Pre-expanded epigastric flap cover for ventral hernia following fungal necrotizing fascitis of caesarian section wound: An unusual complication

Sanjeev K. Uppal · Ramneesh Garg · Ashish Gupta

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Abstract

Introduction Reconstruction of anterior abdominal wall after necrotizing abdominal wall infections is a challenge.

Material and methods A 35-year-old lady presented with 20 × 18 cm sized defect of the anterior abdominal wall following fungal necrotizing fascitis. The defect was covered by an overlay prolene mesh and the soft tissue deficit was corrected by pre-expanded epigastric flap based on the superior epigastric artery.

Conclusion A concerted multi-specialty effort is needed to correct these defects.

Keywords Necrotizing fascitis abdomen · Caesarian section · Tissue expander · Extended epigastric flap

Introduction

The correction of complex abdominal wall defects is a challenge to both plastic and reconstructive and general surgeons. We present a rare case of fungal necrotizing fascitis of anterior abdominal wall following caesarian section and its staged reconstruction using an extended epigastric flap following tissue expansion.

Case report

A 35-year-old housewife underwent caesarian section and subsequently developed necrotizing fascitis of anterior abdominal wall; fungal in origin. She underwent repeated debridements and split thickness skin grafting over the granulating wound. Over the following years, she developed ventral hernia with a 20 × 18 cm defect extending over the umbilical, left lumbar and left iliac fossa, with herniation of small intestines with the graft adherent to the peritoneum (Fig. 1).

Saline filled tissue expanders were inserted in the epigastric region and the right thigh (Fig. 2). Once the tissue expansion was adequate she was taken up for removal of the tissue expanders and reconstruction. An overlay prolene mesh repair was done. The prefabricated epigastric flap was then transposed and sutured to the margins of the defect (Fig. 3).

The patient was discharged on the 5th postoperative day and advised autologous lipoplasty for the remaining contour deformity over the anterior abdominal wall; which the patient refused citing economic constraints (Fig. 4).

S. K. Uppal · R. Garg · A. Gupta
Department of Plastic Surgery and Burns,
Dayanand Medical College and Hospital,
Ludhiana, Punjab, India

A. Gupta (✉)
E-mail: docashish2001@gmail.com

Fig. 1 Lower abdominal wall defect with skin graft and underlying small intestines in situ

Fig. 2 Tissue expander being inserted

Fig. 3 Prefabricated flap planning

Fig. 4 Transposition flap with split thickness skin grafting of donor site

Discussion

Anterior abdominal wall defects are classified into two groups based on defect components [1]: Type I with intact or stable skin coverage over hernia defect and Type II with unstable or absent skin coverage over hernia defect. The defects are assigned Zones based on primary defect location to assist in the selection and evaluation of their treatment: Zone 1A, upper midline; Zone 1B, lower midline; Zone 2, upper quadrant; Zone 3, lower quadrant.

The current standard of practice is to repair most defects using permanent synthetic mesh material. Surgeons are turning increasingly to the use of xenogenic and allogenic materials for the repair of abdominal wall defects [2].

Treatment for an abdominal defect is selected on the basis of several factors, including: (1) the medical status of the patient, (2) wound bed preparedness and depth and (3) size and position of the defect.

For Type II defects; like the case report, the use of flaps is advisable, with tensor fascia lata representing the flap of choice, particularly in the lower abdomen. Rectus advancement procedures may be used for well-selected midline defects of either type. But availability becomes vital. The concept of tissue expansion to increase both the fascial dimensions of the flap and zones safely reached by flap transposition is introduced. Overall failure is often is due to primary closure under tension, flap use for inappropriate zone, or technical error in flap use [3]. The multidisciplinary team management of such patients comprising of gynaecologists, gastrosurgeons and plastic surgeons is essential for favorable outcome.

The division of plastic and reconstructive surgery at the University of Maryland Medical System and the Plastic and Reconstructive Surgery Service at the Memorial Sloan-Kettering Cancer Center; in their 9-year experience have demonstrated that in the face of large, contaminated abdominal wounds where prosthetic material is contraindicated and local tissue rearrangement would be inadequate, fascia lata autografts are a reliable adjuvant to abdominal wall reconstruction [4].

The number and types of flaps available in the armamentarium of the plastic surgeon are vast. Though the current inclination is towards the use of free flaps with microvascular anastomosis, the local flaps still form the backbone of defect coverage.

References

1. Mathes SJ, Steinwald PM, Foster RD, Hoffman WY, Anthony JP (2000) Complex abdominal wall reconstruction: A comparison of flap and mesh closure. *Ann Surg* 232(4): 586–96
2. Bellows, Charles F, Alder, Adam (2006) Abdominal wall reconstruction using biological tissue grafts: Present status and future opportunities. *Expert Review of Medical Devices* 3(5):657–675
3. Rohrich Rod J, Lowe James B, Hackney Fred L, DDS Bowman (1999) An algorithm for abdominal wall reconstruction. *Plastic and Reconstructive Surgery*. CME
4. Disa Joseph J, Goldberg Nelson H, Carlton, et al. (1998) Restoring abdominal wall integrity in contaminated tissue-deficient wounds using autologous fascia grafts. *Plastic and Reconstructive Surgery* 101(4):979–986