

Extensive Abdominal Surgery and Scar does not Absolutely Contraindicate Bilateral Flap Harvest from the Abdomen

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1. Case Report

A fifty-two-year-old female was referred by a fellow plastic surgeon for explantation of bilateral breast implants and possible secondary breast reconstruction with free tissue transfer. The patient had a history of bilateral skin sparing, nipple-sacrificing mastectomy with tissue expander insertion 5 years prior. She had subsequent implant exchange 1 year later, without adjuvant radiotherapy or chemotherapy. At presentation to the Senior Author (SF) both implants had become uncomfortable due to capsular contracture and the right implant was migrating laterally. Ultrasound and MRI confirmed rupture of the left implant.

The patient had a very significant past history of ulcerative colitis requiring extensive abdominal surgery. She had undergone six laparotomies including end colostomy, loop colostomy and reversal. Consequently, the patient had major abdominal scarring including a midline vertical laparotomy scar as well as a right lower quadrant stoma scar (Figure 1).

The consulting surgeon's preference for Popliteal Artery Perforator flap (PAP) or Gluteal Artery Perforator (GAP) free flap was discussed with the patient. A Deep Inferior Epigastric Artery Perforator (DIEP) flap was initially thought to be unavailable due to the extent of her abdominal surgery and scarring. CT-angiography of the patient's abdomen and buttocks was performed.

GAP perforators were seen to be favorable and a staged GAP bilateral breast reconstruction was definitely an option. Upon further reformatting and assessment of the CT-angiogram however, unexpectedly adequate Deep Inferior Epigastric Artery (DIEA) perforators were identified. A single large calibre perforator was identified inferior to the right stoma scar as well as multiple left DIEA perforators (Figure 2). Given DIEP flap is the gold standard for breast reconstruction [1], providing the best volume, texture and donor site morbidity, the patient and surgeon elected for this single stage bilateral revisional breast reconstruction. It was well discussed with the patient prior to surgery that if scarring were to preclude well perfused flap harvest, then the operation may be aborted or changed to a first stage unilateral reconstruction. The patient was also explicitly consented for possible muscle harvest (msTRAM flap) to reduce vascular risk if required.

Intraoperatively, bilateral capsular contracture and left implant intracapsular rupture with free silicone was confirmed. On the right abdomen, two patent perforators were identified following intricate dissection, one above and one below the stoma scar (Figure 3). A right sided msTRAM was harvested with only the medial third of the rectus abdominis muscle included in the flap to incorporate both perforators. A left sided DIEP flap was harvested on two perforators.



Figure 1: Pre-operative view demonstrating midline laparotomy scar and right lower quadrant stoma scar.



Figure 2: Pre-operative computed tomography demonstrating patent DIEA perforators.

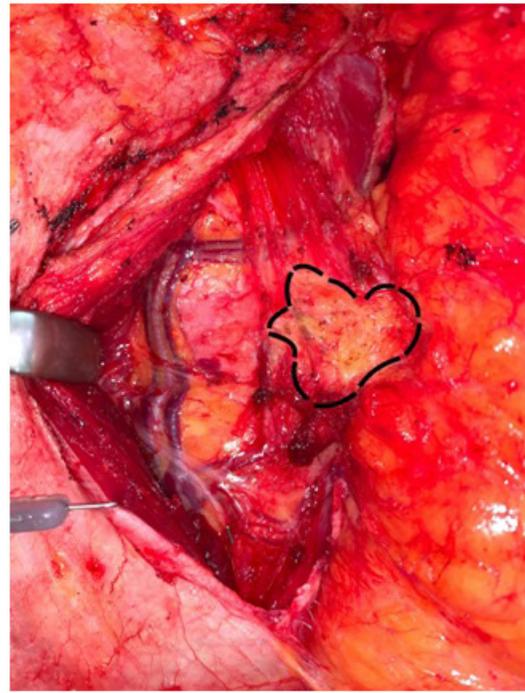


Figure 3: Intra-operative view of right deep inferior epigastric artery and vein with two best perforators, one above and below dense stoma scar (circled in black).

2. Discussion

Unilateral and bilateral DIEP flap breast reconstruction in women with abdominal scars is feasible [2,3,4]. These comparative retrospective studies have shown comparable flap outcomes (flap loss, fat necrosis) with an increased risk of donor site healing complications (delayed healing, hernia formation, seroma) [3,4]. The type of abdominal procedures that these patients have had include pfannenstiell incision for caesarean delivery, hernia repair, open or laparoscopic cholecystectomy or appendectomy. Bilateral abdomen-based breast reconstruction has not been described for patients with previous stoma formation and reversal as well as more than four abdominal surgeries, as seen in our patient. This case demonstrates that extensive and complex previous abdominal surgery including stoma formation and reversal is not an absolute contraindication to abdomen-based bilateral breast reconstruction. With careful clinical examination, accurate CT-angiography to guide pre-operative planning and careful surgery, safe flap harvest is possible.

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