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CASE REPORT

Double L-shaped free-style perforator flap for perineal and vaginal reconstruction after cylindrical abdominoperineal resection

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Summary The improvement of patient carcinological status by an abdominoperineal resection by extended posterior perineal approach in a prone position requires the plastic surgeon to consider other reconstructive options.

We present an original double L-shaped free-style propeller flap used to reconstruct the vagina and the perineum of a 57-year-old patient after the resection of a T4 tumour of the lower rectum.

Primary reconstruction after abdominoperineal resection for pelvic malignancies is now well accepted,[1–3] especially using a vertical rectus abdominis musculocutaneous flap, which manages to obliterate the pelvic dead space and brings healthy, well-vascularised tissue into the region. Further, in female patients, this flap helps in the reconstruction of the resected posterior vagina wall.[1]

As recently shown by new evidence,[4,5] the cylindrical abdominoperineal resection by extended posterior perineal approach (in prone position) allows better tumour clearance than the classical methods. This technique for low rectal cancer reduces local recurrence. Open abdominal surgery and its associated morbidity are avoided with the laparoscopic approach. Further abdominal wall morbidity can be avoided by choosing an alternative donor area.

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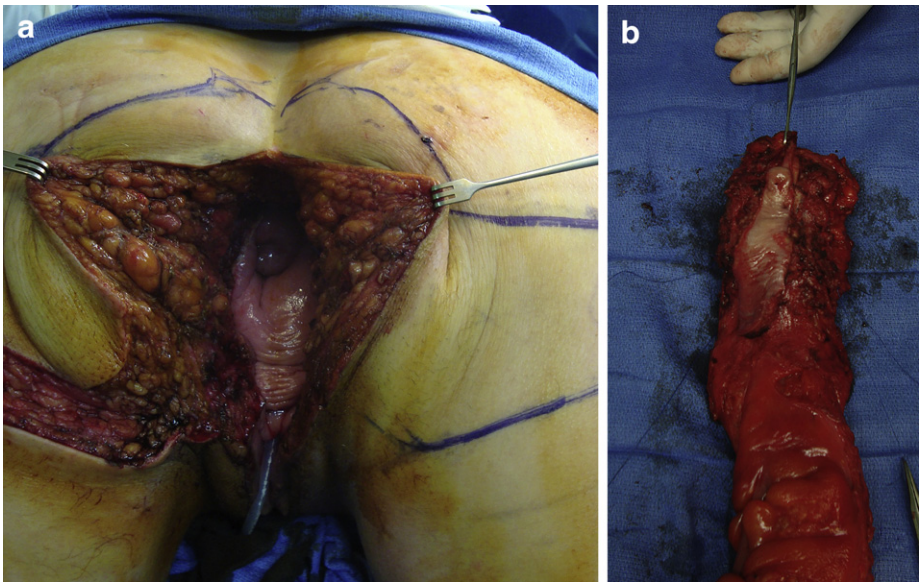

Figure 1 a) Abdominoperineal resection done on a supine position. Only the anterior wall of the vagina is left. b) The resection specimen with the posterior wall of the vagina.

We describe an original, local free-style perforator flap to achieve pelvic reconstruction in a prone position.

Case report

We report the case of a 57-year-old patient without any other significant medical history who presented with a T4 adenocarcinoma of the lower rectum with a rectovaginal fistula. She had preoperative chemo-radiotherapy, which was completed 7 weeks before surgery. A cylindrical abdominoperineal excision was performed. The first part was done laparoscopically with mobilisation of the meso-rectum and creation of a stoma. Then, the patient was rotated to the prone position, and an extended perineal dissection was performed (Figure 1).

Preoperative colour Doppler ultrasound (US) was performed to search for perforator vessels around the perineal defect (Figure 2). A symmetrically located perforator was found at the inferior part of the defect (at the medial edge of the inferior border of the gluteus maximus). It seems that it originates from the internal pudendal artery. Then, two double L-shaped flaps were harvested to reconstruct the perineum. The flaps were islanded on the pedicle by harvesting the wings of the flaps with the gluteus maximus aponeurosis, until sufficient mobility to turn the flaps into the defect was obtained. The vessels did not have to be skeletonised to obtain enough mobility.

The first L-shaped flap (left side) was used for adding volume and obliterating the dead space. It was completely de-epithelialised and the two parts of the flap were sutured to each other in order to recreate a cylinder. This cylinder was sutured to the sacrum. The second L-shaped flap was used for the inner and outer lining. The flap was rotated 90 °anti-clockwise. The vertical part of the flap was sutured to the remaining anterior wall of the vagina in order to create

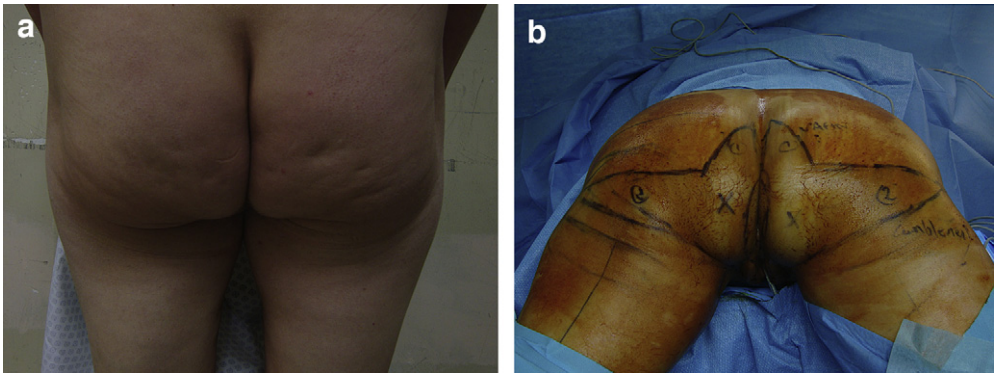

Figure 2 a) Preoperative view of the gluteal region. b) Preoperative marking. After choosing the perforator, a double L-Shape is designed.