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ORIGINAL PAPERS

Macromastia Surgery: a Proven Approach Perfected Over 25 Years in Plastic Aesthetic Surgery

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Abstract

Macromastia is a rare condition in women and is characterized by an abnormal growth of the mammary glands. Macromastia is considered breast hypertrophy in which the excess of breast glandular tissue exceeds 3% of the total body weight¹. In specialized literature, the term gigantomastia is also used⁷. Some authors consider the term macromastia synonymous with gigantomastia, especially since the repercussions on the general state of the body are the same. Other authors consider that the two terms, macromastia or gynecomastia, are not synonymous⁷. Currently, there is no unanimous agreement on the definition of the two terms.

The article presents my experience of 25 years in the surgical management of macromastia (gigantomastia) on a number of 364 cases. The surgical solution was based on the use of the modified McKissock technique (if the breast resection involved the excision of up to 1.5 kg of mammary gland from the level of a single breast) or the breast reduction with a free areola graft in the Pitanguy technique (if the resection involved more than 1.5 kg and the positioning of the new areola exceeds 15 cm from the level of the submammary groove).

The clinical evaluation is very important for establishing the surgical management. The benefits of breast reduction in these cases are evident immediately postoperatively.

Keywords: macromastia, gigantomastia, breast reduction, McKissock, Pitanguy.

Rezumat

Macromastia este o situație rar întâlnită la femei și este caracterizată printr-o creștere anormală a glandelor mamare. Se consideră macromastie hipertrofia mamară în care excesul de țesut glandular mamar depășește 3% din greutatea totală corporală¹. În literatura de specialitate este utilizat și termenul de gigantomastie⁷. Unii autori consideră termenul de macromastie sinonim cu cel de gigantomastie, mai ales că repercusiunile asupra stării generale ale organismului sunt aceleași. Alți autori consideră că cei doi termeni, macromastie și ginecomastie, nu sunt sinonimi⁷. În prezent nu există un acord unanim asupra definiției celor doi termeni.

Articolul prezintă experiența mea de 25 ani în managementul chirurgical al macromastiei (gigantomastiei) pe un număr de 344 de pacienți. Rezolvarea chirurgicală s-a bazat pe utilizarea tehnicii McKissock modificată (dacă rezecția mamară a implicat excizia a până la 1.5 kg de glandă mamară de la nivelul unui singur sân) sau reducția mamară cu grefă liberă de areolă mamară în varianta Pitanguy (dacă rezecția implică mai mult de 1.5 kg și poziționarea noii areole depășește 15 cm de la nivelul șanțului submamar).

Evaluarea clinică este foarte importantă pentru stabilirea conduitei chirurgicale. Beneficiile reducerii mamare în aceste cazuri sunt evidente imediat postoperator.

Cuvinte cheie: macromastia, gigantomastia, breast reduction, McKissock, Pitanguy

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INTRODUCTION

What is macromastia? Is this term synonymous with gigantomastia? What is certain at present is that there is no unanimous agreement on the definition of this term. However, all the authors agree that both terms define excess breast weight that exceeds 3% of body weight¹.

There are several definitions of what is considered excessive breast tissue, i.e. the normal mammary gland plus glandular excess of up to 2.5 kilograms. Most plastic surgeons consider excessive breast tissue over 1.5 kilograms.

Other doctors consider macromastia the situation in which the excessive tissue is less than 2.5 kilograms and gigantomastia where the excessive tissue is over 2.5 kilograms^{2,3,7}

Initially, it was thought that macromastia is a very rare condition. In reality, in my practice I found that there are many women who present macromastia or gigantomastia, but few of them go to a plastic surgeon to correct this situation. It is equally true that not all plastic surgeons approach this type of aesthetic and reconstructive interventions due to the long operating time, long recovery period and possible complications. The statistics vary from country to country or geographic region to another and depend on the degree of development of the medical system in the respective area.

Currently, several types of macromastia have been identified: idiopathic or primary (without an identifiable cause), pubertal, gestational, extreme obesity, drug-induced (antibiotics, LH-RH antagonists) or due to immunological causes Thyroid gland diseases (Hashimoto's thyroiditis), systemic lupus erythematosus, myasthenia gravis, chronic arthritis and psoriasis).

The clinical implications of macromastia are very important. Large, heavy and saggy breasts can accentuate the problems caused by obesity by further reducing the woman's ability to exercise. The symptoms of macromastia are chronic pain located in the cervical and thoracic spine, chest pain, abnormal body position, contractures of the paravertebral muscles, pain in the upper limbs, breathing difficulties, sleep disorders, ulcerative lesions in the mammary groove and decreased ability to effort. Taking into account these symptoms, the diagnosis of macromastia is simple to specify only on the basis of the clinical examination. However, it is more difficult to establish the appropriate surgical technique for the case⁷.

In general, large breasts or breast hypertrophy are reasons to apply breast reduction surgical techniques. Several studies have shown that breast reduction generally improves the quality of life.^{4,5,6} This has encouraged many women with macromastia or gigantomastia to go to a plastic surgeon to perform a breast reduction. The technique used to perform this depends on the physical characteristics of the patient and the experience of the surgeons.

