

## CHAPTER 18

# AESTHETIC SURGERY OF THE BREAST: MASTOPEXY, AUGMENTATION & REDUCTION

*Ali A. Qureshi, MD and Smita R. Ramanadham, MD*

Aesthetic surgery of the breast aims to either correct ptosis with a mastopexy, micromastia with augmentation, or macromastia with a reduction. The goals are to create a youthful, well-appearing breast. Important considerations for all patients include an assessment of their breast history including history of breast cancer, mammographic history and measurements of the breast and chest including sternal-notch to nipple, nipple to IMF, internipple distances and breast width and areolar diameter.

### I. MASTOPEXY

#### A. Goals

1. Correct breast ptosis with skin redraping and parenchymal remodeling of the breast to reduce mismatch between skin and tissue.
2. Adjust nipple position concurrently.

#### B. Regnault Classification of breast ptosis based on two important anatomic landmarks: (1) inframammary fold (IMF) and (2) nipple position

1. Grade I – nipple at level of the IMF
2. Grade II – nipple below the level of IMF but not at the lowest point of the breast
3. Grade III – nipple at the lowest point of the breast
4. Pseudoptosis – nipple at the level of IMF but glandular tissue below the level of the IMF

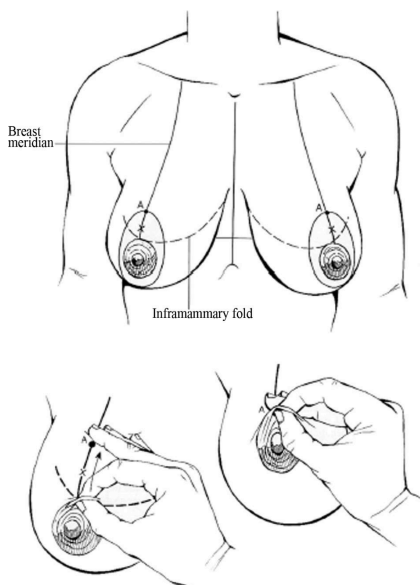


Figure 1. Ideal nipple position is based on its relationship to the inframammary fold. *From Nahabedian MY. Breast deformities & mastopexy. Plast Reconstr Surg 2011 Apr;127(4):91e-102e.*

C. Patient concerns

1. Usually bothered by the “shape” of the breast or size and position of nipple-areola complex.
2. Often report deflation and sagging of breasts.

D. Periareolar mastopexy

1. Incision is made around the areola as an eccentric oval
2. Can be used to raise the nipple up to 2 cm
3. Good for patients with grade I or II ptosis
4. Disadvantages include widening of the periareolar scar, flattening and de-projecting of the breast

