateral part. Indeed, an open neurolysis may necessitate 2 approaches, an anterior and a posterior one.<sup>1,2,3,4</sup>

Our objectives were:

- to precise the arthroscopic anatomy and anatomic relations of the axillary nerve all along its course (origin from the posterior cord, passage through the quadrangular space, final sensitive and motor divisions)
- performing a full arthroscopic release

## METHODS

6 specimens were used on both sides (n=12).

All measurements were performed in casual shoulder arthroscopy conditions; a beach chair position, a 50mmHg pump pressure, a 4mm arthroscope, a graduated probe for measuring. We used 7 arthroscopic portals (3 dorsals and 4 volars). The observational margin of error was 1mm. (5 measurements with 3 surgeons)

Analysis criteria were :

- anatomic nerve relations, distance to the nerve were measured with the probe from various spots (coracoid process, humerus, insertion of the sub-scapularis tendon...)
- influences of pectoralis minor tenotomy and external rotation on the shortest distance from the coracoid to the nerve were measured
- numbers and positions of the terminal divisions

## RESULTS

The origin of the nerve from the posterior cord was 4 cm (3,6-4,7) medial to the coracoid process. The nerve passes 15mm (13-18) from the inferior-medial edge of the coracoid process, which is the shortest distance. The nerve crosses beneath the sub-scapularis muscle 4,5cm (4-5,2) medial to the sub-scapularis tendon insertion.

After pectoralis minor tenotomy, the distance from the coracoid to the nerve increased of 3mm (1-4).

External rotation of the shoulder didn't influence the distance from the coracoid to the nerve (<1mm).

None division was observed proximal to the quadrangular space. There were at least 3 final divisions in all specimens, 4 divisions in 10 cases.

## SUMMARY POINT

Applications of this anatomical work are various:

**-making the anterior shoulder surgery safer, especially the arthroscopic Latarjet  
-simplifying the surgery of the axillary nerve by enabling arthroscopic nerve  
assessment and full release**

<sup>5,6</sup>

Photos :

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