Commonly used techniques are superior pedicle, inferior pedicle, double pedicle (Mc Kisson), and partial amputation with free nipple-areolar graft.

The goal of a reduction mammoplasty is to have proportional, youthful-looking breasts with minimal scarring, with the ability to breastfeed and retain normal sensations. This is the ideal, but there are situations in which we cannot achieve all these goals.

MATERIALS AND METHODS

The article presents my personal experience in the surgical treatment of macromastia (gigantomastia) on a number of **364** cases in the interval **1998-2023** in which we practiced breast reduction using two techniques: **modified Mc Kisson** and **breast reduction with free nipple graft** associated with Pitanguy technique.

The choice of one or another of the techniques was made according to the anatomical characteristics of each individual case. I used the modified McKisson technical breast reduction in all cases of patients between 15-45 years of age in which it was necessary to excise an amount of breast tissue of up to 1.5 kilograms and the upper transposition of the areola involved a maximum distance of 13-14 cm in relation with the inframammary groove.

The technique of breast reduction associated with free nipple graft was practiced in patients aged mainly 40-60 years in whom the breast resection required more than 1.5-2 kg and the transposition of the areola would have required more than 15 cm in relation to the submammary groove. The choice of the second technique was made taking into account the consideration that the glandular excision is extended and the length of the dermal pedicle is greater than 15 cm.

From the total of **364** cases of macromastia (gigantomastia), modified McKisson technical breast reduction was practiced in **250** cases and breast reduction with free areola graft in **114** cases. The age of the patients was between **18-65** years. The operative time

was between 3 hours and 4 hours and 30 minutes. All interventions were performed with general anesthesia and require hospitalization for 1-2 days. We had minor complications in 36 cases and they were represented by small areas of skin necrosis (which did not require surgical treatment), patchy necrosis of the breast areola, granulomas and unsightly scars that required minor surgical corrections.

Other complications such as infections, hematomas, postoperative seromas and asymmetries were present in 20 cases and required additional surgical procedures. Most of these complications (75%) occurred in cases solved by the modified McKissock technique.

RESULTS

The expected results after breast reduction in macromastia cases are both functional, aesthetic and psycho-emotional. Breast reduction, also known as reduction mammoplasty, is a surgical procedure to reduce the size and reshape the breasts. Many individuals seek breast reduction for both aesthetic and functional reasons.

Here are some common functional results and benefits associated with breast reduction:

- a. Relief from physical discomfort: back, neck, and shoulder pain. Large breasts can contribute to chronic pain in the upper body. Breast reduction surgery often provides relief from these symptoms by reducing the weight and strain on the upper body.
- b. Headaches: some individuals with large breasts may experience headaches due to the strain on the neck and shoulders. Breast reduction can alleviate this source of tension.
- c. Improved posture: large and heavy breasts can affect posture, leading to slouching or an increased curvature of spine. Breast reduction surgery can help improve posture by reducing the weight and size of the breasts, allowing for a more natural and comfortable body alignment.
- d. Enhanced physical activity: Individuals with large breasts may find it challenging to engage in physical activities or exercise comfortably. Breast reduction can make it easier to participate in sports, fitness routines, and other physical activities without the constraints of heavy breasts.
- e. Clothing fit and comfort: finding well-fitting clothing can be a challenge for individuals with disproportionately large breasts. Breast reduction surgery can lead to a more proportional and balanced breast

size, making it easier to find comfortable and stylish clothing.

- f. Reduced skin irritation: large breasts can cause skin irritation and rashes, especially in the inframammary fold (the area where the breast meets the chest wall). Breast reduction can reduce friction and moisture in this area, decreasing the likelihood of skin issues.
- g. Increased self-confidence: many individuals experience an improvement in self-esteem and body image after breast reduction. Feeling more comfortable in one's body and being able to engage in a wider range of activities can contribute to a positive self-image.

Breast reduction surgery aims not only to address functional issues but also to achieve a balanced and aesthetically pleasing breast shape. Surgeons work to reshape and lift the breasts, providing a more proportionate and natural appearance.

It's important to note that individual experiences with breast reduction can vary, and the specific outcomes depend on factors such as the surgical technique used, the skill of the surgeon, and individual healing processes. Consultation with a qualified plastic surgeon is crucial to discuss personal goals, expectations, and potential risks associated with the procedure.

Aesthetic results that can we achieve after breast reduction in macromastia cases:

- A. Reduction in breast size and proportion
 1. Achieving symmetrical and balanced breasts
 2. Improved body proportions and silhouette
- B. Enhanced breast shape and contour
 1. Reshaping the breast mound
 2. Achieving a more youthful appearance
- C. Improved position and symmetry of the nipple-areolar complex
 1. Addressing ptosis and nipple asymmetry
 2. Achieving natural-looking nipple positioning
- D. Reduction of excess skin and stretch marks
 1. Improving skin quality and texture
 2. Minimizing the appearance of stretch marks
- E. Enhanced breast firmness and upliftment
 1. Addressing breast sagging and laxity
 2. Achieving a more perky and youthful breast appearance

What are the psychological and emotional benefits after breast reduction in macromastia cases?

