

CASE REPORT

Variation of the Splenius Capitis Muscle

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Abstract

During a routine dissection, a novel variant of the splenius capitis muscle, with a unique orientation, was found on a 75-year-old cadaver. These muscle fibers were found running perpendicular to the primary body of the occipital muscles, from the insertion on the occiput laterally into fascia. This finding varies from the expected anatomy of the region.

Introduction:

The splenius capitis is a muscle of the superficial layer of the muscles of the back. These muscles are named for the region of the back they are found, with the capitis region running from along the cervical vertebrae to the base of the skull. The muscle originates on the spinous processes of the cervical and region, and inserts into the mastoid process of the temporal bone and lateral one-third of the superior nuchal line of the occiput. The fibers of the superficial back muscles are described as running caudal to cranial. This muscle functions bilaterally to extend the head and unilaterally to flex and rotate to the ipsilateral side. The other muscle of the superficial back, the splenius cervicis, acts bilaterally to extend and unilaterally to rotate the cervical spine. [1] The variant in this case presentation run perpendicular to the standard orientation, arising from the muscle body at C1/C2 and run laterally to insert into fascia. This variant was unilateral in nature, and did not appear with any other muscle variations noted.

Case Report:

During performance of a routine dissection in the gross anatomy lab, muscle fibers of unusual orientation were noted unilaterally on the left side of a 75-year-old cadaver. These muscle fibers, pictured below, extend laterally from the insertion of the splenius capitis. The fibers run perpendicularly from the muscle body into the fascial layer, and are measured at 6.1 cm in length. Although the orientation of the fibers is in a different plane than the primary muscle body, there appears to be no change in innervation or function associated with the aberrant group. No nerves or vascularity was found to travel with the separate muscle fibers.

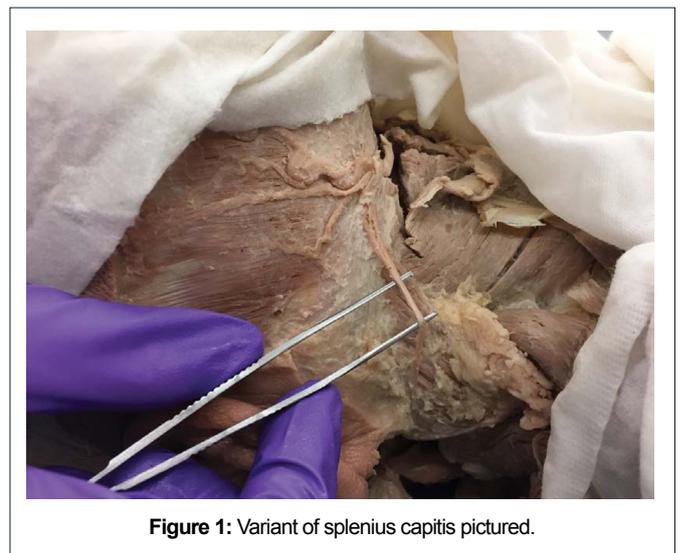


Figure 1: Variant of splenius capitis pictured.

Discussion:

While muscle variants are plentiful in the cervical region, no similar variants were found with perpendicular fibers of the splenius capitis. Due to the small size of the fibers discovered and its insertion into a fascial layer, there seems to be minimal change in function in the muscle. However, larger variations with more definitive insertions could be the cause of neck strain or even headaches from contraction in a separate anatomical plane. [2] The musculature of the superficial

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Received: Oct 11, 2021; Accepted: Oct 12, 2021; Published: Oct 18, 2021

back is one that should be focused on in surgery due to its function to extend, rotate and flex the head. One study reports a posterior approach to the brachial plexus during surgery, with the splenius capitis being the supero-medial border of the approach method. [3] This method, along with other surgical methods involving the musculature of the back, must take particular care to determine variants that could alter or impede surgical technique. With respect to this case study, variants of similar appearance must be taken note of during procedures so as not to impede the surgeon. Management of patients should include the consideration that aberrant structures are causing pathology, and an approach to care should reflect the results of finding anatomical variants.

Acknowledgements:

The authors would like to thank the University of North Texas Health Science Center for its resources and express tremendous gratitude for the donors involved in the Willed Body Program for their invaluable gifts.

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Citation: Reeves KC, Wright TR, Fisher CL (2021) Variation of the Splenius Capitis Muscle. *J Anat Physiol Stud* 5(1): 001-002.

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