

RADICAL ILIOINGUINAL LYMPHADENECTOMY—A NEW TECHNIQUE OF FASCIAL FLAP COVER FOR FEMORAL VESSELS

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Introduction

Radical ilioinguinal groin dissection is indicated in a variety of genito urinary tumours such as squamous cell carcinoma of the penis and distal urethra, melanomas of urethra, scrotum, and lower extremities and involvement by infiltration or metastasis of the inguinal region by testicular malignancies. Clinically negative lymph nodes may be microscopically positive in 50% of patients (Pack et al., 1963) with epidermoid carcinomas indicating a need for routine ilioinguinal lymphadenectomy in these cases.

Though enblock removal of all the lymph nodes and lymphatics draining the region of malignancy is founded on sound surgical principles as utilized in other areas such as breast and head neck, radical ilioinguinal node dissection fell into disrepute due to high incidence of complications mostly necrosis of skin flaps, infection, sloughing, lymphorrhoea and even bursting of femoral vessels. In 220 cases with groin dissection for malignant melanoma Fortner (1964) reported a variety of complications in two thirds including varying degree of necrosis of the skin flaps (64.5%) and in 40 patients the complications were classified as abdominal in 12, pulmonary in 11, cardiovas-

cular in 20 and miscellaneous in 7. It is relevant here to note that in the cardiovascular group, massive secondary haemorrhage occurred in 2 patients. In a similar large series, of 83 cases (63 unilateral and 18 bilateral) Byron (1962) reported more than 40% overall incidence of complications. Most important immediate wound complication was slough of the skin with separation of the edges and exposure of the underlying structure and they noted 34 sloughs in 83 dissections. Ten of 35 (29%) of the superficial inguinal dissections were complicated by permanent dependent oedema.

Surgical Anatomy

Fascia lata divides the inguinal lymph nodes into superficial and deep nodes. The superficial glands are situated within the Camper's fascia and send their efferents to both deep inguinal and iliac lymph nodes. The deep inguinal nodes are situated in a vertical chain along the femoral vessels both outside as well as inside the femoral sheath. Highest and most constant the deep inguinal lymph node of cloquet is located on the medial aspect of the femoral vein within the femoral canal. The iliac nodes lying along the medial aspect of the iliac vein form a continuous chain with femoral and aortic nodes.

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Byron (1962) stated that superficial inguinal nodes are situated in an area bounded superiorly by a line from the umbilicus to the anterior superior iliac spine, inferiorly by the intersection of the sartorius and adductor longus muscles, laterally by a vertical line from the anterior superior iliac spine and medially by a vertical line from the pubic tubercles. Skin of the inguinal area is supplied by (a) superficial external pudendal, (b) superior circumflex iliac and (c) superficial epigastric arteries. Branches of these vessels run just within the upper fatty layer of the fascia of Camper, parallel to the inguinal ligament making them vulnerable to vertical incisions. Though usual vertical incisions (Fig. I) with or without division of the inguinal ligament provides good exposure for removal of superficial and deep inguinal nodes, they are attended with greater risk of flap necrosis due to reasons stated above.

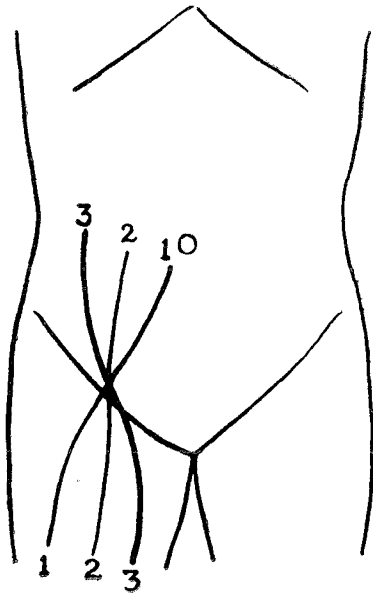


Fig. 1. Usual vertical incisions utilised for radical groin dissection.

Technique and Modifications

Initially we had been following the standard technique of radical ilioinguinal lymph-

denectomy (Hand 1970) with removal of superficial and deep inguinal nodes, and all the iliac nodes up to the bifurcation of the common iliac. The fascia of the pectineus and adductor longus muscles situated on the floor and medial borders of the femoral triangle is excised, leaving the femoral triangle clean. At this stage, to provide protection to the femoral vessels, usual practice as described by Baronofsky (1948) is to detach the sartorius from the anterior superior iliac spine, move it medially to bring it anterior to the femoral neurovascular trunk and stitch the upper cut end to the medial part of the inguinal ligament. In our opinion, the belly of the sartorium, sometimes does not cover the neurovascular trunk completely and transplantation of the sartorius adds to the magnitude of the already time consuming radical ilioinguinal lymph node dissection.

We therefore resorted to this new technique of raising a flap of fascial sheath from the rectus femoris and iliacus as shown in fig. II and III. This flap is then turned in front of the femoral vessels and sutured to the adductor longus and pectineus medially and to the inguinal ligament superiorly thus completely enclosing the neurovascular bundle as shown in fig. IV.

Instead of vertical incisions crossing the inguinal ligament we are now using the skin bridge technique with two parallel incisions (Fig. V) as described by Fraley (1972, 1975).

