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# Superior Gluteal Artery Perforator Flap for Breast Reconstruction

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## Indications

Desire for autologous breast reconstruction in a patient who desires moderate-sized (B-cup) breasts:

- That does not have adequate abdominal tissue for reconstruction due to paucity of tissue or prior surgery, such as abdominoplasty
- With pear-shaped body type

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## Essential Steps

### Preoperative Markings

Breast:

1. Mark sternal notch and midline.
2. Mark breast footprint: inframammary fold and breast height.

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Buttock donor site:

1. Draw line from the posterior superior iliac spine to greater trochanter.
2. Most perforators at a point 1/3 the distance from the posterior superior iliac spine to trochanter.
3. May have more lateral perforator—usually septocutaneous and allows for longer pedicle.
4. Center flap as an ellipse over the perforators, options:
  - (a) Body lift pattern
  - (b) Superomedial to inferolateral
  - (c) Superolateral to inferomedial

### Intraoperative Details

1. If unilateral delayed reconstruction, the patient can be placed in lateral decubitus to begin to facilitate simultaneous flap harvest and recipient bed preparation.
2. If bilateral reconstruction, start supine to prepare recipient sites, go prone to harvest flaps, and go back to supine to inset flaps.
3. Arms can be tucked or out depending on breast surgeon's preference if immediate reconstruction. If delayed, prefer tucked for better access for microsurgery.
4. Prepare the mastectomy pocket.
5. Expose the recipient vessels.

6. Reposition the patient if supine to prone to harvest flap.
7. Harvest SGAP flap.
8. *Place flap on ice (optional).*
9. Close donor site.
10. Reposition the patient back to supine.
11. Perform microsurgical anastomosis.
12. Inset flap.

### Postoperative Care

#### Overnight:

1. NPO in case there is a need to return to operating room
2. Foley
3. Bed rest
4. Q1h flap monitoring—assess color, turgor, temperature, and Doppler signal

#### Postoperative day 1:

1. Regular diet if no issues.
2. Out of bed.
3. Discontinue Foley.
4. Continue q1h flap checks.

#### Postoperative day 2:

1. Q2h flap checks

#### Postoperative day 3:

1. Q4h flap checks.
2. Discharge home if no issues.

### Possible Complications

1. Partial or total flap loss
2. Hematoma
3. Seroma
4. Fat necrosis
5. Wound dehiscence
6. Mastectomy skin flap loss—increased in smokers, should quit 4 weeks prior

### Operative Dictation

Diagnosis: Personal history of breast cancer  
(*or acquired absence of the left breast and nipple*)

Procedure: Immediate left breast reconstruction with superior gluteal artery perforator free flap

### Operative Findings

Superior gluteal artery perforator flap based on the number of perforators

Flap weight—\*\*\* g

Ischemia time—\*\*\* minutes

Pedicle length—\*\*\* cm

Arterial and venous diameter—\*\*\* mm and \*\*\* mm, respectively

### Indication

\*\*\* is a \*\*\*-year-old female with left breast cancer who will undergo a left simple skin-sparing mastectomy and desires immediate autologous reconstruction. Given her history of abdominoplasty and paucity of abdominal tissue, she was deemed an appropriate candidate for reconstruction utilizing her gluteal area.

### Description of the Procedure

In the preoperative area, proper consent was acquired and the patient was marked in the upright and standing position. The patient was then brought to the operating suite, placed in supine position, and underwent general anesthesia. A time out was performed. DVT chemical prophylaxis and IV antibiotics were given. The patient was then prepped and draped in a sterile fashion. A left skin-sparing mastectomy was completed by the breast surgical oncology service; please see

their separate operative note for details on that portion of the procedure. Then the reconstructive surgery portion of the case commenced. Hemostasis was obtained and the lateral inframammary fold was recreated with 2-0 Vicryl sutures. The third intercostal space was identified and the pectoralis major muscle was split in the direction of its fibers. The intercostal muscles were removed and the internal mammary artery and vein were identified. The third costosternal junction was removed to further enhance the exposure of the recipient internal mammary vessels. The vessels were cleaned under loupe magnification and protected with an instrument wipe. The mastectomy flaps were temporarily stapled closed and Ioban was placed over the closure. The drapes were removed, and the patient was placed in the prone position, taking care to pad all pressure points and protect her shoulders. She was re-prepped and draped in sterile fashion. Dissection of the superior gluteal artery perforator flap was started. Doppler was used to identify perforators as previously marked at a point approximately one-third the distance from the posterior superior iliac spine to the greater trochanter. Additionally a more lateral perforator was able to be identified by Doppler and marked. An ellipse skin paddle was designed incorporating the perforators situated in a body lift-type design. The superior skin incision was made, and dissection was beveled slightly superior to recruit excess fatty tissue and then progressed down to the gluteus muscles. The flap was then elevated off the muscle starting laterally. A lateral superior gluteal artery perforator flap based on three perforators that went in between the septum of the gluteus maximus and gluteus medius all the way to the takeoff was dissected. This gave approximately 6.5 cm of pedicle based on three perforators. The flap was temporarily secured, and Doppler signals were identified and marked with a 5-0 Prolene stitch for postoperative monitoring. The flap was then divided, wrapped in a saline-soaked laparotomy pad, placed in a sterile plastic bag, and placed on a transplant ice slushy machine for cold ischemia time. The donor site was closed in multiple layers with 2-0 V-Loc suture, 3-0 V-Loc suture, and Prineo tape over a 19 Blake drain. The drapes were removed and the patient was placed back in a supine position, re-

prepped, and draped. The mastectomy flap was reopened and retractors placed to expose the internal mammary vessels. The microscope was brought in, and the internal mammary vessels were clamped and divided, and the superior gluteal flap vessels were cleaned in preparation for anastomosis. The clamp on the internal mammary artery was released to ensure adequate inflow. One of the superior gluteal venae comitantes was anastomosed to the internal mammary vein using a 3 mm coupler. Excellent flow was noted out of the flap. Thereafter, the arterial anastomosis was performed with 9-0 nylon. Excellent flow was noted in and out of the flap after rewarming. The other vena comitans, which was temporarily clamped, was released to ascertain blood flow. This was then clipped with a medium hemoclip. Thereafter, the flap was placed into the pocket taking care not to kink the pedicle. The inset was performed to ensure optimal size and shape. The skin areas to be buried on the flap were marked out and de-epithelialized taking care not to pull on the pedicle. The flap was inset medially with three 2-0 Vicryl sutures. A 19 Blake drain was placed and the incisions were closed with 3-0 V-Loc, 3-0 Vicryl, and Prineo tape. Excellent Doppler signal was noted at the previously marked Prolene stitch. The patient was placed in a mammary support bra and taken to the recovery room in stable condition. Please note that all counts were correct. The patient tolerated the procedure well.

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## Suggested Reading

- Ahmadzadeh R, Bergeron L, Tang M, Morris SF. The superior and inferior gluteal artery perforator flaps. *Plast Reconstr Surg.* 2007;120:1551–6.
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