Use Of Extended Deep Inferior Epigastric Artery Flap In Management Of Groin Wounds With Exposed Vessels.

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KEY WORDS

Axial Pattern Flap.

ABSTRACT

Consistency, safety, ease and least morbidity of donor site are some of the factors which have made extended inferior epigastric artery based flap popular. For major reconstruction in groin region where important structures are exposed, its use in demonstrated in eight cases.

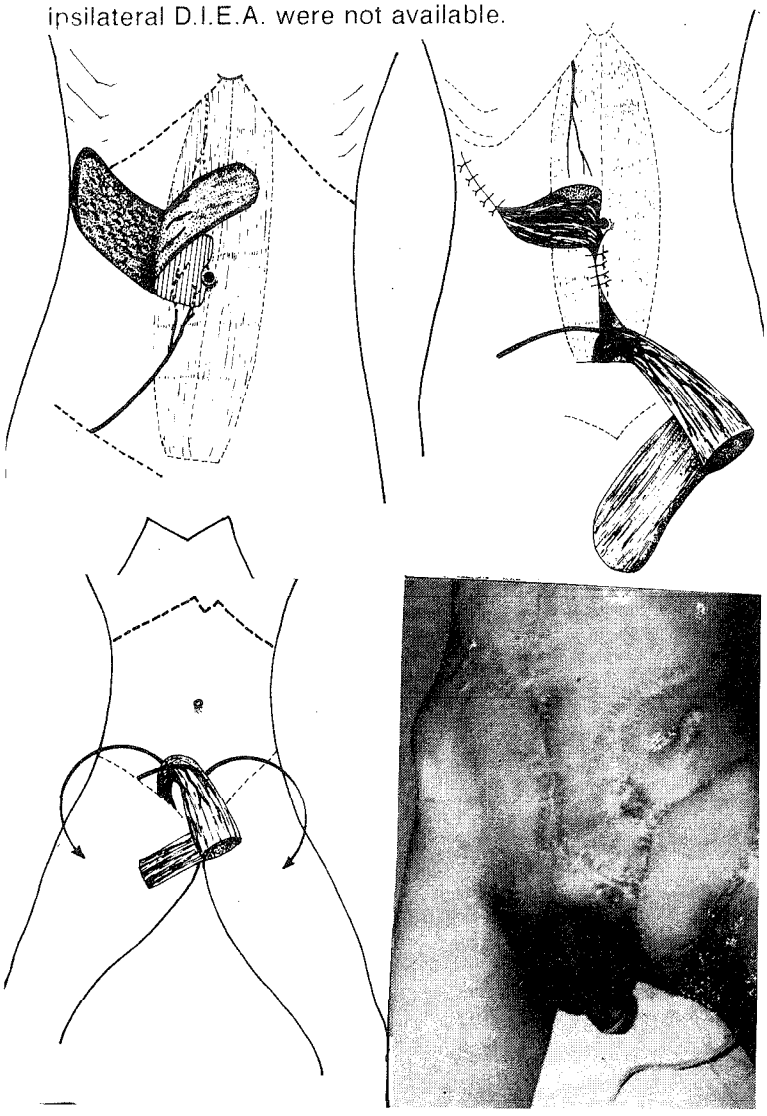
INTRODUCTION :

Management of groin defects with exposed vessels is a challenging problem. Such defects can arise as a result of trauma or resection of tumors or infections. In these situations the vessels might get exposed, injured or be excised necessitating their reconstruction either by an autogenous vein graft or synthetic vascular prothesis. Such situations call for a good soft tissue covver (Brandner, 1987). Ideal management of such defects should include use of flaps of relatively involved tissue. The use of local adjacent muscle may not be possible. It would also be desirable to have a single staged procedure with minimal donor site morbidity. We have utilised the

'extended deep inferior epigastric artery flap' (also called 'Thoracoumbilical flap') for this purpose.

