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Study of “*Sartorius Muscle*” in Human Anatomy and its importance -A Literature Review.”

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Abstract:

The sartorius (दीर्घायामा) is one of the muscles in the front of the thigh. It starts at the foremost part of the hipbone, known anatomically as the anterior superior iliac spine. From here, the muscle crosses the front of the thigh and connects with the tibia. The sartorius (दीर्घायामा) muscle is a thin, long, superficial muscle in the anterior compartment of the thigh. It runs down the length of the thigh, runs over 2 joints—hip and knee joints and is the longest muscle in the human body.

Key words: *Sartorius* (दीर्घायामा) muscle, Anatomy.

Introduction:

Its name is derived from the Latin word "solea", meaning "sandal". The sartorius (दीर्घायामा) is the longest muscle in the body. It is sometimes called the tailor's muscle.

Definition: In upright posture, the Sartorius (दीर्घायामा) is responsible for pumping venous blood back into the heart from the periphery, and is often called the skeletal-muscle pump, peripheral heart or the sural (tricipital) pump. Sartorius (दीर्घायामा) muscles have a higher proportion of slow muscle fibers than many other muscles.¹

The Sartorius (दीर्घायामा) muscle is the second heart of the human body. Our calf veins function as a reservoir for blood that our body does not need to circulate at the moment. The veins that function as reservoirs are known as muscle venous sinuses.

In humans and some other mammals, the **Sartorius** (दीर्घायामा) is a powerful muscle in the back part of the lower leg (the calf). It runs from just below the knee to the heel, and is involved in standing and walking. It is closely connected to the gastrocnemius muscle and some anatomists consider them to be a single muscle, the triceps surae. Its name is derived from the *solefish* whose shape it resembles. The Sartorius (दीर्घायामा) is located in the superficial posterior compartment of the leg.²

Objectives:

To study the anatomy of Sartorius (दीर्घायामा) muscle and its applied anatomy (Clinical Significance).

Methods:

Manual searching and collection.

Sartorius (दीर्घायामा) muscle:

Structure & Function:

Origin & Insertion:

The sartorius muscle originates from the anterior superior iliac spine,^[4] and part of the notch between the anterior superior iliac spine and anterior inferior iliac spine.³

The insertion of the sartorius muscle is the superior medial aspect of the tibial shaft, near the tibial tubercle. Two other tendons join it at its insertion: the gracilis and semitendinosus, to create the conjoined tendons known as the pes anserinus. At the knee, it acts to flex as well as internally rotate.⁴

Structure:

The Sartorius is located in the superficial posterior compartment of the leg.

The Sartorius (दीर्घायामा) exhibits significant morphological differences across species. It is unipennate in many species. In some animals, such as the rabbit, it is fused for much of its length with the gastrocnemius muscle.

In humans, the Sartorius (दीर्घायामा) is a complex, multi-pennate muscle, usually having a separate (posterior) aponeurosis from the gastrocnemius muscle. A majority of Sartorius (दीर्घायामा) muscle fibers originate from each side of the anterior aponeurosis, attached to the tibia and fibula.

Relation:

The sartorius muscle crosses both the hip and knee joints, producing movements on both of them. At the hip joint it is capable of flexion, external rotation and abduction of the leg. The contraction of sartorius can also cause flexion of the knee joint and inward, or medial, rotation of the tibia against the femur.

Function:⁵

The function of the sartorius is unique in that it can serve as both a hip and knee flexor. The primary muscles responsible for internal rotation at the hip are the gluteus medius and gluteus minimus, but the tensor fascia lata also assists. Antagonists and external rotators of the hip include the piriformis, the superior and inferior gemelli, the obturator internus and obturator externus, and the quadratus femoris.

Blood supply:

The blood supply to the sartorius is mainly from the muscular branches of the femoral artery. Over half of the blood supply comes from these muscular branches of the femoral artery, but collateral flow does come from elsewhere. A study researching blood flow to the sartorius demonstrated collateral blood flow arising from the superficial circumflex iliac artery, lateral circumflex femoral artery, superficial femoral artery, descending genicular artery, and superior medial genicular artery.⁶

Nerve supply:

The sartorius is innervated by the femoral nerve, which receives its nerve supply from L2, L3, and L4 nerve roots. The femoral nerve innervates both the hip flexor and quadriceps muscle groups. The femoral nerve (motor divisions and branches) innervates the following muscles.⁷

Discussion:**Clinical significance:**⁸

ASIS avulsion injuries through the physis. These injuries typically occur secondary to indirect trauma via a sudden, forceful contraction of the sartorius.

overuse injuries like tennis elbow, chronic overuse of the sartorius, along with the gracilis and semitendinosus, can create inflammation at the insertion point of the conjoined tendon of these three muscles. This inflammation can irritate the local tissue surrounding the tendon, including the bursa, a condition known as pes anserine bursitis.

Applied anatomy:⁹

Due to the thick fascia covering the muscles of the leg, they are prone to compartment syndrome. This pathology relates to the inflammation of tissue affecting blood flow and compressing nerves. If left untreated compartment syndrome can lead to atrophy of muscles, blood clots, and neuropathy.

The Pes anserinus refers to the conjoined tendons of the gracilis, semitendinosus and the sartorius.

Conclusions:

1. The sartorius (दीर्घायामा) muscle can move the hip joint and the knee joint.
2. THE Sartorius muscle injuries may cause symptoms in the upper part of your leg that include: Pain, Tenderness, Swelling, Muscle weakness & Stiffness.
3. An injury to the sartorius muscle usually occurs in conjunction with an injury to another thigh muscle, like the psoas or the quadriceps.

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