CASE REPORT

GROIN FLAP FOR LOWER ABDOMEN RECONSTRUCTION: A CASE REPORT

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ABSTRACT: Abdominal wall reconstruction is a difficult problem to treat especially in presence of scarred tissue and associated other complications. The abdomen is divided into different zones for the purpose of reconstruction. Lower abdomen consists of zones 1B and 3. There are various options for lower abdomen reconstruction and groin flap is one of them. Although tensor fascia lata flap has been frequently used option we found groin flap to be quite handy for lower abdomen reconstruction. We used groin flap for closure of this defect and found it very useful, easy and dependable.

KEYWORDS: Groin flap; reconstruction; lower abdomen.

INTRODUCTION: Reconstruction of abdominal defects can be challenging as frequently these defects are found in patients suffering from associated malnutrition, infective process or malignancy. Chronic wounds and enterocutaneous fistulae may also lead to severe abdominal scarring. Reconstruction of the abdominal wall consists of two components- a stable skin cover and providing an effective support system to maintain the intra-abdominal pressure.

For the purpose of reconstruction abdomen has been divided into various zones. Zone 1 is the midline defect over the recti on both sides of the midline. This is further divided into zone 1A and zone 1B above and below umbilicus respectively. Zone 2 consists of lateral upper quadrant defects bilaterally. Zone 3 consists of abdominal wall defects in the lower lateral quadrants (Fig: 1).^[1]

The various options of lower abdominal reconstruction are primary closure, component separation or flap coverage- local, regional or free tissue transfer. It may also require a support system like prosthetic mesh, alloderm sheets or autogenous fascia. The various local and regional flaps used are rectus abdominis, tensor fascia lata and rectus femoris. The zone three defects may additionally be covered by external oblique advancement.^[2] Groin flap is also an option for zone 1B and zone 3 reconstruction but its use has been found to be limited in literature. We however found it to be quite versatile in the two cases of lower abdomen reconstruction that we did.

CASE REPORT: A 40 year old multi para lady, diagnosed and treated for trophoblastic disease developed an incisional hernia at the suture line of the previous cesarean section. Following mesh repair of the hernia the patient developed wound dehiscence with infected mesh and a copious purulent discharge. The mesh was removed and wound debrided. As the purulent discharge did not decrease she was investigated further and found to have an enterocutaneous fistula. After managing the fistula conservatively for five months the patient had a badly scarred abdomen and a fistula in the midline with a connected sinus tract opening in the right iliac fossa (Fig 2).

The patient was planned for closure of the enterocutaneous fistula by the surgical team followed by debridement and reconstruction of the abdominal wall defect in the second stage. Following closure of enterocutaneous fistula, a single abdominal wound was created after debridement of sinus as shown in Fig: 3. A groin flap was planned for coverage, as it had an advantage

CASE REPORT

of being from the surrounding skin in addition of having a robust axial pattern arterial supply.^[3] The flap covered the defect completely and there was no post op complication.(Fig 4) Follow up after 2 months also showed a stable wound.(Fig: 5)

DISCUSSION: Long term abdominal dehiscence and fistulae may also lead to complex abdominal wounds that need coverage with a flap. Tensor fascia lata is commonly used regional flap for lower abdominal defect closure. But it may hamper knee joint stability.^[4] We have used groin flap for lower abdomen coverage in a couple of cases and have found it to be quiet handy. Groin flap has axial pattern blood supply from the superficial circumflex iliac artery (SCIA), and thus it can be raised on a narrow base which contains the vascular pedicle. This narrow base in turn helps in increasing its arc of rotation of the flap. The position vascular pedicle can be easily ascertained with a hand held doppler. The reach of the flap can be increased by increasing the length of the flap by using tissue expansion or flap delay. The groin flap also has a low donor site morbidity as it can be closed primarily when upto 10 cm in width.^[4]

Rectus abdominis and rectus femoris flaps are also indicated for lower abdomen flap but have higher donor site morbidity. In the present case, to coincide the margin of the elevated flap with the margin of the defect an extended skin area supplied by the superficial inferior epigastric artery was also taken along the flap. Donor site was closed primarily. There was no post op complication and the wound healed remarkably well.

CONCLUSION: Although large and more complex defects of the lower abdomen require complex reconstructions including free flap transfers, smaller defects can be closed by local flaps. Of these the groin flap has an advantage of robust and durable blood supply and lower donor site morbidity. Thus we feel groin flap should be considered first choice in zone 1B and zone 3 defects of abdomen.

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Fig. 1: Zones of abdomen for reconstruction

CASE REPORT

Fig. 2: Pre-operative wound

Fig. 3: Defect creation after debridement

Fig. 4: Immediate post op after reconstruction with groin flap

Fig. 5: Stable coverage after 6 weeks post op

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