Results and Comments

Incidence of sloughing of the femoral artery with haemorrhage is fortunately not high. Byron (1962) in a series of 83 patients reported only one case of haemorrhage from the femoral artery in the terminal phase of a patient with extensive recurrent tumour and infection. Fascial flap technique as described

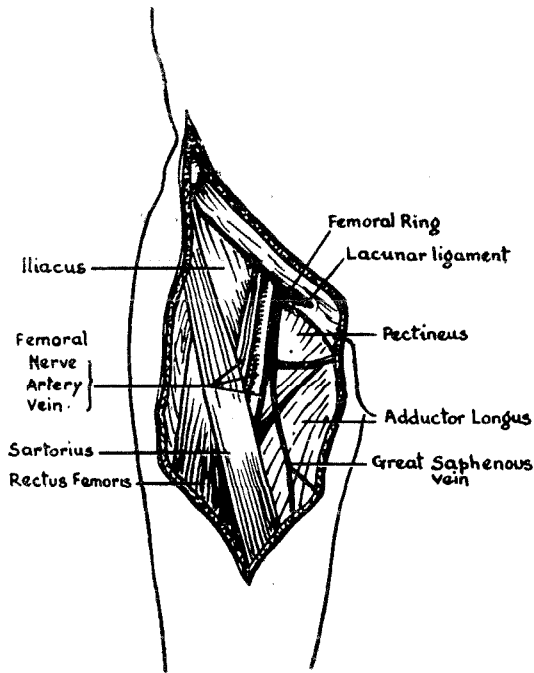


Fig. 2. Normal anatomy of the femoral triangle.

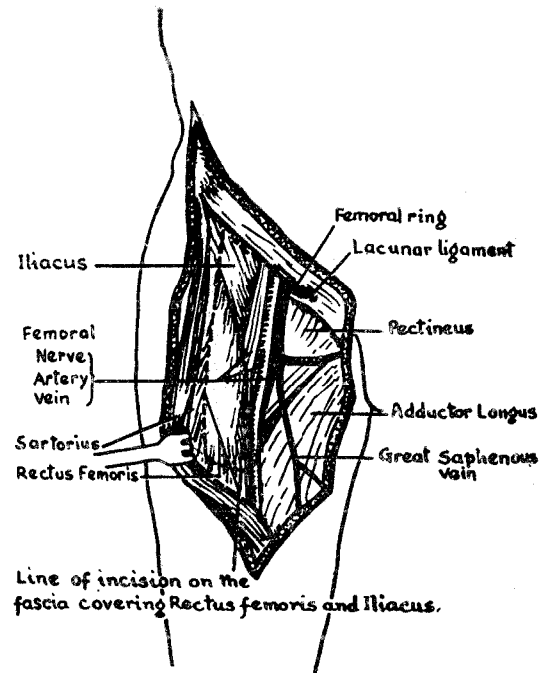


Fig. 3. Shows the line of incision to raise the flap.

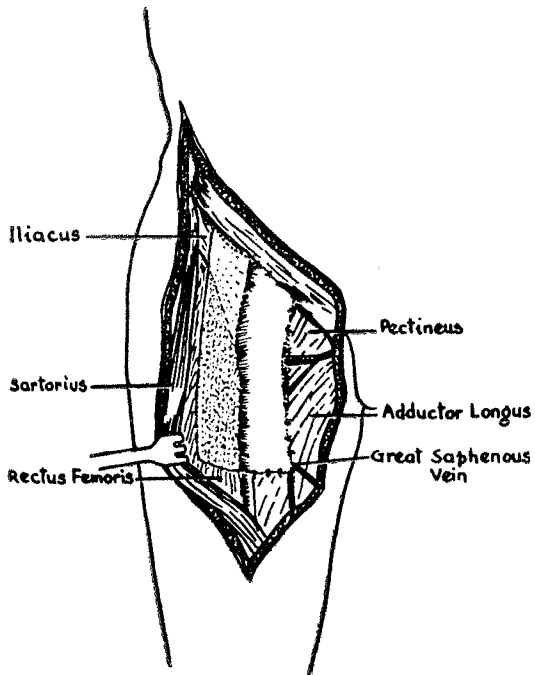


Fig. 4. Flap sutured to the inguinal ligament and the adductor and pectineus muscles.

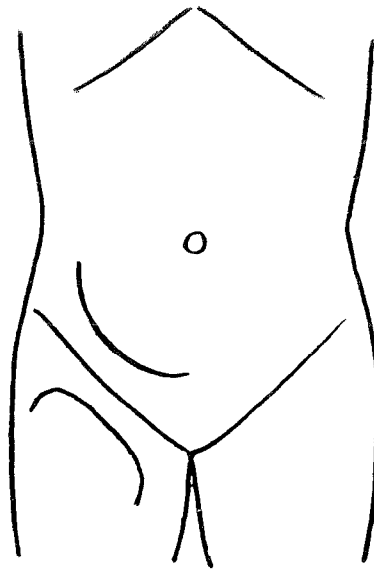


Fig. 5. Transverse incisions with skin bridge as practiced now.

here provides a simple alternative to the sartorius transposition. So far we have done this in 20 cases without any incidence of haemorrhage. In first 15 cases with vertical incision varying degree of skin flap necrosis, sloughing, lymphorrhoea and infection was noted in 7 cases but in the last 5 cases where skin bridge technique has been used there has not been any incidence of flap necrosis, slough or infec-

tion and all incisions have healed with primary intention. This series is small and hence meaningful comparison with larger series will not be valid. The purpose of this communication is to highlight (a) the usefulness of the fascial flap cover as an alternative device for protecting femoral vessels and (b) the effect of skin bridge technique in reducing the incidence of skin flap necrosis and its sequelae.

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