

FACULTY DISCUSSION & STUDY GUIDE

In addition to the review of the ASPS EdNet course modular material, this guide is provided as a tool for faculty use in preparation for a weekly conference. By following and addressing the points below, any plastic surgeon should be able to step in to teach the curriculum in a consistent and complete manner.

IX.C. Breast: 1, 2, Reduction Mammoplasty, Mastopexy

2 - Mastopexy

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To fully comprehend the articles included in the bibliography for the Mastopexy module, prior comprehension of the reduction mammoplasty module is quite helpful, most notably the article "Evolution of the Vertical Reduction Mammoplasty."

A. Mastopexy

1. Give a classification of ptosis and critique. (In Grade I the nipple- areola complex is at the level of the inframammary fold, grade II is moderate ptosis or a nipple below the inframammary fold but above the lower contour of the gland, and grade III is major ptosis with the nipple below the level of the inframammary fold and at the lower contour of the gland. This is a very general classification and does not give the evaluator, particularly in cases of severe ptosis, the magnitude of ptosis in quantitative terms such as nipple to sternal notch distance or nipple to IMF.)
 - a. Define pseudoptosis. (Characteristically, seen in the patient with a prior reduction or augmentation with an overly large implant and presents with nipple areola complex pointing superiorly and an increased nipple to IMF distance.)
2. What are the four elements of assessment of a patient for the appropriate mastopexy? See B. Augmentation-mastopexy. (The degree of ptosis, areola size, skin elasticity, parenchymal thickness, or volume of breast tissue.)

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3. Outline the steps to mark out a mastopexy including the ascertainment of the new nipple-areola location. (The *basic* steps consist in selection of the new nipple-areola location which can be accomplished by drawing a transverse line across both breasts at the level of the inframammary fold and measuring up approximately 4cm above this line for the *superior* limb of the nipple-areola complex if one desires a nipple location 2cm above the IMF. That location can be double-checked by lifting the nipple-areola complex manually and determine the aesthetic appearance of the location on the overall breast mound. The degree of ptosis will determine the size and the nature of the oval skin excision-deepithelialization.)
 - a. List the essential distance measurements in a prospective mastopexy patient. (Notch-nipple, nipple-IMF, internipple.)
4. In planning and marking a mastopexy, comment on the following:
 - a. Placement of the new nipple-areola location? (According to the readings, 1- 3 cm above the inframammary crease)
 - b. Rationale? (The most common, according to the readings, is inadequate correction of ptosis rather than a nipple too high. **Comment.** If the surgeon places the new NAC location above the inframammary fold, the greater the danger for pseudoptosis postoperatively. Most surgeons would probably limit the placement to about 1-2 cm above the inframammary crease.)
5. Outline the technical points in marking out a periareolar mastopexy. Give the limitations and frequent side effects. (The new nipple areola location is selected based on the level of the inframammary fold and then a marking made approximately 2 cm above or superior to that point to define the superior limit of the areola. A circum areolar incision is outlined. If no effort is made to raise the nipple- areola complex location, then a donut- design is utilized. The limitations with the former, donut- design, is flattening of the breast, widening of the scar, and no change in the location of the nipple- areola complex. If the nipple-areola complex is elevated, the limitations exist about the magnitude of lift that can be accomplished with a periareolar, no vertical, technique alone. So, this approach is for mild ptosis only.)
 - a. What other approach than a donut-design mastopexy would be appropriate? (Augmentation alone)

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6. What modification is made in conversion of a strictly periareolar mastopexy to that of a circum vertical? (The deepithelization is extended below the inferior limit of the nipple-areola and the excess skin inferior to the nipple-areola once it is sutured in place is excised. The result is a “lollipop” configuration.)
 - a. What are the limits of the vertical incision length? (A 7-8 cm distance from nipple to IMF that perhaps in some circumstances could be extended to 9 cm.)
 - b. What to do if the vertical excision is longer than the above dimensions? Potential problems? (A triangular excision can be done of the medial and lateral dog ears.)
7. The readings discuss Lassus- Lejour vertical techniques in management of ptosis. What is the basic fallacy in that discussion? (Those techniques were developed for breast reduction and rely upon breast suturing to push the remaining breast up into the superior pole and then allow postoperative breast settling to fill out the lower pole. Clearly, reduction techniques involve more extensive dissection- resection than mastopexy alone.)
 - a. Differentiate these vertical mastopexies from the technique of periareolar mastopexy. (The vertical techniques are simply an extension of the skin resection from that of purely a periareolar inset to that of a vertical excision of excess skin in varying amounts.)
 - b. What are the limitations, other than the above, in these types of vertical mastopexies in the treatment of ptosis? (Again, the limitation is the magnitude of ptosis that can be addressed without some type of transverse resection of excess skin or the necessity to leave a dog ear inferiorly.)
8. Discuss the options using some variations of an inverted- T. Critique. (The readings list include diagrams of a variety of techniques. Most of these techniques if followed exactly resect substantial amount of skin and result in a lengthy inframammary crease transverse scar. Perhaps another option is limited deepithelization below the nipple- areola complex with vertical closure and tailor- tacking to determine the medial and lateral dog ears for excision and thus limit the length of the inframammary scar.)

