Sternal Muscle: A Case Report

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Introduction

The sternal muscle, which is not present in the American population and is more present in the northern China population, presents as an anatomical variation superficially situated at the pectoralis major muscle, usually unilateral, without epidemiological variation in relation to sexual dimorphism.1 Its low occurrence, estimated to be ~ 8%, and the possibility of confounding it with tumors in the sternal region, justifies its descriptions upon identification. The objective of the present article is to report a case of sternal muscle in a human cadaver.

Case Report

This is an observational dissection study. In the dissection routine at the Anatomy Laboratory of the Morphology Department of the Universidade Federal da Paraíba (Campus I), João Pessoa, state of Paraíba, Brazil, the sternal muscle was found, dissected by routine technique and anatomically characterized.

The most commonly used classification for sternal muscle variations was proposed by Jelev et al2 and is indicated in Fig. 1.

The unilateral and long type is the most frequent one, usually originating from the sternocleiomastoid (ECOM) muscle tendon and inserted into the costal cartilages. Silva3 reported a series of cases in cadavers presenting sternal muscle. In this study, these muscles had origins near the ECOM tendon or even at the manubrium.

In our study, the sternal muscle was dissected through the routine technique and is shown in Fig. 2. Our finding reveals a long, unilateral muscle with a length greater than the width and thickness, with proximal fixation in the sternal fascia of the pectoralis major muscle and the distal insertion in the abdominal portion of the pectoralis major muscle.

Discussion

The ontogenesis of the sternal muscle has revealed a muscle as being a reminiscent of four major structures: from the major spinal muscle; from the rectus abdominis muscle; from the musculoskeletal muscle, or from the fleshy panniculus related to the platysma muscle.4

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distal insertion in the abdominal portion of the pectoral muscle. In the classification proposed by Jelev et al., our finding closely resembles type I2, with proximal fixation in the middle axial line of the sternum, but differs in presenting only one venter. Recently, Dudgeon et al. also proposed a new variant form to the sternal muscle. This finding was a mixed type with three venters. Therefore, we believe that our finding can also be added to this classification. Interestingly, the phylogenetic theories state that the sternal muscle, when found near the sternum, is derived from primates.

The visualization of the sternal muscle has caused surprise during surgeries. During radical mastectomies in the
treatment of breast carcinomas, the pectoral fascia is folded and the pectoralis major is exposed. In the presence of the sternal muscle, it is necessary to observe its muscular fixations to perform the best cutting plane.\(^1\) In studies using mammography, the sternal muscle was identified, whereas at clinic evaluations it was confused with a mammary lesion.\(^8\)

Therefore, documentation of sternal muscle variations can improve the anatomy theoretical database, as well as aid diagnoses, reducing the probability of the unexpected during clinical and/or surgical thorax-related investigations.

**Conflicts of Interests**

The authors have no conflicts of interests to declare.

**References**