



Biceps Sartorius muscle and its clinical relevance: A case report

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Abstract

Sartorius is the most superficial extensor muscle of thigh and the longest muscle in the body. It crosses hip as well as knee joint and accordingly act as a flexor on both the joints. During routine dissection class of undergraduate students, unilateral variation in the origin of Sartorius muscle was observed. There were two heads of origin, the major part was originating normally from anterior superior iliac spine (ASIS) and its adjacent area whereas, the accessory tendinous origin took place from inguinal ligament and get attached to main muscle belly, about 5.4 cm below the inguinal ligament. Sartorius muscle flaps are very important to cover complicated wounds in reconstruction surgeries as well as during wound sterilization treatment.

Keywords: Sartorius, inguinal ligament, anterior superior iliac spine, sterilization

1. Introduction

Muscular and tendinous variations although rare are being frequently cited in anatomical literature due to their clinical and surgical relevance. The literature suggesting variable anatomy of Sartorius dates back to late 19th century quoting the name 'Biceps Sartorius' [1, 2, 3]. Sartorius causes flexion, abduction and lateral rotation at hip joint and flexion at the knee joint. Sartorius muscle (Sm) is also known as 'Tailor's muscle' due to the movements produced by it in sitting posture of tailor while working. It is a narrow strap muscle arising as tendinous slip from the ASIS and adjacent area of notch, below it. It crosses the thigh obliquely then muscle fibres terminate as a broad aponeurosis and attached to the proximal part of medial surface of tibia. A slip from its upper margin blends with the capsule of the knee joint another from its lower margin merges with the superficial layer of deep fascia of the leg. It assists flexing the leg at knee, and the thigh on the pelvis. It also helps to abduct the thigh and to rotate it laterally.

Few variations related to Sartorius muscle are given in standard textbooks stating Sartorius might be absent in some cases or it may possess an extra head. The extra head is attached to the pectineal line or to the femoral sheath [4]. Accessory head of Sartorius may also take origin from iliopectineal line, pubic bone or inguinal ligament [5]. An accessory muscle fasciculus has been described running from Sartorius muscle to Vastus medialis muscle [6].

Other variants of Sm showing partially or completely splitting of distal portion into two parts were observed. The additional part either inserted into fascia lata, patellar ligament or to the capsule of knee joint [6, 11]. Williams & Warwick reported complete absence of Sm [7].

2. Case Report

During routine dissection class of first year undergraduate

medical students, we found an additional head of Sm on right thigh of about 65 year old female cadaver. The main head of muscle had its normal origin, course and insertion whereas the extra head was tendinous in origin and was arose from IL, just lateral to mid inguinal point. It was about 5.4 cm long and then blend with the main head of Sm, at upper one-fifth part of Sm [Fig/Table 1]. The two divisions of femoral nerve lie beneath the extra head of Sm and femoral artery was present medial to it. Lateral femoral cutaneous nerve was lie just lateral to Sm. The anterior division of femoral nerve was supplied to both head and belly of Sm.

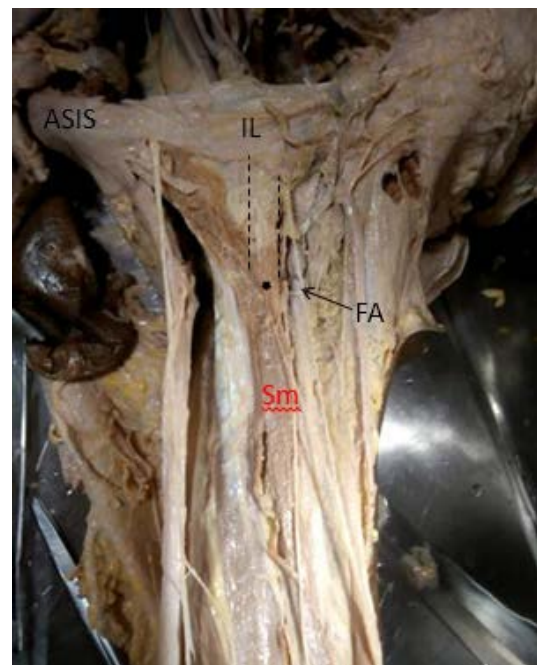


Fig 1: Showing Sartorius muscle (Sm) originated from Anterior

Superior Iliac Spine (ASIS), Additional head of Sm (*) arises from Inguinal Ligament (IL) and medially Femoral Artery (FA).

3. Discussion

Medial border of Sm forms lateral boundary of femoral triangle, it also form roof of the adductor canal. As a result the relation of Sm is very important to perform hip arthroplasty, inguino-femoral lymphadenectomy and other surgeries^[8].

Macalister observed muscular anomalies and their variations of certain muscles in 1871^[6]. Patil J. *et al.* reported a case of accessory Sartorius muscle that was similar to our study. They reported an accessory muscular slip of 6.5 cm long, lie medial to main Sm. It took origin from inguinal ligament and merged with main muscle at the junction of upper 1/3rd and lower 2/3rd of the thigh. In our case, the tendinous portion was much more than muscle fibres and it arose from the middle part of IL^[9].

Though the variations of Sm were barely reported, but the clinical benefits of Sm have many literatures. It has rich vascular supply and also segmental in nature, so muscular flaps are widely used in reconstructive and plastic surgeries^[12, 13].

Knowledge of anomalous patterns of Sartorius muscle is very important to utilize it as a graft pedicle. These graft used to cover necrotic area after surgical debridement and also shield the wall of vessels in inguinal lymphadenectomy^[14].

The presence of additional head can be related evolutionary to the vestigial remnant of fasciculus seen in some animals such as horses and hippopotamus. Due to change in posture of humans this head further had no use and further lead to disuse atrophy during the course of evolution^[1, 2, 3, 10].

4. Conclusion

Our study concluded to improve skills of selective utilization of sartorius muscle flaps during management of surgical debridement and reconstructive surgeries.

5. References

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