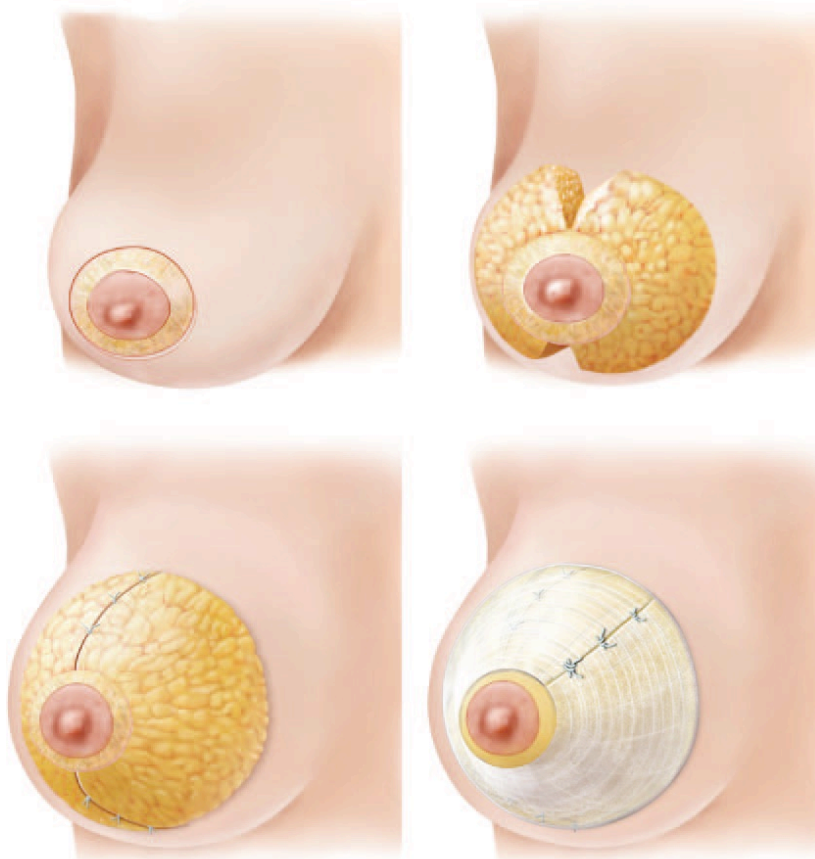


Figure 2. Periareolar mastopexy with mesh support

From Hidalgo D, Spector J. Mastopexy. *Plast Reconstr Surg* 2013 Oct;132(4):642e-656e.

E. Circumvertical or Vertical mastopexy

1. Incision made around the areola and down the meridian of the breast
2. Can be used for grade II and III ptosis
3. Usually involves removal of breast skin and underlying tissue from the lower pole of the breast with sutures to bring the medial and lateral pillars of the breast together

4. This helps support the elevated nipple-areola complex at its new, higher position

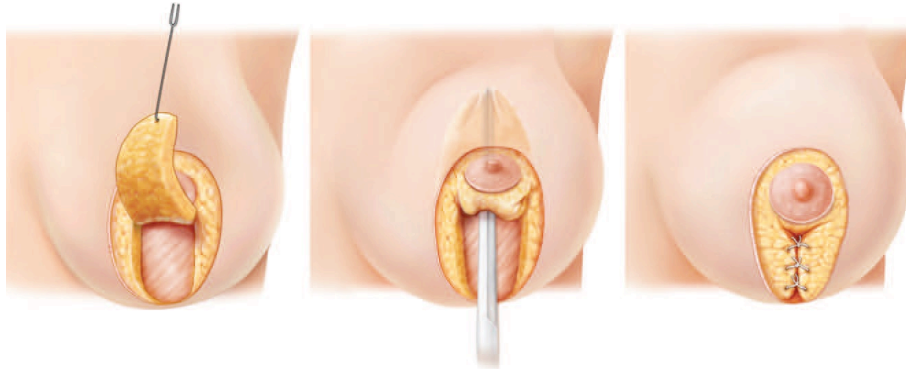


Figure 3. Vertical mastopexy

From Hidalgo A, Spector J. Mastopexy. *Plast Reconstr Surg* 2013 Oct;132(4):642-656e.

#### F. Wise-pattern mastopexy

1. Incision made around the areola and across to the medial and lateral edges of the breast and along the IMF
2. Can be used for grade II and III ptosis and patients with severe excess of skin
3. Has largest scar burden of any mastopexy technique and can lead to “bottoming out” or recurrent ptosis of the gland when used with an inferior pedicle

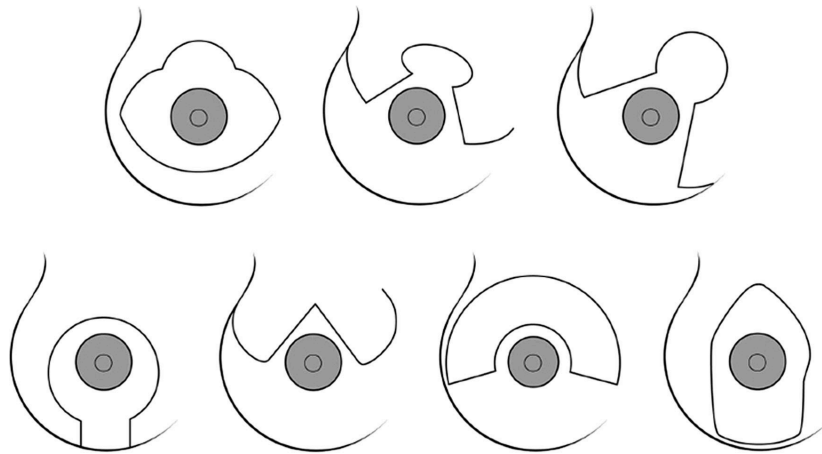


Figure 4. Wise pattern or inverted T mastopexy incision types

From Nahabedian M. Breast deformities and mastopexy. *Plast Reconstr Surg* 2011 Apr;127(4):91e-102e.

