

VARIATION IN PECTORALIS MAJOR MUSCLE FOUND DURING DISSECTION- A CASE REPORT**¹Dr. Chhaya Gupta ²Dr. J. Manohar ³Dr. Sandeep M. Lahange**¹MD scholar, Dept. of *Sharira Rachana*, NIA, Jaipur, Rajasthan, India²Assistant Professor, Dept. Of *Sharira Rachana*, NIA, Jaipur, Rajasthan, India³Assistant Professor, Dept. Of *Sharira Rachana*, NIA, Jaipur, Rajasthan, India**ABSTRACT**

The pectoral region covers the anterior thoracic wall and part of the lateral thoracic wall. There are four muscles in the pectoral region: pectoralis major, pectoralis minor, subclavius and serratus anterior. The muscles of the pectoral region attach the upper limb to the axial skeleton. The pectoralis major muscle is positioned immediately deep to the superficial fascia. The pectoralis major muscle comprises two heads 1) Clavicular head 2) Sternocostal head. It originates from the clavicle, manubrium, sternum, costal cartilage, aponeurosis of external oblique muscle of abdomen and inserted on humerus. The present case is a report of an unusual variation of pectoralis major muscle in pectoral region.

Key words: - Clavicular, pectoral, sternocostal.

INTRODUCTION

The pectoral word is originated from the latin word '*pectus*' means chest, which is found on the exterior of anterior thoracic wall and on the region of the lateral thoracic wall¹. Generally, the region covering both the walls is termed as the pectoral region. Pectoral region consists of four muscles, subclavius, pectoralis major, pectoralis minor and serratus anterior which are also referred as the anterior axio-appendicular muscles or thoraco-appendicular or pectoral muscles. These muscles are responsible for moving the pectoral girdle². The pectoralis major is a large and fan-shaped muscle that covers the major part of the thorax. It originates from the anterior surface of the sternal half of the clavical, half the width of the anterior surface of the sternum down to the level of the sixth or seventh costal carti-

lage, the first to the seven costal cartilages, the sternal end of the sixth rib and the aponeurosis of external oblique. Slight cleft separates the clavicular fibres from the sternal fibres. The muscle tends to become a flat tendon, approximately 5 cm across. The tendon is bilaminar. Fibres from the manubrium form the thicker anterior lamina, which are binded superficially by clavicular fibres and strongly by sternal margin fibres and the 2nd to 5th costal cartilages. Clavicular fibres may be further elongated into the deltoid tendon. Sixth and frequently seventh costal cartilages and ribs provide fibres to the posterior lamina, from the front of the sternal and from the obliquus abdominis externus aponeurosis. The costal fibres bind the lamina directly without windings. The sternum fibres and aponeurosis fibres curve round the lower border of the remaining muscle,

the lower turning successively behind those cranial to them so that this part of the muscle is winded on itself and the abdominal fibre rise highest upon the tendon. The posterior lamina of the tendon reaches higher on the humerus than the anterior, giving off an expansion which covers the intertubercular sulcus and blends with the capsular ligament of the shoulder joint. From the deepest fibre of this lamina, at its insertion, an expansion is given off which lines the intertubercular sulcus, while from the lower border of the tendon a third expansion passes downwards to the fascia of the upper arm³. Nerve supply- It is supplied by lateral and medial pectoral nerves; clavicular head (C₅, C₆), sternocostal head (C₇, C₈, T₁)⁴. Main action of pectoralis major muscle- Adducts and medially rotates humerus; draws scapula anteriorly and interiorly acting alone, clavicular head flexes humerus and sterno-costal head extends it from the flexed position⁵.

Case report: During routine dissection, unusual variation of pectoralis major muscle has been found on right side of an old female cadaver. Usually the abdominal slip from the aponeurosis of the external oblique is sometimes absent but the number of costal attachments and the extent to which the clavicular and costal parts varies. A superficial vertical slip may ascend from the lower costal cartilages and rectus sheath to blend with sternocleidomastoid or to attach to the upper sternum or costal cartilages. This is sternalis or rectus sternalis.



The muscle may be partially or completely absent.

The unique feature of present case study

was appearance of this muscle with vertical fibres.

Materials and Methodology-

Materials-

For literary study:-

1. Available literature regarding pectoralis major muscle from Modern texts.
2. Research Journals or papers presented on the relevant topics.
3. Confirmed World Wide Web sources.

For cadaveric dissection Study:-

1. Cadaver: female
2. Dissection kit

Methodology: The anatomical variation in pectoralis major was identified during routine cadaveric dissection of a female cadaver of 55 years old embalmed, in the department of *Sharira Rachana* of National institute of Ayurveda, Jaipur (Rajasthan). On careful dissection, the muscle attachments were identified and recorded by using digital camera and photographs were taken.

*Literature Study: All the information regarding pectoralis major muscle was collected from modern texts, research journals or papers presented on the relevant topics and authentic internet sources.

DISCUSSION

The presence of rectus sternalis is rare last normal anatomical variant in the chest wall in cadaver of Indian origin. It has racial and regional variations based on the study which has been conducted in 2008, it revealed the incidence to be 4-7% in white population, 11% in Asian population, 8.4% in black population, 1% in Taiwanese but in Indian population is 5-8% equal in both genders⁶. In present study there was a unilateral rectus sternalis. In Grays anatomy this muscle is described as superficial vertical slip which ascend from lower costal cartilages and rectus sheath to blend with sternocleidomastoid muscle or to attach to the upper sternum or costal cartilages. It

may represent the remains of 'panniculus carnosus', which is superficial to pectoral fascia and has a nerve supply from anterior cutaneous branches of intercostals nerve⁷. It is a rare muscle encountered in the sub-cutaneous plane so it is important for a surgeon and an anatomist to identify it for an appropriate dissection plane.

CONCLUSION

A part from anatomical variations or additional slip of muscle fibres which is found in this case study, it is having been importance for surgeons while doing reconstructive surgery of breast. The location of rectus sternalis and direction of fibres suggest that this may help in elevating lower chest wall.

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