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9. Given the above information, outline the incisions necessary for mastopexy alone, no implant or reduction, for a series of patients with notch to nipple distance 23, 25, 27, and 29-cm assuming a new nipple-areola location of 21-cm. (The incisions necessary progress from a periareolar mastopexy alone to a “lollipop” with a short and then longer vertical component and finally to a inverted-T excision with a transverse component in the inframammary crease. As magnitude of the ptosis becomes more severe, a greater skin resection is necessary which cannot be accomplished totally in a vertical incision or direction.)
10. Discuss management, if any, of the parenchyma. (The same conceptual approach as applied in vertical reduction mammoplasty should be considered in circumvertical mastopexy. Options described in the readings include the suturing of medial and lateral vertical pillars of the breast tissue which of course implies some type of resection-incision inferiorly and vertically. Other options include the creation of a dermal glandular flap that then can be sutured superiorly beneath a strip of pectoralis fascia –muscle. Regardless, these options address the avoidance of skin only as the soft tissue “brassiere”.)
11. The readings suggest what modifications of suture techniques in preventing recurrent ptosis as well as widening of the periareolar scars? (Use of the Goretex sutures for the areola as well as glandular sutures.)
 - a. What are some disadvantages of these techniques? (Goretex sutures can extrude, break, or unravel.)

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B. Augmentation – Mastopexy

1. What are the key criteria and the decision to do a mastopexy with bilateral augmentation mammoplasty or not? (The absolute location of the nipple- areola complex, namely the degree or grade of ptosis, if the nipple- areola complex is visible on the most anterior portion of the breast, and the distance from the inframammary crease to the nipple- areola complex. The readings outline the variability and complexity of the decision process to perform a mastopexy in conjunction with augmentation. The most important variable is the magnitude of skin excess which can be expressed by several different measurements: One, the notch to nipple distance; two, the extensibility with traction of the breast anteriorly; third, the nipple to inframammary crease distance. Since no absolutes exist but a notch to nipple areola complex greater than 22cm, a skin extensibility of greater than 4cm, and a nipple to IMF distance greater than 9-10cm should raise concerns about skin envelope. A judgement used by many experienced breast surgeons is with the patient in sitting position to raise the nipple areola complex, and breast to what appears a more normal location and mark that point. The necessity or not to provide additional volume can also be judged by the patient by manually holding the breast in a more normal position on the chest wall while viewing in mirror and/or the patients desire for additional superior pole fullness.)
 - a. The readings refer to “vertical skin excess”. How can that measurement be of value? (The reading describes a vertical skin excess of greater than 6cm mandating a two stage approach rather than a single operation of augmentation-mastopexy. In essence, the decision hinges off the magnitude of altering two variables simultaneously, breast volume and skin envelope.)
2. What is another potential objective measurement of vertical skin excess? (The nipple areola complex is ptotic from an ideal location. For example, if the ideal location appears to be a notch to nipple distance of 22cm, and the nipple areola complex measures 27cm the skin excess will be 5cm.)
3. What are several maneuvers short of a mastopexy that can be utilized in the augmentation patient to avoid a concomitant mastopexy? (Drop the inframammary fold, use of a subglandular pocket or perhaps a “dual plane” and possibly the use of an anatomic gel implant to achieve greater projection for similar volume.)
 - a. What are the principal shortcomings of all of these maneuvers? (Lack of superior pole fullness. See below.)

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4. Can *all* patients in whom the nipple-areola complex lies at the inframammary fold be managed with augmentation alone? (No. This group of patients, which may be the majority of potential candidates for mastopexy, may have a less than satisfactory subjective and objective result.)
 - a. Why not? What are the other variables? (The location of the inframammary fold and the breast on the chest wall and the patients emphasis of her outcome on superior pole fullness.)