## II. AUGMENTATION

- A. Goals: increase the size of the breast parenchyma either using the patient’s own tissue (autologous) or a prosthetic device (saline or silicone implant)
- B. Patient concerns

1. Usually bothered by the size of the breasts.
  2. Important parameters in pre-operative evaluation
    - a. "Base width:" width of the breast on the chest wall
    - b. Pinch thickness of the upper pole breast tissue.
    - c. Ability of skin to stretch
    - d. Chest wall asymmetry
- C. Augmentation with an Implant
1. Planes of placement: implant has to be covered by stable soft tissue, which includes a combination of skin, parenchyma and muscle.
    - a. Subglandular – beneath the breast tissue but above the pectoralis muscle fascia
    - b. Subfascial – beneath the pectoralis muscle fascia but above pectoralis muscle fibers
    - c. Subpectoral – beneath the pectoralis major muscle
    - d. Dual plane –pectoralis muscle is released to a variable extent with release of inferior attachments and preservation of medial attachments. Muscle covers the superior part of the implant and breast tissue covers the inferior part of the implant, depending on extent of release of muscle from overlying parenchyma.

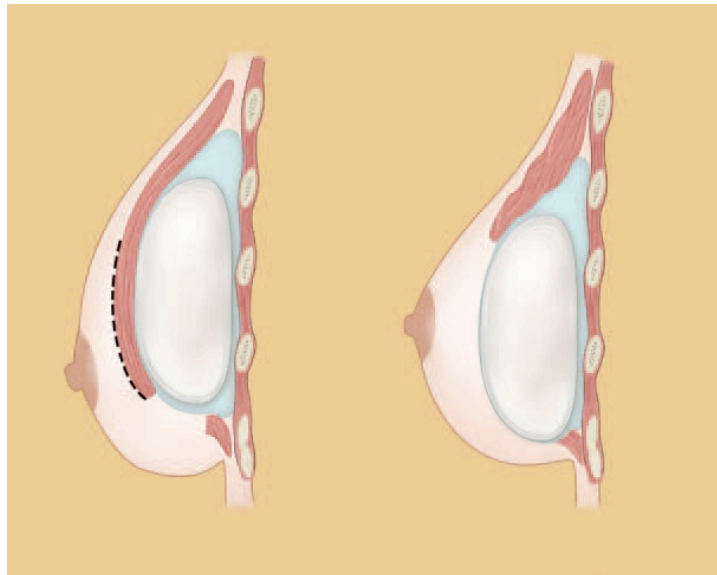


Figure 4. Subpectoral implant placement. Release of pectoralis muscle allows the muscle to rise above the implant

*From Hidalgo D, Spector J. Breast augmentation. Plast Reconstr Surg 2014 Apr;133(4):567e-83e.*

2. Incision choices: inframammary, transaxillary, periareolar are the most common.
3. Implants can be round or shaped (anatomic), saline or silicone, smooth or textured

4. BIA-ALCL (Breast Implant Associated Anaplastic Large Cell Lymphoma)
  - a. Potential risk with textured devices
  - b. An area of evolving research
  - c. Presents with a delayed seroma
  - d. Cytology: CD30+ and ALK+.
  - e. Treatment
    - i. Involves at least removal of the implant and complete capsulectomy.
    - ii. Requires multidisciplinary team approach including medical oncologist involvement.
- D. Augmentation with autologous tissue
  1. Fat –
    - a. Can be harvested from another part of the body (i.e. abdomen or thighs) and injected in the various planes of the breast to increase the size of the breast.
    - b. Can involve the use of an external tissue expanding device that increase the space within the breast to accept fat as well as neovascularization of the tissue bed (ie. BRAVA system).
  2. Auto-augmentation
    - a. Various flaps can be designed on lateral axillary tissue or adjacent tissue and rotated, advanced or folded onto the existing breast mound to reshape and increase the size of the breast.
    - b. Commonly performed in massive weight loss patients.
  3. Free flaps and abdominally based flaps
- E. Mastopexy-Augmentation
  1. Combined procedure to both increase the size and alter the shape of the breast
  2. Can be staged in two operations or perform simultaneously
  3. Revision rates ~10-30% range

### III. REDUCTION

- A. Goals
  1. Decrease the size of the breast
  2. Restore nipple location to a more youthful position
- B. Patient concerns
  1. Symptomatic patients usually have a history of cervical, shoulder or back pain that have not improved with medications or physical therapy
  2. May also have a history of rashes or hygiene issues
  3. Bra strap grooving as a result of large breasts
  4. Reductions can be done in asymptomatic patients as well for cosmetic reasons.
- C. Skin incision patterns and pedicles (which provide blood supply to the nipple areola complex) are two different considerations in breast reduction and can be combined

