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Additional muscular slip to biceps brachii from brachialis and brachioradialis muscles – a case report

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Muscular variations in the extremities are relatively less when compared to vascular variations. Few muscles show additional heads of origin apart from their original heads. In the present case, we observed additional muscular slips in the right arm of an adult male cadaver aged approximately 60 years. The variation was unilateral. The superficial fibers of brachialis muscle joined the deep surface of biceps brachii, just before the formation of the tendon of biceps brachii. These superficial fibers of the brachialis are separated from the deeper main part of the muscle by musculocutaneous nerve. Some of the fibers of the brachioradialis which originated from the lateral intramuscular septum passed distally and superficially to become tendinous and then joined the lateral side of the biceps brachii tendon. The incidence of additional muscular slips to biceps brachii from brachialis and brachioradialis is unusual. The role of muscle slip in compression syndrome is a well-known phenomenon. The orthopedicians, neurologists and surgeons need to be aware of such variations while dealing with upper limb injuries or operations around the elbow joint.

Conflicts of interest

The authors have none to declare.

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A radiographic review of the subacromial architecture: a South African study

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The subacromial space, which is occupied by the subacromial bursa, rotator cuff complex and the long head of the biceps brachii tendon, is a well-known area of study due to its association with subacromial disease. Although it is demarcated by the coraco-acromial arch and the supraglenoid tubercle, degenerative changes in these osteological components often lead to mechanical narrowing and subsequent tendon abrasion. In addition to the morphological characteristics, the morphometry of the subacromial architecture is considered to play an important role in maintaining glenohumeral stability. Accordingly, the present study outlined the morphometry of the subacromial architecture and the acromial morphology from a radiological perspective.

A total of 120 true lateral-outlet view radiographs (n = 120), representative of 58 males and 62 females of the Black (12), Coloured (10), Indian (27) and White (71) race groups, were analysed. In addition to calculation of the standard and population-specific means, the acromial classification scheme of Bigliani et al. (1986) was adopted.

A trend of ascending values from Type III (16.7%) to Type II (37.5%) to Type I (45.8%) acromia was noted. Various shapes of the subacromial space were observed, viz. rhomboidal (20.0%), trapezoidal (65.8%) and triangular (14.1%). Since a statistically significant *P* value of 0.030 was recorded for the comparison of acromial type with the shape of the subacromial space, the shape of the subacromial space appeared to be dependent on the acromial type.

While the parameters were determined with regard to the demographic representation of South Africa, this study also provided standard mean values which was not previously reported. Furthermore, the correlation of the acromio-glenoidal length with side, gender and shape of the subacromial space reflected levels of significance and highlighted this parameter as a diagnostic determinant of subacromial disease due to its tendency to change in accordance with the demographic and morphological factors.

Conflicts of interest

The authors have none to declare.

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Bilateral rectus sternalis muscle with its clinical implications

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Objective: The case report focuses on morphological features, homology and innervation of the muscle and aid in awareness about this muscular variation amongst clinicians involved in surgeries and medical imaging related to anterior thoracic region.

Method: During routine dissection of pectoral region in a 38 year old embalmed male cadaver in the department of anatomy, University College of medical sciences, Delhi, we observed an accessory muscle, the sternalis, present bilaterally in the pectoral region superficial to the pectoralis major muscle and partially overlying the sternum.

Result: Based on the morphological characteristics described by Jelev et al, the muscular variation in the present case can be identified as sternalis as it was located between the superficial fascia of the anterior chest wall and the pectoral fascia, getting its origin from the sternum, inserted onto the costal cartilages, aponeurosis of the external oblique muscle and the sheath of rectus abdominis, and innervated by the intercostal nerves.

Conclusion: The presence of sternalis muscle in the anterior chest wall is a well-known muscular variation amongst anatomists though its origin, aetiology and function are still a topic of debate. The radiologists, surgeons and other clinicians are still not well versed with this variation which leads to diagnostic confusion and unnecessary surgeries in anterior chest region. This muscle can found its use not only in breast surgeries but also as pedicle flap or flap with microvascular anastomosis during plastic and reconstructive surgeries of the head and neck region.

Conflicts of interest

The authors have none to declare.

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