

Contralateral sandwich myocutaneous anterolateral thigh flap for salvage of femoral artery repair in an infected groin wound: an innovative technique

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DESCRIPTION

A 45-year-old man was referred to us for the management of an infected groin wound following femoral artery repair. One week earlier he sustained fall from a rooftop and was diagnosed with pelvic diastasis, right acetabular fracture, femoral artery and vein injury. He underwent femoral artery repair with 10 cm interposition great saphenous vein graft, ligation femoral vein and non-operative management for pelvic diastasis. On examination of the right groin, we noticed a 20×5 cm wound covered with slough and purulent discharge. There was persistent lymphorrhoea from the wound and the patient's serum albumin was 1.4 g/dL. As there is a



Video 1 Right groin wound with pulsating vein graft used to repair the femoral artery and contralateral myocutaneous anterolateral thigh flap in situ in the left thigh

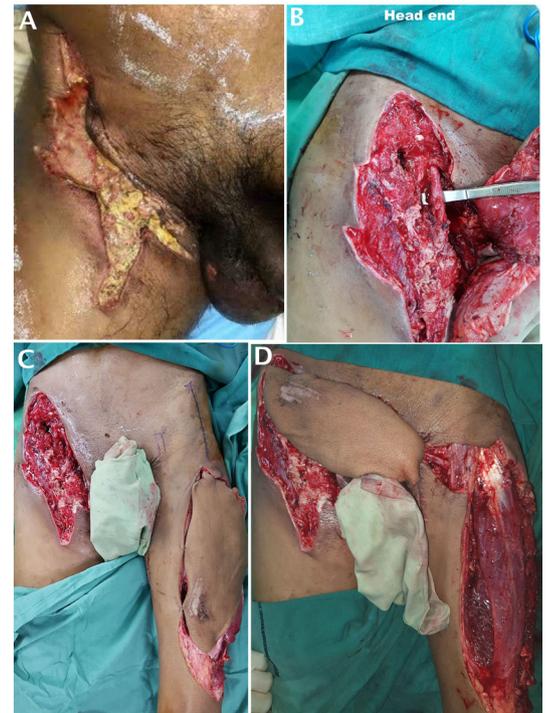


Figure 1 Image showing (A) right groin wound status before debridement, (B) after debridement (exposed vein graft can be seen over the forceps). (C) Left myocutaneous anterolateral thigh flap after harvest. (D) Transposition of the flap across the suprapubic region on to the right groin.

risk of graft failure/blow out of the vascular repair, a plan for an urgent wound exploration and flap cover was made.

Intraoperatively the infected blood clots were washed off, gangrenous thigh muscles were debrided. The reverse saphenous vein graft was found to be patent. The size of the wound after debridement was 25×12 cm with exposed vein graft (7 cm) ([video 1](#)). As the deep femoral vessels were ligated earlier, ipsilateral thigh flaps were unavailable. Hence, contralateral myocutaneous anterolateral thigh (ALT) flap (35×12 cm) was harvested and tunnelled under the rectus femoris (RF) and sartorius across the suprapubic region (in the subcutaneous plane) to reach the right thigh ([figure 1](#)). By this submuscular transposition, an additional 5 cm length of the flap pedicle was gained. Because of dead space, infected and ischaemic thigh muscles surrounding the vein graft the vastus lateralis (VL) muscle component of the flap



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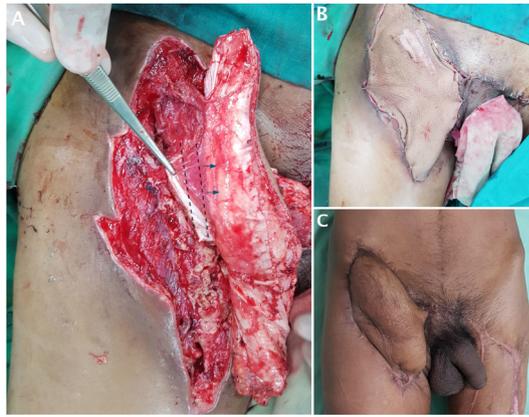


Figure 2 (A) Right groin wound with transposed contralateral myocutaneous anterolateral thigh (ALT) flap. The vastus lateralis (VL) muscle was used to sandwich the vein graft (indicated by dotted lines). Lateral margin of VL muscle was held with the forceps over the anterior surface of the vein graft and the medial margin (invisible) was passed under the vein graft to cover the vein graft circumferentially. The arrows indicate the location of the myocutaneous perforator of the ALT flap. (B) After flap inset. (C) Well settled flap.

was passed around the vein graft and sutured to exclude the vein graft from the infected wound bed. To achieve this the VL muscle had to be debulked before folding on itself around the vein graft. The folded muscle was supported with a couple of 3–0 vicryl sutures.

Patient's perspective

I'm happy to be able to stand on my both legs and walk again.

Learning points

- ▶ When ipsilateral thigh flaps are not available, contralateral myocutaneous anterolateral thigh flap is a good option for coverage of infected groin wounds following vascular repair.
- ▶ The technique of sandwiching the vessel in the vastus lateralis muscle secludes the vessel from an infected wound bed and obliterates the dead space around the vessel.
- ▶ Stretching of the rectus femoris muscle vascular pedicle has to be avoided to prevent its necrosis.

Postoperatively, the RF muscle was gangrenous due to stretch in the perforator supplying it. Retrospectively, we feel that division of the perforators to the RF muscle and discarding the RF muscle would have been an acceptable procedure. This manoeuvre increases the reach of the flap especially in our circumstance, where the wound was large and oriented longitudinally in contrary to the authors who have preserved the RF muscle.^{1,2} There was mild suture line dehiscence at the flap site and it was covered with a skin graft. Lymphorrhoea was managed conservatively and subsided after 3 weeks (figure 2). The patient had mild weakness in the terminal extension of the left knee (due to loss of RF muscle) which improved with physiotherapy.

Conventionally, large groin wounds are covered with sartorius muscle flap, gracilis myocutaneous flap, tensor fascia lata flap, RF flap and rectus abdominis flap.³ In our patient, the femoral artery and its branches were not available. Contralateral rectus abdominis flap was not an ideal option as there was significant dead space and large soft tissue defect. The free flap was not the first option as there was a paucity of the recipient vessels and there was a risk of total flap loss in an already critical patient. The contralateral ALT flap was the best option as it provided abundant soft tissue to obliterate the dead space and skin resurfacing simultaneously. Although the contralateral ALT procedure was reported earlier,^{1,2} sandwiching the artery in the VL muscle has not been reported. We believe that this technique not only protects the vascular repair in an infected groin wound, but also obliterates the dead space and provides soft tissue cover for early wound healing.

Contributors RN is the operating surgeon and involved in patient care and manuscript preparation. MJ is involved in data collection and patient care. ADB is involved in patient care. MS is the professor in charge and approval of the drafted manuscript.

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