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FEMORAL MUSCLE HERNIA ORIGINATING AT THE SITE OF REMOVAL OF A FASCIA LATA TRANSPLANT AND REPAIRED WITH SKIN

By

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Muscle hernia in the sense of herniation of muscle tissue through an opening in the fascial sheath is fairly rare. It usually occurs in the lower extremity, mostly in the region of the leg. The size of the hernia varies. Some are large, but most are c. 3 cm. in diameter or smaller Trauma may cause the laceration of the fascial sheath and the protrusion of the muscle through the opening, but it is often impossible to establish a causal relationship with trauma (1).

The hernia most commonly encountered in the leg is small, multiple, often bilateral. It probably originates at congenitally weak spots in the sheath, e.g. at points where the small arteries, the veins or the cutaneous nerves push through it. Recurrent muscular strain seems to be one cause in the genesis of hernia, for the majority of the cases occur in athletes and soldiers (9).

Muscle hernia requires treatment only if the symptoms cause the patient obvious inconvenience (1, 2). Therapy consists of closing the opening in the fascial sheath by suturing or fascia transplant (9). Excision of the protruding part of the muscle followed by suturing of the muscle and closing the opening in the sheath has also been used as the treatment (2).

Skin has been found a suitable reconstruction material in animal experiments (3, 6, 10) and in several clinical cases. This method has been applied, for instance, in the treatment of inguinal and umbilical hernias (8).

Skin has been used at the Clinic as interposition material in articular operations (4, 5) and also in various reparative operations, e.g. in lacerations of the Achilles tendon and in ligament lacerations of the knee.

In the animal experiments the skin graft in tendon repairs has had an average spontaneous stretch value of c. 28 per cent and in eight weeks it assumes practically the strength of a normal tendon (3).

The case reviewed here involved a major postoperative femoral muscle hernia which was repaired by skin graft.

A labourer of 47 was admitted for treatment at the Clinic on October 7, 1958. He had been wounded in the face in 1939 by a rifle bullet. In addition to other traumas, his right-hand facial nerve was paralysed. Fascioplasty was done c. six months later on the face because of the facial paralysis. The material for this plastic operation was taken from the fascia lata of the right thigh. The site of removal of the fascia healed well after surgery but four years later, on lifting a heavy stone, the patient developed muscle hernia there. The hernia gradually grew and became painful on movement and at work. He was consequently almost completely incapacitated for heavy work. Especially in the winter, it was difficult to walk and work in the snow.

The patient was small in stature, of normal physique. There was complete right-hand facial paralysis and the region of the right ear was deformed. Nothing noteworthy was observed in the circulatory, respiratory, and alimentary organs.

The patient's gait was fairly normal. In the right thigh there was laterally an operation scar 20 cm. in length. The site of the scar lay on an extensive bulge which appeared more clearly in the standing position when the femoral muscles were tautened (Figs. 1–3).

Operation for hernial repair was performed on October 9, 1958. A defect, length 30 cm. and breadth 10–15 cm. was found in the fascia lata and the healthy-looking m. vastus lateralis bulged through it. The margins of this gap were drawn together with difficulty by chromium catgut and steel wire sutures. The suture line was very tight at places and, since it was not expected to hold, a whole-thickness skin graft measuring c. 5 × 25 cm. was taken from the edge of the wound and used as reinforcement. The skin graft, epidermis removed, was stretched tight and fastened by chromium catgut sutures over the suture line with the subcutaneous part against the fascia (Fig. 4). The skin wound was closed by silk sutures.

Three weeks after the operation the patient was permitted to move around on crutches. The skin sutures were removed and the patient was discharged. Partial loading of the operated extremity was started 6 weeks postoperatively, and after 7 weeks the patient was allowed to move about freely.

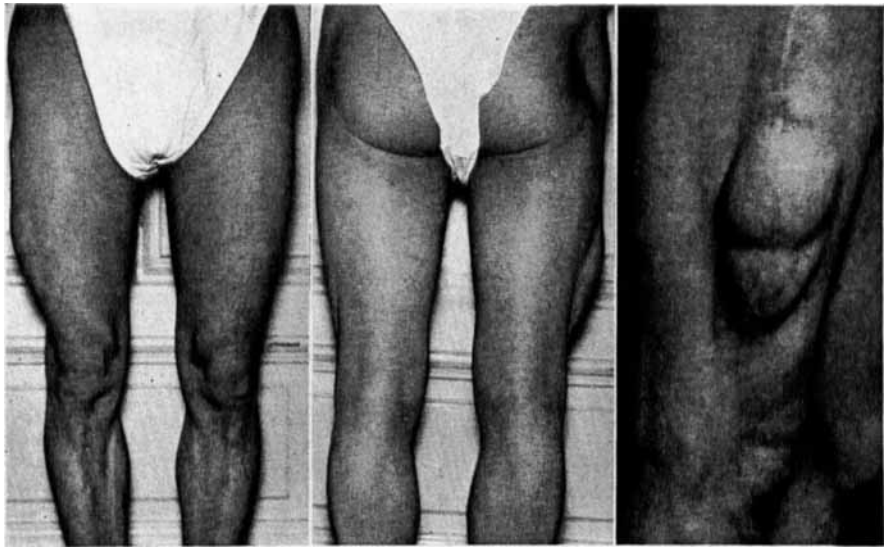

Fig. 1. *Fig. 2.* *Fig. 3.*

Figs. 1.–3.
Muscle hernia pre-operatively.

