

Relationship of suprascapular neurovascular bundle to suprascapular ligament: a cadaveric study

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The suprascapular nerve usually runs beneath the suprascapular ligament/superior transverse scapular ligament at the suprascapular notch and the spinoglenoid ligament (inferior transverse scapular ligament) at the spinoglenoid notch. However, the location of the artery and vein is highly variable according to literature. The suprascapular nerve arises from the upper trunk of the brachial plexus (C5, C6) whilst the artery usually originates as the first branch of the thyrocervical trunk. The artery and vein join the nerve at the medial half of the superior border of the scapula where variations are described. These variations may lead to decreased space in suprascapular notch. Thus, we conducted a descriptive study to recognize the relationship of the structures in the suprascapular neurovascular bundle to the suprascapular ligament and to classify variations.

34 formalin fixed human cadaveric shoulders in 17 cadavers were used, to dissect the suprascapular region. Here the relationship of the suprascapular nerve, artery and vein to the ligament was noted. The study was carried out in the dissection laboratory of Department of Anatomy, Faculty of Medicine, University of Peradeniya, Sri Lanka in the year 2016.

The relationships were categorized into 5, Type A being artery above the ligament, with vein below (2.94%), Type B where artery and vein ran above (70.58%), type C where both vein and artery ran below (17.64%), type D where vein ran above whilst artery ran below (2.94%) and type E which had two arteries one running above and the other below with a vein running above (5.88%). In all types the nerve ran below the ligament.

Knowledge of the morphological variations of the suprascapular region with regard to the neurovascular bundle is an important consideration during surgical and arthroscopic procedures around the suprascapular notch. It is also important to understand the variations that can induce entrapment of suprascapular nerve. The vulnerability towards entrapment in various morphological types could be further studied using living subjects especially in those involved in violent overhead sports. Thus, the knowledge gained is important during surgical interventions of the region to predict and prevent complications, and also for etiological diagnosis in patients coming with suprascapular neuropathy.