C. Explantation – Mastopexy

1. What are the options available for the augmented patient who presents with ptosis? (Simple explantation but the patient result will be a ptotic breast. If the patient does not desire or need explantation or implant exchange, simply a mastopexy can be done. The option for true ptosis are explantation with mastopexy and deferred augmentation; and finally, explantation mastopexy, capsular surgery, and reaugmentation at the same setting. The clinical situation can be quite complex if, in addition, pocket re-location is necessary.)
 - a. Describe pseudoptosis. (As discussed and outlined under mastopexy, pseudoptosis consists of “bottoming out” with an increase in nipple-IMF distance but a nipple-areola complex, NAC, that points superiorly. Correction requires a fleur-d-lis excision of both vertical and transverse or horizontal skin excess with a design of vertical incisions that are no more than 6cm in length. The apex of the skin excision is at 6 o’clock of the NAC. Once skin is resected, internal parenchyma suturing should be performed as well. The correction then pulls the nipple areola complex down into a more normal location as well as corrects the increased nipple-IMF distance.)
2. Describe the technical aspect of explantation. (A preferred approach is the use of an inframammary fold incision, 6cm in length. The technical approach to a subglandular explantation differs from that of a subpectoral implant location. Both sharp and blunt digital dissection is done periprosthetic in location to avoid entrance into the implant cavity itself. That approach avoids spillage of silicone into the wound in cases of a ruptured silicone implant. Subpectoral implants are dissected off the overlying pectoral muscle but most commonly the floor of the capsule, adherent to the chest wall, is only partially excised because of tight adherence. A similar technical challenge frequently exists in a subglandular pocket directly beneath the nipple-areola complex.)

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3. What are the guidelines for determination if a simultaneous mastopexy is appropriate? (The distance for the nipple-areola to be elevated superiorly is a guide toward whether a mastopexy, certainly with replantation, is appropriate. If the distance is greater than 4-5cm consideration should be given to explanation and mastopexy without augmentation. If the augmentation was subglandular *and* the distance for elevation of the NAC is greater than 4-5cm, the risk for necrosis of the nipple becomes considerable because of the thinning of the breast with augmentation as well as the necessary dissection for the anterior portion of the capsulectomy. Those factors may sum to ischemia of the nipple. Consider explantation and a delayed mastopexy augmentation in these circumstances.)
4. Describe the management of the capsule in the patient who will have explantation, mastopexy, and reaumentation. (Consideration should be given not to perform a complete capsulectomy with the management of the capsule in the patient who will have explantation, mastopexy, and reaumentation, since to do so will render the breasts, and thus the nipple-areola, more ischemic. If the implant is subglandular consideration can be given to excising the floor of the capsule if that maneuver can be accomplished without disruption of the underlying pectoralis, usually not possible with a subpectoral approach. Unfortunately, in explantation of ruptured silicone implants, a periprosthetic capsulectomy is preferred to avoid the gross spillage of silicone gel into the wound, a difficult quandary in this setting of explantation, mastopexy, and implant replacement.)
5. Why do the readings favor a superior pedicle rather than an inferior? (For several reasons: one of the patients may have had a prior inframammary crease incision for insertion of the implant; second; as the implant drifts inferiorly, the parenchyma and blood supply become attenuated and thinned; thirdly, the explantation may require some type of inferior incision)

D. Tuberous Breasts

1. What are the clinical findings in a tuberous breast deformity? (A superiorly malpositioned IMF with a shortened nipple-IMF distance, and in the more severe cases, a herniation of the breast tissue into the nipple areola complex with enlargement of the latter.)

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- a. Describe a spectrum. (The mildest form consists of a modestly shortened distance from nipple to IMF and some modest diminution in lower pole skin envelope mostly medial, all of which may be somewhat subtle in appearance. The classification into more severe forms is dependent on the degree of constriction of the breast and herniation of the breast tissue with a constricted inferior pole with hypoplasia/constriction of the breast and deficiency of skin-soft tissue in both the medial and lateral quadrants.)
2. What will be the outcome in the failure to recognize a milder form of the deformity, treated with augmentation? (The tight inframammary fold will be apparent postoperatively, perhaps even as a “double-bubble” result. The result will be a failure of the implant to fill the tight lower pole and a less than desirable absence of the normal convexity.)
3. What is probably the most significant treatment decision that must be made in the moderately severe tuberous breast? (Whether one or two stages will be necessary for complete correction. If a implant alone will either immediately or with time fill out the lower pole and obliterate the old IMF crease then a single stage is possible. If not, a two stage with a preliminary placement of a tissue expander will be necessary. That necessity is dictated by the degree of constriction of the skin envelope. If the skin is adherent to the underlying chest wall then in all likelihood two stages will be required.)
4. Describe the sequence of procedures in a single stage correction including choice of access incision. (A periareolar incision is optimal to provide access to the lower pole of the breast and release of any fibrous bands particularly on the posterior aspect of the breast. Release of those bands is in preparation for a subpectoral replacement of an implant is important as well as radial scarring of the posterior capsule of the breast. A discrete approach to release of the IMF in order to set new and lower IMF is equally as important. Occasionally, the deformity will present with some inferior prolapse of the nipple-areola that would require correction by a modest mastopexy. If not, some reduction in the size of the areola may also be necessary.)

