Journal of Visceral Surgery (2016) 153, 77—80

Available online at ScienceDirect www.sciencedirect.com

Elsevier Masson France EM|consulte www.em-consulte.com/en

SURGICAL IMAGES

Groin reconstruction using a pedicled anterolateral thigh flap

L. Benichou*, A. Caillot, C. Vacher

Service de chirurgie maxillo-facial et plastique, hôpital Beaujon, 100, boulevard Général-Leclerc, 92110 Clichy, France

Available online 21 December 2015

KEYWORDS
Anterolateral thigh flap;
Groin;
Reconstruction;
Abdominal wall

Summary
Introduction: This article describes an attractive approach to the reconstruction of the groin after loss of substance: the skin, subcutaneous tissue and fascia of the rectus abdominis and oblique muscles were reconstructed using an anterolateral thigh flap based on a proximal vascular pedicle.
Clinical case report: A 70-year-old female with a strangulated inguinal hernia that had been neglected for eight days presented initially with intestinal necrosis and necrotizing infection of the abdominal wall in the right groin. After debridement of necrotic tissue, reconstructive surgery was necessary. We opted for an anterolateral thigh flap based on a proximal vascular pedicle.
Discussion: In this case, there was a major loss of substance that included the rectus abdominis fascia below the level of the arcuate line. This situation required a fascial reconstruction of the abdominal wall; a defect of this size would typically require synthetic mesh for closure. The anterolateral thigh flap allowed us to avoid the use of foreign material by repairing the defect with a pedicle flap including fascia lata and the quadriceps aponeurosis.
Conclusion: The use of an anterolateral thigh flap based on a proximal vascular pedicle seems to be a simple straightforward solution for reconstruction of the skin and fascia of the inguinal region.

Introduction

Flaps based on perforating vessels currently offer numerous reconstructive options when there has been a major loss of substance, while resulting in only minimal morbidity for the donor area [1]. The anterolateral thigh flap is a perforator-based flap, vascularized by perforating vessels arising from the descending branch of the circumflex femoral artery [2]. This flap has become quite popular and is often used in preference to the radial forearm (Chinese) flap or the parascapular flap [3,4] (especially in Asiatic populations where the

* Corresponding author.
E-mail address: benilud@hotmail.fr (L. Benichou).

http://dx.doi.org/10.1016/j.jviscsurg.2015.11.012
1878-7886/

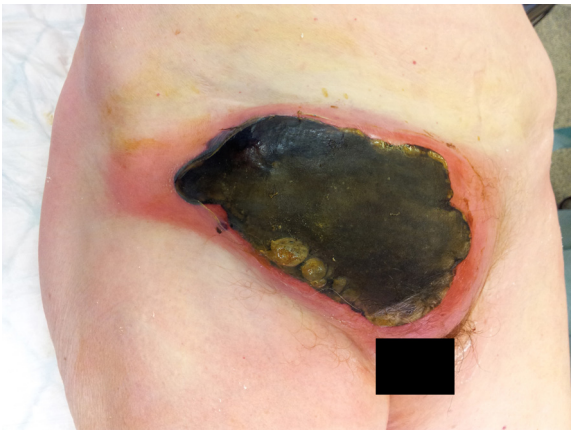

Figure 1. Initial appearance of the abdominal wall.

subcutaneous fatty layer of the thigh is less thick than in occidental populations). One of its advantages is that it does not sacrifice an important vascular axis and results in only minor cosmetic insult (primary closure of the thigh donor site).

This article describes the reconstruction of a major loss of substance of the abdominal wall in the groin, including skin, subcutaneous tissue, and the fascia of the rectus abdominis and obliques using a proximally based anterolateral thigh flap.

