

## Salvage of a recurrent trochanteric pressure sore with coxofemoral osteoarthritis using a superficial inferior epigastric artery propeller flap

Benoit Ayestaray

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Sir,

The recurrence of pressure sores remains a problem in paraplegic patients. More than 35 % of operated patients will have a recurrence [1–3]. Recurrent ulcers can occur after fasciocutaneous flaps and also musculocutaneous flaps. Then, flaps must be parsimoniously used for covering pressure sores. The superficial inferior epigastric artery (SIEA) flap is well known as a free flap, especially for breast reconstruction. We report the interest of the SIEA propeller flap for covering a recurrent trochanteric pressure sore in a paraplegic patient.

Mr. D. is a 52-year-old male, having a T3 paraplegia, secondary to a spinal cord injury 29 years ago. In less than 25 years, he experienced pressure sores in sacral, trochanteric, and ischiatic areas. On the right trochanteric region, he was successively treated by a tensor fascia lata myocutaneous flap, a vastus lateralis muscle flap, and a groin flap for two recurrences in 20 years. Recently, he developed another trochanteric pressure sore, associated with an osteoarthritis of the right coxofemoral joint (Fig. 1). The patient complained about hyperthermia and a limitation of the hip mobility (10° in flexion, 0° in adduction, and 0° in abduction), making the chest to bed transfers more difficult. A multidetector-row computed tomography was made to confirm the osteoarthritis and evaluate the cutaneous perforators of the abdominal region. No reliable perforators was found from the deep inferior epigastric artery, but the caliber (2.6 mm) and the course (130 mm) of the SIEA

were appropriate to raise a skin flap. The larger direct perforator of the SIEA had a 1.2-mm caliber, a 41-mm length, and the ascendant directionality adequate for a large skin flap. The surgery started by a large excision of the infected soft tissues around the ulcer. A femoral head–neck resection was performed. After a large cleaning and freshening of the acetabulum, the origin of the SIEA was dissected. The dominant direct perforator was found and included in the flap. A skin paddle measuring 15×20 cm was raised. The flap was rotated up to 100° for covering the trochanteric defect, as a propeller flap [4] (Fig. 2). The donor site was primarily closed. The operative time was 3 h, including the femoral head–neck resection, flap raising, and coverage of the coxofemoral defect. The patient was completely healed 2 weeks postoperatively. No recurrence or postoperative infection occurred during a follow-up of 24 months (Fig. 3). At 1 month, the patient recovered a mobility of 65° (45–110°) in flexion, 20° (0–20°) in adduction, and 40° (0–40°) in abduction. The chest to bed transfers and the dressing were significantly improved postoperatively.

Pressure sores reconstructive surgery in paraplegics is known for a high risk of recurrence. Musculocutaneous flaps have been mainly used for their thickness and blood supply in this indication. However, the results of this complex case confirm that there is no statistical difference in ulcer recurrence between myocutaneous flaps and fasciocutaneous flaps [5]. Reeducation and prevention of skin hyperpressure seem to be more important than a muscle transfer. This case also reports the interest of the SIEA flap when classical flaps are not available for local reconstructions, and when no reliable perforators (>0.5 mm) are present for a deep inferior epigastric perforator flap. The SIEA flap can be safely rotated around its pedicle, as a propeller flap, without venous congestion or flap

B. Ayestaray (✉)

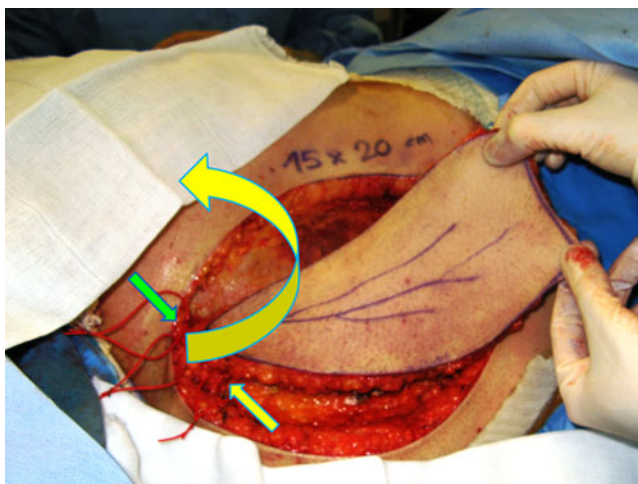
Department of plastic and reconstructive surgery, Sud Francilien Hospital, University Paris Sud XI, 116, Bd Jean Jaurès, 91100 Corbeil-Essonnes, France  
e-mail: bayestaray@yahoo.fr



**Fig. 1** Preoperative view of the trochanteric pressure sore. A central suppurative fistula is surrounded with inflammatory skin lesions. This trochanteric ulcer is associated with an osteoarthritis of the right coxofemoral joint



**Fig. 3** Postoperative view of the trochanteric reconstruction. The trochanteric area is completely healed without infection 24 months postoperatively. No recurrence has occurred 24 months after the surgery. A few visible longitudinal scar can be shown at the donor site



**Fig. 2** Intraoperative view of the superficial inferior epigastric artery propeller flap. The superficial inferior epigastric artery (*yellow arrow*) is dissected at the lower part of the abdomen. The proximal dominant perforator and the superficial inferior epigastric vein (*green arrow*) are identified. The skin paddle includes the dominant perforator. The measurement of the flap is 15×20 cm. The flap is rotated up to 100° for covering the trochanteric and coxofemoral defect

necrosis. It is a versatile flap for the coverage of large and infected trochanteric pressure sore.

**Conflict of interest** None

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