Recurrent Mammary Hyperplasia: Current Concepts

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Learning Objectives: After studying this article, the participant should be able to: 1. Understand the factors leading to undesirable long-term reduction mammoplasty results. 2. Delineate the differential diagnosis of recurrent hypermastia. 3. Understand the significance of preoperative counseling, particularly with regard to expected postoperative outcome. 4. Understand short-term and long-term expected and undesirable postoperative results. 5. Understand safe and effective surgical planning for revision reduction mammoplasty.

A large majority of patients who undergo reduction mammoplasty are satisfied with their aesthetic outcome and resolution of preoperative symptoms. Occasionally, patients present with postoperative concerns; these are usually aesthetic in nature and caused by breast scarring, breast asymmetry, and/or breast shape. Inadequate excision and recurrent hypermastia are more complex concerns, which require careful evaluation and treatment. Analysis of both the presenting deformity and the original surgical approach is critical in determining an operative plan. This article discusses the safe approach to revision reduction mammoplasty. Current concepts are discussed and presented. An algorithm for decision-making is presented and discussed. (Plast. Reconstr. Surg. 111: 387, 2003.)

Multiple studies attest to patient satisfaction with reduction mammoplasty. Postoperative relief of presenting symptoms is the expectation, and improved quality of life is common. Despite these statistics, a small percentage of patients still exist who are dissatisfied with their outcome and present for revision reduction mammoplasty. Although the majority of these revisions are for small aesthetic issues, occasionally patients present complaining either of recurrence or of an inadequate primary reduction. Juvenile breast hypertrophy is a rare but well-described entity in young, early pubertal females, and multiple operations are not uncommon. The approach to revision reduction mammoplasty must be tailored to the presenting deformity, the cause of the presenting deformity, the previous surgical technique, and a clear understanding of the patient’s expectations.

A woman may be disappointed because of scarring, asymmetry, and odd-shaped or boxy breasts; rarely is the disappointment due to inadequate excision. Loss of nipple sensation and inability to breast-feed are infrequent complaints because patients often expect this postoperatively. Informed consent with proper communication preoperatively usually prevents unrealistic expectations.

Long-term scars are one of the tradeoffs of reduction mammoplasty. Although various techniques have been designed to minimize scarring, complete elimination of scars is clearly impossible. Physical examination is important to ensure incisions are healing appropriately, and patients are counseled on realistic expectations for ultimate scar maturation. Postoperative massage and silicone pressure sheeting can be encouraged, and time is allowed for scar maturation. Occasionally, scar revision is undertaken after the patient is counseled that the scar may not improve even with surgical intervention. The psychological impact of poor scarring should not be underestimated.

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Breast asymmetry is the norm and should be pointed out preoperatively to the patient. If only a slight undesirable asymmetry exists, liposuction can be performed with good results. If a larger discrepancy exists, surgical revision can be considered. An appropriate interval for swelling to resolve and wound maturation to occur should be allowed before revision is considered, usually a minimum of 6 months.

Preoperative expectations clearly influence a patient’s satisfaction with shape. Patients need to be counseled preoperatively that the initial result is designed to allow for the inevitable “bottoming out” that occurs over time.11 The goal of breast reduction should not be to create a virginal-appearing breast but rather a mature, slightly pendulous breast that will persist proportional to the patient’s build.12,13

Inadequate excision should be a rare complaint.14 Preoperative expectations should be openly discussed; this is imperative to avoid misunderstandings and disappointments between surgeon and patient. Regnault and Daniel15 described the amount of excised tissue needed to decrease breast size in various chest circumferences (Table I). Acutely, hematomas or seromas may be the culprit and need drainage. In addition, infection and swelling need to be considered. Operative reexcision may need to be performed if there is a gross discrepancy in size immediately postoperatively. In this case, reopening of incisions should allow dissection along previous planes without compromising the known pedicles.