MATERIAL AND METHODS

A two years study and eight cases have proved the versality of this flap. Majority of these cases had some injury to major vessel in the groin which were repaired, either by use of great saphanous vein graft, or PTFE vascular prosthesis which necessiated good quality cover. Two patients had associated injury of the external iliac vessels. In another two patients, the ipislateral D.I.E.A. was ligated during inguinopelvic block dissection. In four patients ipsilateral flaps were used while in other foor patients contralateral flaps were utilised, as ipsilateral D.I.E.A. were not available.



Figures :

1. Schematic Representation of Diea Flap Being Raised From Lat. To Medial Side.
2. Rectus Abd. Muscle Ready with Skin island for Transfer, Closed Ant. Rectus Sheath.
3. Arc of Rotation of Flap.
4. Representative Case.

ANATOMY OF THE FLAP

The extended deep inferior epigastric artery (D.I.E.A.) flap has been described by Taylor et al (1983, 1984). A large paddle of skin is based upon the radiating paraumbilical perforaotrs ("umbilical hub") of D.I.E.A. The perforators pierce the anterior rectus sheath within 3 to 5 cm of umbilicus (Boyd et al 1984). The skin territory extends from umbilicus to anterior axillary line parallel to the axis of ribs. A flap of 10-12 cm. width can safely be taken and the donor site can be closed primarily in most of the cases. The artery enters the muscle from lateral side midway between umbilicus and pubic symphysis. The skin paddle can be raised as an island attached to rectus abdominis muscle with D.I.E.A. on its deep surface.

MECHANICS OF TRANSFER

The flap could be used either on same side or contralateral side. We have used it on same side in four patients and on opposite side in four patients. The flap could be sutured either vertically or horizontally.

RESULTS

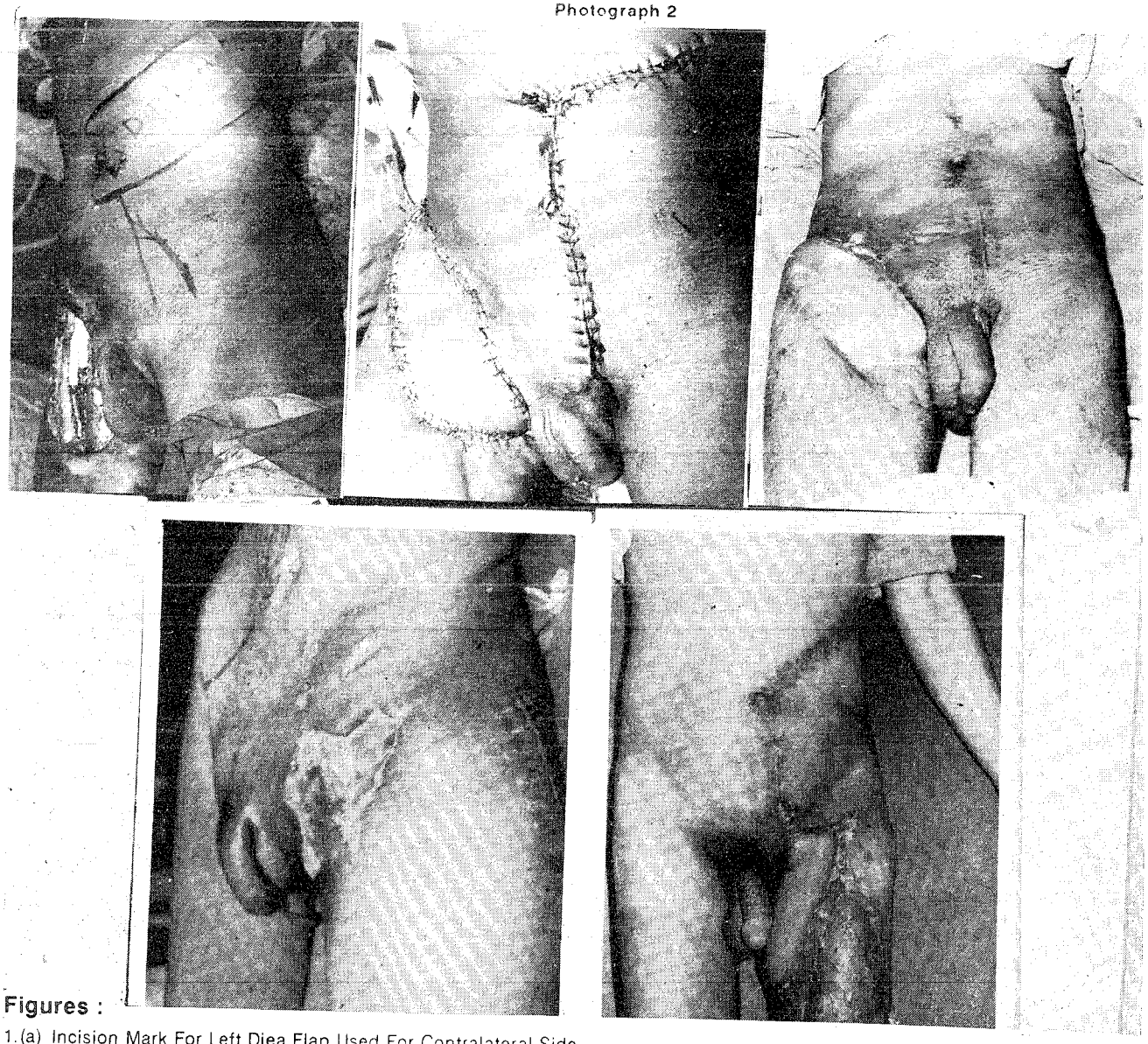
All the flaps survived completely and donor sites healed primarily. In none of the patients there was post operative hernia (2 years follow up).