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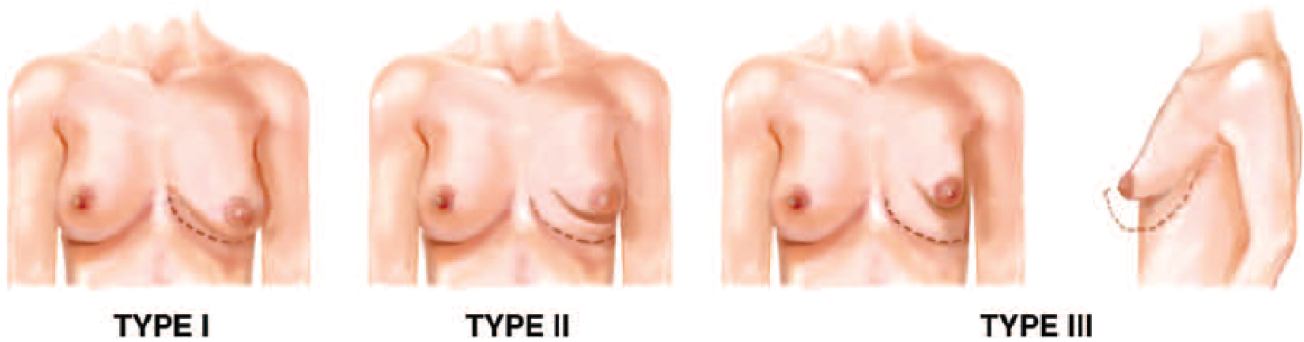


Fig. 1. Classification of tuberous breast deformity. Type I, hypoplasia of the lower medial quadrant; type II, hypoplasia of the lower medial and lateral quadrants; and type III, severe breast constriction and global hypoplasia.

Kolker AR and Collins MS, "Tuberous breast deformity: Classification and treatment strategy for improving consistency in aesthetic correction", *PRS*, (2015); 135(1):75

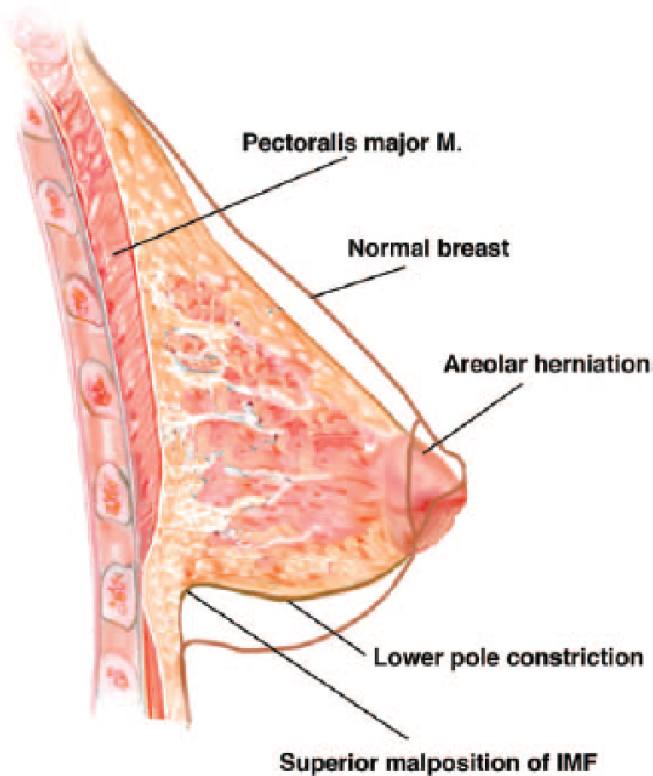


Fig. 2. Anatomical features of tuberous breast deformity. *IMF*, inframammary fold.

Kolker AR and Collins MS, "Tuberous breast deformity: Classification and treatment strategy for improving consistency in aesthetic correction", *PRS*, (2015); 135(1):75

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Supplemental – Read in preparation for pre-op conference

- Hammond DC., Chapter 6 “Augmentation Mastopexy”, *Atlas of Aesthetic Breast Surgery*. Saunders Elsevier, (2009); **129-145.**