

Extended insertion of teres minor muscle: a rare case report

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SUMMARY

Teres minor is one of the muscles of the shoulder joint along with subscapularis, supraspinatus and infraspinatus forming rotator cuff. Variations of teres minor are relatively uncommon. A unique and extended insertion of this muscle is being reported in the present case. Knowledge of the anatomy of this muscle is important to avoid injury to the axillary nerve and posterior circumflex humeral vessels while surgically approaching the shoulder joint and inserting portals of the arthroscope in a posterior approach to the shoulder joint.

Key words: Teres minor – Rotator cuff – Shoulder joint – Capsule of shoulder joint – Humerus – Surgical neck of humerus

INTRODUCTION

Teres minor is a one of the short scapular muscles forming the rotator cuff of the shoulder joint. It takes origin from the upper two-thirds of the dorsal surface of the lateral border of the scapula and from two aponeurotic laminae, one of which separates it from the infraspinatus muscle, while the other separates it from the teres major muscle. It runs obliquely

upwards and laterally, and gets inserted on the lowest of the three impressions on the greater tubercle of the humerus and fuses with the capsule of the shoulder joint along with other muscles forming the rotator cuff. It is innervated by the posterior branch of the axillary nerve. It stabilizes the humerus by holding the humeral head in the glenoid cavity of the scapula, and causes lateral rotation of the arm (Johnson, 2008). Variations of teres minor are relatively uncommon and have been occasionally reported by various authors (Bergman et al., 2006).

CASE REPORT

During routine dissection of the shoulder region of upper limb of an approximately 50 year-old male cadaver for undergraduate teaching and training, a unique and extended insertion of the teres minor muscle was found on the right side. It was not only covering the lowermost impression of the greater tuberosity, but was also found to be extending to the postero-superior and lateral portions of the capsule of the shoulder joint over the head of the humerus. Further, its insertion was extended to the upper part of the surgical neck of the humerus (Fig. 1). Fibers of teres minor were not

found to be fused with infraspinatus, teres major or biceps brachii muscles. It was supplied by a posterior branch of the axillary nerve.

DISCUSSION

Very few cases regarding variation in the insertion of teres minor have been reported. However, a muscle was named *teres minimus scapulae* where there was partial separation of fibers of the teres minor muscle into two parts, one inserted on to the greater tubercle and the other on to the surgical neck of humerus (Bergman et al., 2006). The present case is not similar to the *teres minimus scapulae*, as in our case its fibers were not separated near insertion, but were extended to a larger area on the posterolateral part of the capsule of the shoulder joint and a small part of the surgical neck of the humerus. Besides lateral rotation of the shoulder joint, this extended insertion may provide extra strength to the capsule from the posterolateral aspect, thereby decreasing the posterior dislocations. Knowledge of such variations is important for orthopedic surgeons while practising shoulder

surgery for treatment of fractures and dislocations. In arthroscopy, posterior approach to the shoulder joint requires a thorough knowledge of the anatomy of this muscle in order to avoid injury to the axillary nerve and the posterior circumflex humeral vessels (Andrew, 2003). Moreover, since the posterior portal in arthroscopy for the shoulder joint is being placed between infraspinatus and teres minor muscles, knowledge of their local anatomy becomes vital (Barry, 2008).

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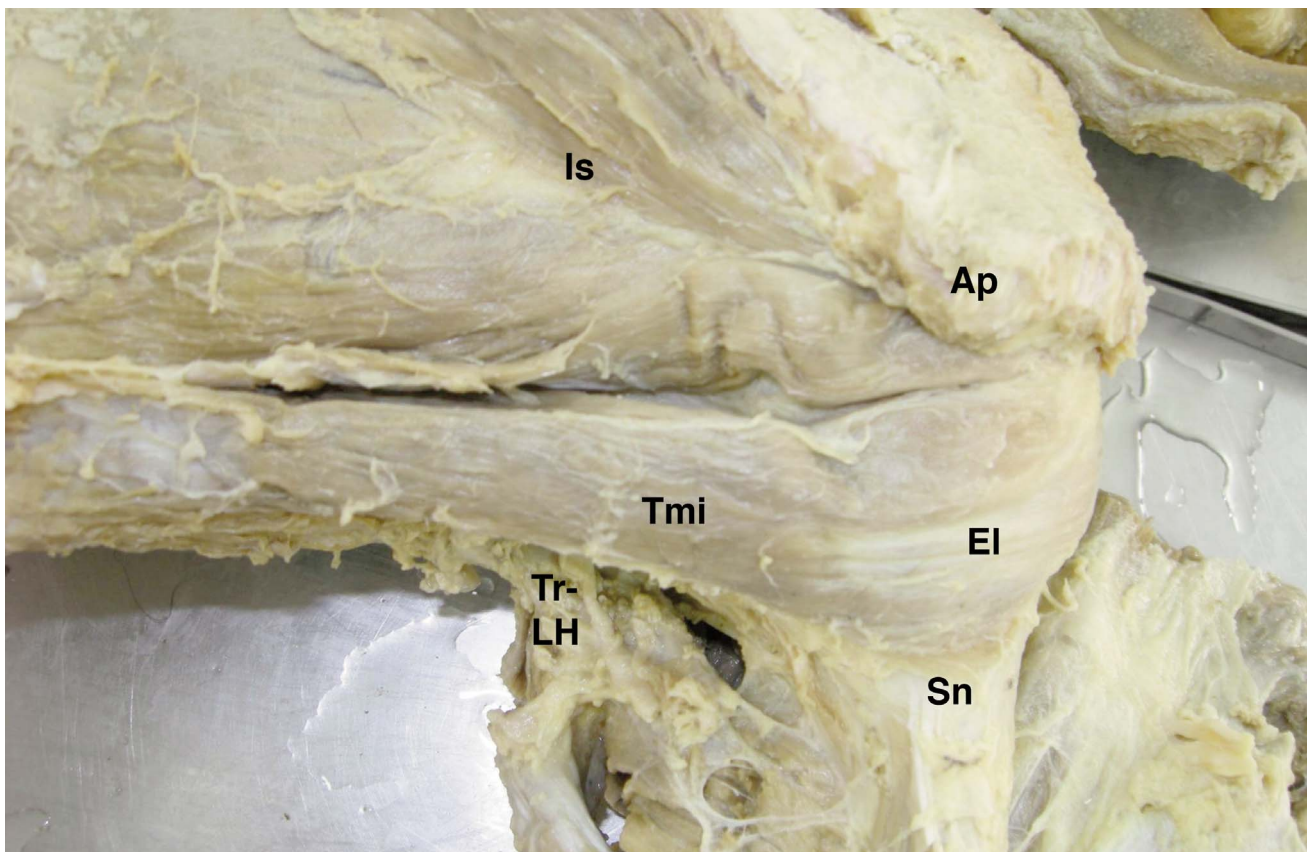


Fig. 1. Extended insertion of teres minor muscle (deltoid and long head of triceps muscle cut from origin). Tmi= Teres minor muscle; EI= extended insertion of Tmi; TL= Triceps (long head) muscle; Sn= Surgical neck of humerus; Is= Infraspinatus muscle; Ap= Acromian process; TrLH= Triceps long head.