DISCUSSION

Defects of the soft tissue, however, extensive, that do not have any vital structures exposed can be easily managed by skin graft, provided, there is healthy base (Rama Sastry, 1989).

Many flaps have been described to cover defects of the groin, such as Sartorius (Petrask et al, 1990; Lequit and Henegokva, 1983; Kalil and Sudariski, 1987; Tensor faascia lata muscle (Bostwick et al, 1979; Hill et al, 1979, Nahai 1980) ; Gracilis (Mathes and Nahai, 1982) and Rectus femoris (Mathes and Nahai, 1982; Bhagwat et al, 1978). At times it is important to bring in a flap whose blood supply is well away from the site of injury. The extended deep inferior epigastric artery (D.I.E.A.) flap comes handy in such situations. In extended D.I.E.A. flap, the rectus muscle is divided near the

Photograph 2



Figures :

1. (a) Incision Mark For Left Diea Flap Used For Contralateral Side.
   (b) Post. Operative (Immediate).
   (c) Well Healed Flap.
2. (a) Left Diea Flap for Ipsilateral Side (Pre-Op.)
   (b) Post-Operative Result.

TABLE

Sr. No	Age/Sex	Size of flap	Ipsilateral/or/ contralaternal	Donor area	Results
1.	65 M	15 x 8 cm	C/L	Closed primarily	100 % survival.
2.	50 M	15 x 10 cm	C/L	-do-	-do-
3.	60 M	10 x 6 cm	C/L	-do-	-do-
4.	30 M	20 x 8 cm	I/L	-do-	-do-
5.	12 M	10 x 6 cm	I/L	-do-	-do-
6.	20 M	20 x 10 cm	I/L	-do-	-do-
7.	40 M	15 x 10 cm	C/L	-do-	-do-
8.	28 M	15 x 8 cm	I/L	-do-	-do-

umbilicus, leaving upper half of the muscle 'intact'. The skin paddle has a reliable blood supply, and the donor defect can be closed primarily. Since the muscle is turned down upon itself, there is virtually no weakness below the acruate line. We have had no herniation in any of the our eight patients. The tip of the flap can reach even the distal thigh (Gottilab et al, 1986).

In situations where ipsilateral flap is not available contralateral flap can easily be used.

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