(for example, Wise-pattern superomedial reduction versus Wise-pattern inferior pedicle reduction)

D. Skin incisions: circumvertical or Wise-pattern

E. Basis of pedicles for blood supply to the NAC:

1. Inferior – 4<sup>th</sup> intercostal perforator
2. Superior – 1<sup>st</sup> and 2<sup>nd</sup> intercostal perforators
3. Superomedial – 2<sup>nd</sup> intercostal perforator
4. Medial – 2<sup>nd</sup> or 3<sup>rd</sup> intercostal perforator
5. Lateral – lateral intercostal perforators
6. Central – musculocutaneous perforators from thoracoacromial artery

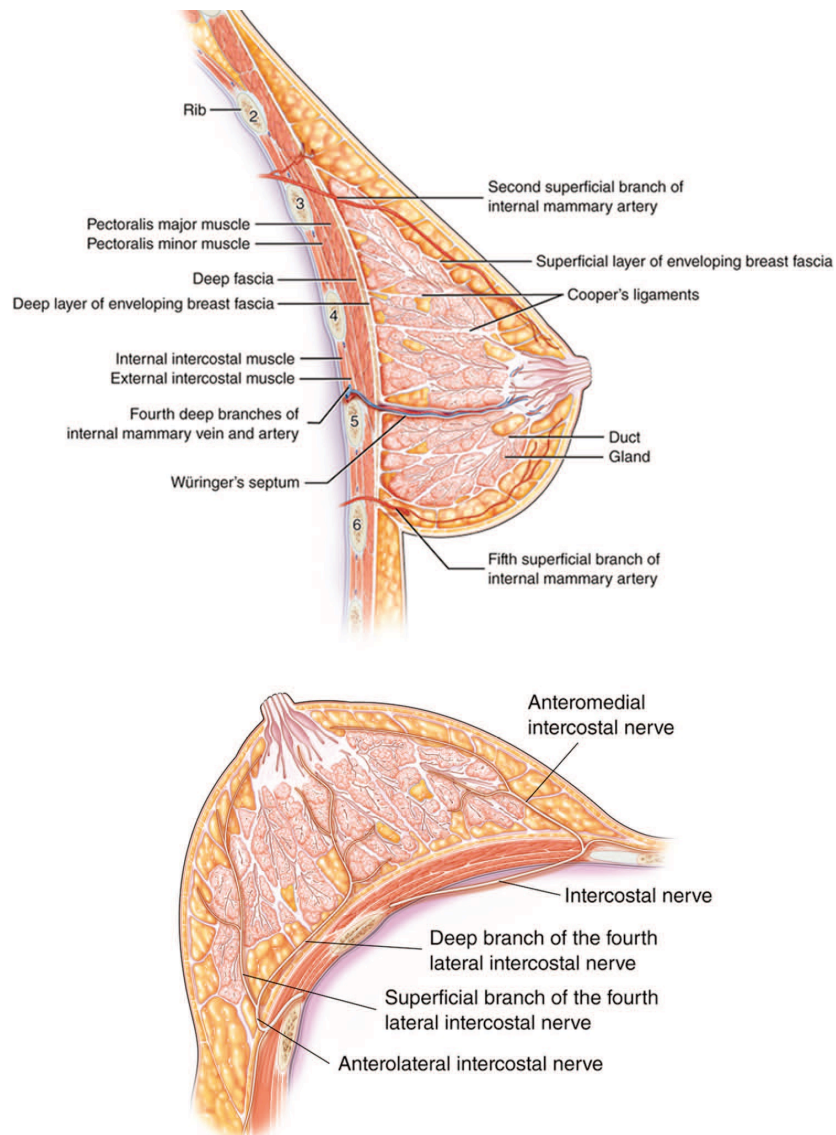


Figure 5. Anatomy and blood supply to the breast  
From Hall-Findlay E, Shestak K. *Breast Reduction. Plast Reconstr Surg* 2015  
Oct;136(4):531e-44e.

- F. Other techniques for very large and ptotic breasts include: breast amputation with free nipple grafting
- G. Complications
  1. Loss in ability to breast feed
  2. Changes in sensation.
    - a. Can get better, worse or stay the same as the nerve are often on stretch from the weight of breast tissue
  3. Loss of the NAC due to inadequate blood supply
    - a. If a change in color is noted, must re-open stitches, assess pedicle, etc.
    - b. If remains ischemic or congested despite intraoperative maneuvers, an option includes converting the nipple to a free nipple graft with similar principles to skin grafting for survival.

## REFERENCES

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