Table: Amount of Tissue Removed for Each Change in Cup Size*

<table>
<thead>
<tr>
<th>Chest Circumference (in.)</th>
<th>For Each Cup Size of Desired Reduction, Remove:</th>
</tr>
</thead>
<tbody>
<tr>
<td>32–34</td>
<td>100 g</td>
</tr>
<tr>
<td>36–38</td>
<td>200 g</td>
</tr>
<tr>
<td>42–44</td>
<td>300 g</td>
</tr>
<tr>
<td>44–46</td>
<td>400 g</td>
</tr>
</tbody>
</table>


Recurrent hypermastia is a much more complex problem, and an algorithm is described for its management (Fig. 1). A careful history must be obtained from the patient. Important factors include details of the breast before the operation, along with the immediate, initial postoperative result. If photographs are available, they are invaluable in this regard. Medical record photographs along with a chart review provide useful information and details that the patient may not recall, especially if the first procedure was performed by a different surgeon. Preoperative measurements along with the gross mass excised can be compared with current findings. Have the breasts continued to enlarge postoperatively, or were they inadequately reduced? The patient should be asked her preoperative, postoperative, and current bra size. The patient should also be questioned about a history of overall weight gain, pregnancies, and medication or drug use.16,17 A mammogram should be obtained and reviewed.

Most important is whether the growth has been symmetric or is limited to one breast. A careful physical examination to detect palpable masses must be performed. It is imperative to rule out malignancy with any complaints of recurrent hypermastia. A good history, a careful physical examination, and a mammogram must be obtained. Baseline-screening mammograms are recommended for all postoperative reduction mammaplasty patients.18 Consideration should be given to the areas of excess breast tissue. Does the breast have diffuse tissue hypertrophy or localized areas of excess? Is the excess located laterally or inferiorly? Is the breast ptotic or pseudoptotic? After reduction mammaplasty, bottoming out often leads to pseudoptosis where the nipple is at or above the inframammary fold.

Juvenile breast hypertrophy is a disorder initially described in 1669.19 The diagnosis of juvenile gigantomastia should be apparent preoperatively, given the young patient’s dramatic presentation, and the family should be counseled on its natural history. Juvenile virginal hypertrophy typically manifests in early puberty, seldom regresses spontaneously, and is much more severe than simple breast hypertrophy.20 Gigantomastia occurs primarily in girls 11 to 14 years old and manifests as a result of estrogen stimulation at the onset of the first menses.21 Laboratory examinations are often inconclusive and seldom demonstrate abnormalities. Operative techniques include total mastectomy with reconstruction or reduction mammaplasty with inevitable revision.22

**CASE REPORTS**

**Case 1**

A 44-year-old African-American woman presented complaining of recurrent symptomatic hypermastia including...
back and shoulder pain. She had a reduction mammaplasty and noted that she never obtained relief of symptoms. She believed that the primary operation had not removed adequate breast tissue. Breast examination was notable for well-healed but slightly widened scars in an inverted T pattern (Fig. 2). She had bilateral ptosis, and the right breast was larger than the left. The breasts were soft, and no palpable masses or lymphadenopathy was appreciated. Nipple sensation was grossly intact. Screening mammography was within normal limits.

Because no operative report was available and the breasts demonstrated marked pseudoptosis, inferior wedge resection (Fig. 3) was performed, incorporating the original transverse incisions. Liposuction was used laterally, with the removal of 425 g from the right breast and 375 g from the left breast. As shown in the algorithm presented, this patient was
in the pathway of inadequate excision—small planned reduction—unknown primary pedicle. Therefore, inferior wedge resection was performed with adjunctive contouring liposuction. She tolerated the procedure well and postoperatively was satisfied with resolution of long-term back and shoulder pain at 9 months.

Case 2

A 40-year-old Caucasian woman with a history of reduction mammoplasty 16 years before presentation noted a history of fluctuating weight loss and presented complaining of both recurrent macromastia and nipple asymmetry (Fig. 4). At
examination, she was noted to have well-healed scars and grade III ptosis with pseudoptosis. In addition, she had nipple asymmetry, with a larger left areola. Her physical examination was unremarkable for masses or nipple discharge. A mammogram was obtained and was normal.

In the operating room, secondary reduction mastopexy was performed, using the previous T incisions in an inferior wedge design. Liposuction was performed, with the removal of 525 g and 600 g from the right and left breasts, respectively, followed by wedge resection of 142 g and 128 g. Circumareolar and periareolar mastopexy was performed to address asymmetry. Based on the algorithm, this patient followed the pathway recurrent hypermastia→negative mammogram→pseudoptosis→inferior wedge resection with mastopexy for areolar asymmetry. The patient healed without complication and was well satisfied with her result at 6 months.

