A RARE VARIATION OF SUBCLAVIUS MUSCLE

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ABSTRACT:
During routine dissection of upper limb, we came across a very interesting unilateral variation of subclavius muscle in an adult male cadaver. The origin of the muscle was normal i.e. from the first costochondral junction. Main muscle belly was inserting into the subclavian groove of clavicle. A small accessory belly from the main muscle mass was running inferolaterally with some of its fiber merging with coracoid process, some with axillary sheath and some with fascia covering subscapularis muscle. Apart from this accessory belly, another additional belly was passing posteriorly from the main muscle mass and was gaining attachment to the upper border of scapula lateral to the suprascapular notch. The main muscle mass along with all the additional bellies were supplied by nerve to subclavius. Presence of such accessory muscle can be a potential cause of thoracic outlet syndrome.

Key words: Subclavius posticus muscle, variation, thoracic outlet syndrome, suprascapular notch.

INTRODUCTION
Subclavius is a small triangular muscle tucked between clavicle and first rib. Sometimes an aberrant muscle is described in the infraclavicular region which is proximally attached to first rib and distally to the transverse scapular ligament or the superior margin of the scapula. This muscle was first described by Rossenmuller in 1800 and named as subclavius posticus. Tountas et al. reported that this aberrant muscle arises from the first rib cartilage, passes behind and beneath the clavicle and normal subclavius muscle. The muscle described in the present case is a variant of subclavius posticus muscle.

CASE REPORT
During routine dissection studies for undergraduate medical students in the Department of Anatomy, King George's Medical University, UP, Lucknow, a unilateral variation of the subclavius muscle was observed on the right side of a seventy years old male cadaver. The main belly of subclavius was attached to the superior surface of first rib along its costal cartilage and superolaterally to the under surface of middle 1/3 of clavicle. Some fibers of main belly which can be designated as subclavius anticus were continuous laterally and fanned out to get attached to the coracoid process, axillary sheath and fascia covering subscapularis muscle. The fibers going to the axillary sheath were passing superficial to the axillary vessels and brachial plexus. An additional belly of the muscle can be called as subclavius posticus separated out from the main costal attachment, extended backwards and laterally to gain attachment to the transverse scapular ligament and adjoining area of superior border of scapula just medial to the supra scapular notch (Fig.1 & 2). A careful dissection revealed that subclavius along with its anomalous parts were supplied by nerve to subclavius.

DISCUSSION
Anomalous differentiation of primary pectoral muscle anlagen may give rise to variations of the subclavius muscle. There may be absence of subclavius muscle which is very rare or an additional belly (duplication) may be present. Several aberrant muscles in relation to human clavicle have been described. These aberrant muscles are of importance as they can cause compression on the brachial plexus and the subclavian artery resulting in thoracic outlet syndrome. Aberrant muscles connecting the costal cartilage of first rib and upper margin of scapula termed as subclavius posticus have been reported by many authors. According to different authors the attachment of this muscle on scapula varied but its attachment on first rib was same i.e. on costal cartilage. Akita et al., Kutoglu et al. and Singhal et al. reported the attachment of this muscle on superior margin of scapula just medioaudal to inferior belly of omohyoid. Sarikcioglu et al. and Forcada et al. noted its attachment on superior margin of scapula and transverse scapular ligament. Martin et al. observed its attachment to first rib, clavicle on one side and to the transverse scapular ligament and coracoid process to other side. But the innervation as described by them was different. According to Akita et al. and Martin et al., the aberrant muscle was supplied by nerve to subclavius while some noted its innervation from suprascapular nerve which is similar to the present study.

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Shetty et al., revealed in his study that the origin of subclavius was normal but inserted into a considerably thick additional ligament that extended from the medial margin of the suprascapular notch, immediately medial to the attachment of inferior belly of omohyoid and laterally blended with the capsule of acromio-clavicular joint. The muscle was innervated by nerve to subclavius and accessory phrenic nerve. The muscle regardless of their innervations ran superficial to the subclavian vessels and brachial plexus.

It has been suggested that, in Weister rats the subclavius muscle might develop from an analage of the hypobranchial musculature near and/or in the junctional region between the hypobranchial and the pectoral regions of the body trunk. The region might phylogenetically and ontogenetically, concomitant with the development of the heart and lungs, undergo remarkable changes, to which variation of this muscle and its innervations could be attributed.

Cases reported till now, only mention one definite accessory belly of subclavius usually attached on one side to upper margin of scapula and to the costal cartilage of first rib. But in the present case, we reported two definite bellies of subclavius arising from first costal cartilage. Out of these, the one which was attached to the upper margin of scapula resembles sublavius posticus whereas the anterior belly which can be better designated as subclavius anticus having additional attachments to the coracoid process, axillary sheath and fascia covering subscapularis. This variation of sublavius in the form of subclavius anticus has not been described and therefore is worth reporting.

These aberrant muscles cause vascular and or nerve compression. The Paget-Von Scherotter syndrome is one type of symptom complex of thoracic outlet syndrome, and is recognized as spontaneous or effort-related thrombosis of the axillo-subclavian vein. Therefore, during examining the patients with thoracic outlet syndrome, the presence of such aberrant muscle should be kept in mind.

**CONCLUSION**

The additional belly of sublavius reported in the present study is subclavius posticus muscle. The main belly of subclavius is not only attached to the clavicle but also to the coracoid process, axillary sheath and fascia covering subscapularis muscle, which is not yet reported.

**REFERENCES**