Case report

A 70-year-old female presented eight days after onset of strangulation of a right inguinal hernia. In the emergency room, there was evidence of extensive parietal necrosis in the inguinal region (Fig. 1). An urgent CT scan confirmed the diagnosis of a strangulated hernia with parietal abscess due to small bowel perforation with intestinal leakage into the subcutaneous tissues (Fig. 2). Excisional debridement was urgently performed to remove necrotic tissues including skin, subcutaneous tissues, and the rectus abdominis fascia. The necrotic and perforated small intestine was resected and the proximal limb was exteriorized by an ileostomy. The ileostomy was brought out in the left lower quadrant to separate it as far as possible from the area of necrotic abdominal wall with loss of substance and to minimize infectious risks; this also preserved the option of performing an eventual rectus abdominis musculocutaneous pedicle flap (Taylor flap) should there be failure of the anterolateral thigh flap.

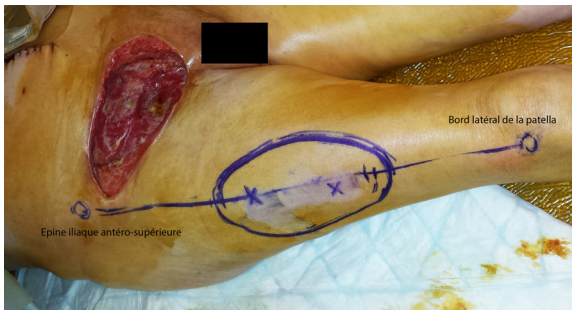

Figure 3. Laying out the anterolateral thigh flap. The crosses represent Doppler identification of arterial perforators.

After several days of wound debridement and local wound care, a reconstructive surgical procedure was envisioned, which we eventually performed using an anterolateral thigh pedicle flap.

Surgical technique

After excisional debridement of all necrotic tissues, the abdominal wall defect measured 15×9 cm and involved all layers — skin, subcutaneous tissue, and the muscular aponeurosis. The muscle bodies of the rectus and the obliques were still present as was the original hernia orifice and constituted an open musculo-peritoneal tract.

The anterolateral thigh flap was traced out on the middle third of the thigh, centered on an axis running from the anterior iliac spine toward the lateral edge of the patella. Two perforating arteries were identified using the vascular Doppler (Fig. 3).

The patient was positioned supine with a bolster beneath the right buttock. The incision was made along the anterior portion of the cutaneous paddle including skin, subcutaneous fat, and the fascia of the quadriceps muscle. The aponeurosis was freed from the underlying muscle until the perforating arteries were identified (three in this case). The perforating vessels were carefully dissected free from the lateral head of the quadriceps muscle and followed back to the descending branch of the lateral circumflex femoral artery. The posterior aspect of the flap paddle was then incised including the underlying fascia lata.

The descending branch of the circumflex femoral artery was then dissected proximally to its origin and the distal end was ligated. The flap was then passed through a tunnel beneath the lateral head of the quadriceps muscle and placed in the inguinal region (Fig. 4).

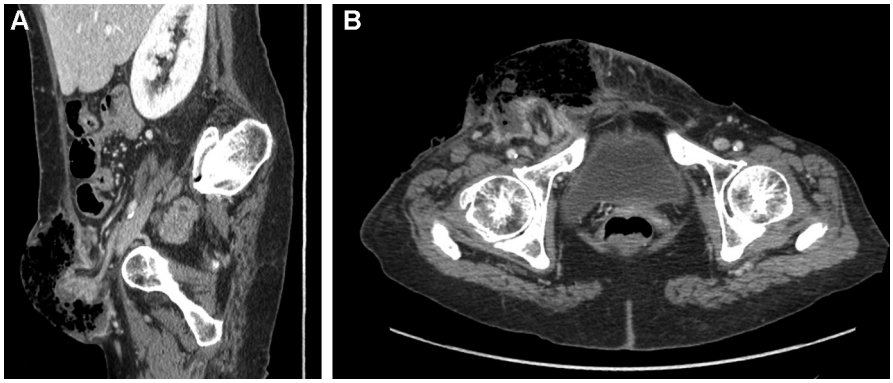

Figure 2. CT scan confirming the diagnosis of strangulated hernia with necrosis of the abdominal wall. A. Sagittal cut. B. Axial cut.