**DISCUSSION**

The algorithm presented divides recurrent hypermastia into three basic categories. In both the recurrent and the inadequate primary excision groups, operative planning should be based on the amount of the planned excision. In small reductions and in cases of pseudoptosis, inferior wedge resection or a fleur-de-lis type of excision (if volume reduction in both vertical and horizontal vectors is required) can be safely performed. Alternatively, if the original pedicle is known, reexcision can be performed using the original pedicle. Larger excisions (greater than 500 g) are more complex. In these cases, if the primary pedicle is known, this is the safest technique. When the pedicle is unknown and the planned resection is large, free nipple grafting must be considered.

Important considerations in designing a surgical plan include the location of the previous incisional scars, the location of the nipple-areola complex, assessment of the degree of pseudoptosis, and the altered blood supply to the breast. Reviewing the surgical technique used is important in formulating a new surgical plan. The blood supply to the nipple-areola complex will consist of the original pedicle along with neovascularization from the surrounding breast tissue. If the nipple needs to be transposed and the pedicle is known, then reconstruction based on this pedicle can be performed. Knowledge of the original pedicle is important because transection has resulted in nipple-areola ischemia.

Cases of true juvenile macromastia are rare and should be aggressively treated with early reduction and planned revision as the macromastia recurs. This should be discussed with the young patient and her parents during early consultation. The psychological impact of multiple procedures and the resulting deformity must be addressed, and psychological referral may be necessary. Mastectomy and reconstruction is occasionally necessary in aggressive cases.

It is imperative to rule out malignancy with any complaints of recurrent hypermastia. A good history, a careful physical examination, and a mammogram must be obtained before any operative intervention.

Reduction mammoplasty is a highly successful operation that results in a high level of patient satisfaction. Most complaints are because of small aesthetic problems that can easily be addressed. Recurrent hypermastia is a more complex problem, and we present an algorithm that is useful when patients desire revision reduction. Consideration must be given to the reasons for the “recurrent” breast hypertrophy. Different operative strategies will be useful, depending on the structure of the previously operated breast.

Important concepts in recurrent mammary hyperplasia include the following:

- Review of history of breasts since the initial operation
- Careful examination for asymmetries and masses
- Mammographic radiological evaluation
- Review of operative technique used from the operative report if available
- Choice of operative technique based on examination findings and amount of reduction to be performed.

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REFERENCES


Self-Assessment Examination follows on the next page.
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1. THE MOST FREQUENT COMPLAINT AFTER REDUCTION MAMMAPLASTY IS RELATED TO:
   A) Scarring
   B) Asymmetry
   C) Shape
   D) Size
   E) Nipple sensation

2. THE MOST COMMON INDICATION FOR SECONDARY REDUCTION MAMMAPLASTY IS:
   A) Inadequate primary excision
   B) Juvenile hypermastia
   C) Benign mass
   D) Malignant mass
   E) Parenchymal regrowth

3. WHEN PERFORMING SECONDARY REDUCTION MAMMAPLASTY WHERE THE PRIMARY TECHNIQUE IS UNKNOWN AND THE PLANNED RESECTION IS GREATER THAN 500 GRAMS, THE MOST EFFECTIVE AND SAFEST METHOD IS:
   A) Inferior pedicle
   B) Superior pedicle
   C) Vertical pedicle
   D) Fleur-de-lis inferior wedge
   E) Free nipple grafting

4. THE BLOOD SUPPLY TO THE NIPPLE-AREOLA COMPLEX AFTER INFERIOR PARENCHYMAL WEDGE RESECTION WILL ENTER FROM AN ARC OF:
   A) 45 degrees
   B) 90 degrees
   C) 180 degrees
   D) 270 degrees
   E) 330 degrees

5. APPROXIMATELY HOW MANY GRAMS OF TISSUE WILL NEED TO BE REMOVED IN EACH BREAST IN ORDER TO CHANGE A DD BREAST SIZE TO A C BREAST SIZE IN A WOMAN WITH A 37-INCH CHEST CIRCUMFERENCE?
   A) 100
   B) 200
   C) 400
   D) 600
   E) 800

To complete the examination for CME credit, turn to page 534 for instructions and the response form.