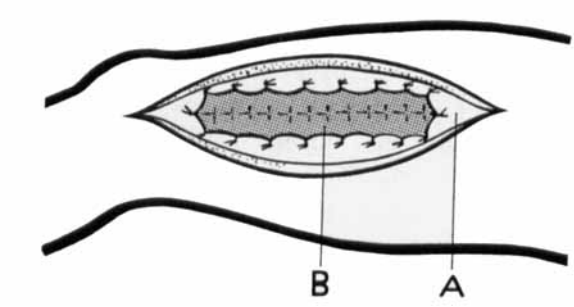

Fig. 4.
A. Fascia lata, the defect sutured edge-to-edge.
B. The skin graft fastened across the suture line of the fascia lata.

At the follow-up 8 weeks after surgery the wound was found to have healed perfectly, the plastic repair had held well (Figs. 5–7). The subjective symptoms had disappeared, the only complaint being that the patient still had an occasional slight sensation of tightness in the distal part of the femur. Some 7 months postoperatively, asked by letter about his condition, the patient replied that the plastic reconstruction was secure.

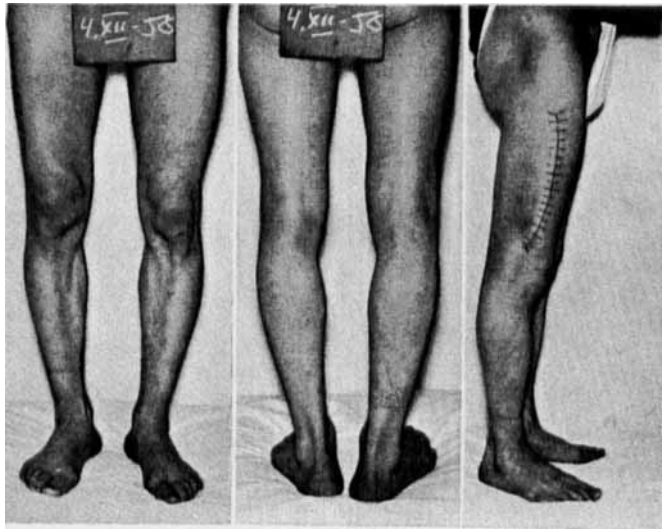

Fig. 5. *Fig. 6.* *Fig. 7.*

Figs. 5.–7.
Status 8 weeks postoperatively.

The sudden heavy strain that the lifting involved had obviously caused a rupture of the place in the fascia lata weakened in an earlier operation and resulted in the muscle hernia.

According to *Lexer* and *Baus* (7), a muscle hernia diminishes or disappears completely when the muscle is tautened provided that it is intact. If the muscle is damaged, stretching it causes enlargement of the hernia. It is possible that the present case involved a hernia of the latter type although no fault in the muscle was established on operation.

The hernial repair was easy to perform by skin graft despite the wide fascial defect. The plastic reconstruction was sufficiently strong after 8 weeks to permit full weight bearing. Although the observation time was short, the good result suggests that the method can probably be employed again in the future.

SUMMARY

Fascia lata has not been used as reconstruction material in the last few years at the Clinic for Orthopaedics and Traumatology, University of Helsinki. It has been replaced by full-thickness skin. The removal of a fascia lata graft may result in complications. The author reports a case in which a large muscle hernia had originated at the site of

removal of a fascia lata graft. The extensive defect in the fascia lata was closed by a full-thickness skin graft, epidermis removed, taken from the edge of the wound. Partial loading of the operated limb was started after 6 weeks and the patient was permitted to return to work after 8 weeks. Follow-up examination showed the plastic reconstruction to be secure.

RESUME

Le fascia lata n'a pas été utilisé comme matériel de reconstruction durant les derniers cinq ans par la Clinique d'Orthopédie et de Traumatologie de l'Université d'Helsinki. Il a été remplacé par de la peau dans toute son épaisseur. Il peut résulter des complications de l'enlèvement d'une greffe de fascia lata. L'auteur rapporte un cas dans lequel une large hernie du muscle s'est formée du côté où la greffe de fascia lata a été enlevée. La lésion extensive du fascia lata a été fermée par une greffe de peau dans toute son épaisseur, l'épiderme transplanté ayant été prélevé en bordure de la blessure. Au bout de six semaines, on permit une charge partielle du membre opéré et au bout de 8 semaines le malade put reprendre son travail. Des examens ultérieurs ont montré que la reconstruction était assurée.

ZUSAMMENFASSUNG

Fascia lata wurde in den letzten Jahren an der orthopädischen und traumatologischen Klinik der Universität in Helsinki als Wiederherstellungsmaterial nicht mehr benutzt. Sie wurde durch Vollhaut erstattet. Die Herausnahme eines Fascia lata-Stückes kann von Komplikationen gefolgt sein. Der Verfasser berichtet über einen Fall, in dem eine grosse Muskelhernie an der Entnahmestelle der Fascia lata entstanden war. Der ausgedehnte Defekt in der Fascia lata wurde mittels eines vom Wundrand entnommenen Vollhauttransplantates, bei dem die Epidermis entfernt worden war, geschlossen. Teilweise Belastung des operierten Gliedes wurde nach 6 Wochen begonnen und der Patient durfte nach 8 Wochen wieder arbeiten. Die Nachuntersuchung zeigte, dass die plastische Wiederherstellung gehalten hatte.

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