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Pedicled anterolateral thigh flap cover for a post-infective raw area of the inguinal region following a femoral artery graft: A case report

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Abstract
Pedicled anterolateral thigh (ALT) flaps are useful flaps for ipsilateral groin defects without the difficulty of microvascular surgery. Pedicled ALT flap has many advantages over other regional flaps like having a large skin and soft tissue availability, the good pedicle length, wide arc of rotation and being reliable. The pedicled anterolateral thigh flap is a versatile option for coverage of soft tissue defects within its reach. Here, we report a case of a groin defect which was a post-infective sequelae following a vascular graft for the femoral artery for peripheral vascular disease which was resurfaced with a pedicled anterolateral thigh flap from the ipsilateral side.

Keywords: groin defect, pedicled, anterolateral thigh flap, no complication, versatile

Introduction
Anterolateral thigh (ALT) flap is a popular workhorse flap for reconstruction of soft tissue of various regions, first described by Song *et al*. [1] The versatility of this flap is due to its long vascular pedicle, large size of skin paddle, ability to harvest different tissues in composite nature, its use as a sensate and flow through flap and minimal to no donor site morbidity. The two team approach has decreased the operative time and thereby decreasing the anaesthetic complications significantly [2]. The pedicled ALT flap is also versatile due to the similar features [3]. The vascular supply to the skin paddle of ALT flap is by septocutaneous or musculocutaneous perforators from the descending branch of lateral circumflex femoral artery. The descending branch anastomoses to the lateral superior genicular artery or the profunda femoris artery perforators thereby allowing the ALT flap to be harvested based on either its proximal or distal circulation. The proximal based circulation along with the long pedicle can be utilised to cover the various soft tissue defects involving the abdomen, groin, perineum, and trochanteric regions and soft tissue defects around the knee as a distally based circulation [3].

Case Report
53 year old male presented to us with a raw area of the right groin since 3 weeks. It started as a small ulcer and has progressed to the present size. He was a known case of peripheral vascular disease for he underwent left above knee amputation 3 years ago. Now, he has right femoral thrombosis for which it was grafted by the vascular surgeon team. But he developed wound infection and dehiscence of the suture line and wound with exposure of the vascular graft. He was a known diabetic for which he was on insulin and oral hypoglycaemic agents. On examination, there was an unhealthy area right groin with suture line dehiscence and a minimal raw area. We planned for debridement of the wound and cover with a pedicled anterolateral thigh flap was marked on the ipsilateral side. (Fig. 1) Under epispinal anaesthesia, thorough debridement was done and the pedicled ALT flap and the perforator from the lateral circumflex femoral artery was identified and marked. (Fig. 2) Flap was elevated and pedicle dissection was done. Flap was inset into the defect with 2-0 nylon sutures and the secondary defect was also closed primarily. (Fig. 3) Dressing was done after achieving haemostasis. Post-operative period

was uneventful with the flap well settled and sutures were removed on the 14th post-operative day. (Fig. 4)

Fig 1: Area to be debrided and the anterolateral thigh flap marked

Fig 2: Defect after debridement

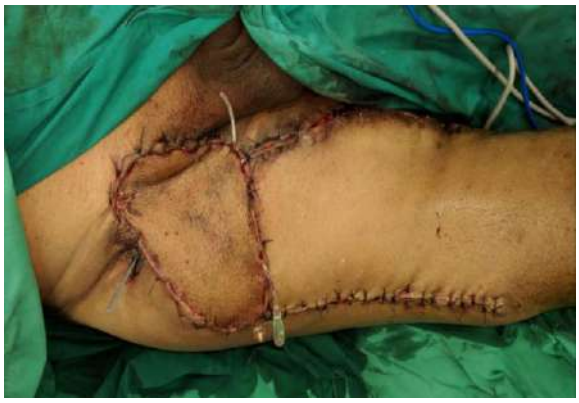

Fig 3: Immediate post-operative picture showing the pedicled ALT flap

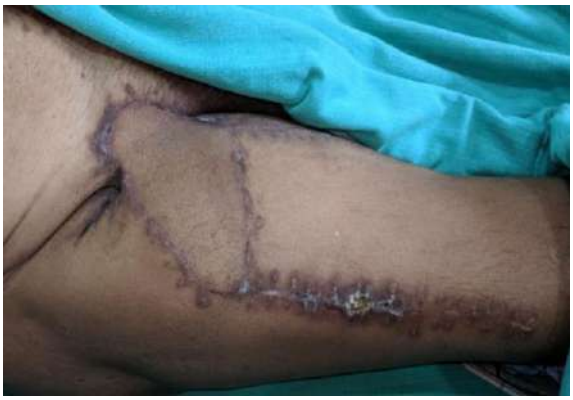

Fig 4: Late post-operative picture showing a well settled flap

Discussion

Pedicled ALT flap is a versatile option for reconstruction of soft tissue defects around the groin region [4]. The rotation arcs of the ALT flap include the umbilicus superiorly, ipsilateral posterior superior iliac spine (PSIS) laterally, and tibial tuberosity below [5]. Pedicled ALT flap can also be used to cover the hand soft tissue defects of the hand. Lannol *et al*. had the largest series of the proximally pedicled ALT for abdominal and pelvic reconstruction where they described the farthest reach of the ALT flap to the lower costal margin, posterior superior iliac spine, anterior margin of anus, and contralateral iliac fossa [6]. Wang *et al*. described pedicled ALT flap as a reliable flap in the management of recurrent trochanteric pressure sores.[7] The pedicled ALT flap was also used to resurface ischial pressure ulcers by Lee JT *et al*. [8] Lee GK *et al*. emphasized the pedicled ALT as the preferred method for reconstruction of total penile defects. Pedicled ALT flap had several advantages over the free radial forearm flap for total penile reconstruction like lack of need of microvascular surgery, better colour match, bulky flap, and less donor site morbidity as mentioned by Lee GK *et al*. [9] Many authors have described the pedicled ALT flap for pelvic defects [10-12] Zelken JA *et al*. utilised pedicled ALT flap along with groin flap to reconstruct the mangled hand injuries [13]. ALT flap is a versatile option to cover the soft tissue defects around the knee joint and upper leg based on the distal circulation, but venous congestion is a problem which can be prevented by supercharging the flap vein to great saphenous vein [14, 15]. Bulkiness of the flap was not a problem in our series. ALT flap was thin and pliable in most of the non-obese patients we encountered. All patients were satisfied with the contour of the flap postoperatively. Bharath *et al* have used the pedicled ALT flap to resurface contralateral groin defects [16]. Ahmed *et al*. described a series of 17 pedicled ALT flaps, tunneling of the flap between the rectus and the fascial septa for ipsilateral inguinal defects [17]. Complex defects of the groin following cancer ablation can be large and difficult to resurface, but was easily achieved by the pedicled ALT flaps [18]. The pedicled anterolateral thigh flap is therefore a versatile, thin, pliable, flap useful for complex reconstructions [19, 20].

Conclusion

The pedicled ALT flap is a reliable, safe and versatile flap used to cover complex defects of the groin region by its wide the arc of rotation and long pedicle length and minimal donor site morbidity. It can be used to cover the defects of the inguinal, iliac and pelvic and abdominal wall defects.

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