- A. Boost in self-confidence and body image
- B. Relief from physical discomfort and pain
- C. Improvement in overall quality of life

It's important to note that individual experiences with breast reduction can vary, and the specific outcomes depend on factors such as the surgical technique used, the skill of the surgeon, and individual healing processes. Consultation with a qualified plastic surgeon is crucial to discuss personal goals, expectations, and potential risks associated with the procedure.

DISCUSSION

In all patients, an ultrasound screening was initially carried out and in certain situations, other imaging explorations of the breast were required: mammography, MRI. Blood tests, lung x-ray, cardiological consultation and pre-anesthetic evaluation were mandatory in all situations.

The advantages of using the McKissock breast reduction technique:

1. The double dermo-glandular pedicle (superoinferior pedicle) allows a good vascularization of the areola during its transposition in the new position.⁷



Figure 1. Macromastia. Breast Reduction (Modified McKissock Technique). Before and After



Figure 2. Gigantomastia. Breast Reduction (Free Nipple Graft Associated with Pitanguy Technique). Before and After.

2. Very good exposure of the lateral and medial quadrants, thus facilitating glandular resection

3. Easy mobilization of the pedicle for transposition of the nipple-areola complex.

The modified Mc Kissock technique also associates the fixation of the dermo-glandular pedicle to the pectoral fascia and the lateral and medial quadrants of the breast after its folding and transposition of the areola in the new position. This gives a beautiful and round shape to the breast and prevents the subsequent ptosis of the gland.

I used breast reduction with free nipple transposition associated with the Pitanguy technique in all cases of gigantomastia where more than 1,5-2 kilograms of breast tissue needs to be excised. I use also this technique in cases where more than 15 cm I need to move up the areola in the new position.

The motivation in using this technique is:

1. Vascularization of the areola can be compromised in the case of a massive resection of glandular tissue and by transposition of the areola more than 15 cm.

2. The loss of the lactation function is easily accept-

ed by the patients, especially if they fall within the age range of 40-65 years.⁷

3. It is no limit the breast volume that can be removed.⁷

4. The blood loss is minimum and the operating time is less comparative than other breast reduction technique.

5. The cosmetic result of breast shape is good and contour equals other results after nipple transposition.

While breast reduction surgery often provides relief and improves the quality of life for those with macromastia, like any surgical procedure, it is not without potential complications. Complications often encountered in breast reduction for macromastia are:

1. Infection: Infections can occur postoperatively, leading to redness, swelling, and pain. Surgical site infections are typically treated with antibiotics, but severe cases may require additional interventions.

2. Hematoma and Seroma: Hematomas and seromas involve the accumulation of blood or fluid at the surgical site. While these can often be drained in a minor procedure, larger collections may necessitate a return to the operating room.

3. Delayed wound healing: Some patients may experience delayed wound healing, particularly if they have underlying medical conditions or if there is tension on the incisions. Proper postoperative care and adherence to the surgeon's instructions can help minimize this risk.

4. Scarring: scarring is an inevitable outcome of any surgical procedure. The extent of scarring varies among individuals, and while surgeons employ techniques to minimize visible scarring, individual healing responses can influence the outcome.

5. Nipple and areola sensation changes: temporary or permanent changes in nipple and areola sensation can occur. Some individuals may experience increased sensitivity, while others may have reduced sensation. These changes are typically a result of nerve damage during surgery.

6. Breast asymmetry: Achieving perfect symmetry is challenging, and some degree of breast asymmetry may persist after surgery. Skilled surgeons strive to minimize asymmetry, but complete symmetry is not always achievable.

7. Loss of breastfeeding ability: While efforts are made to preserve the milk ducts and nerves during surgery, there is a risk of impaired breastfeeding ability. It's essential for individuals considering breast reduction to discuss this concern with their surgeon.

8. Anesthesia risks: any surgery involving anesthesia carries inherent risks. Complications related to anesthesia may include respiratory issues, allergic reactions, or adverse reactions to medications.

It is important to know how can we prevent complications and adverse reactions in breast surgery for macromastia? A few things we can do:

1. Preoperative evaluation: Thorough preoperative evaluations, including a comprehensive medical history and physical examination, help identify and manage potential risk factors.

2. Skillful Surgical Technique: Surgeons with expertise in breast reduction techniques can minimize complications. Techniques such as the vertical or short scar method may reduce the risk of certain complications.

3. Postoperative care: strict adherence to postoperative care instructions, including wound care, activity restrictions, and follow-up appointments, is crucial for minimizing complications.

4. Patients education: educating patients about the potential risks and complications, as well as realistic expectations, allows for informed decision-making and better postoperative satisfaction.

CONCLUSION

Breast reduction surgery, also known as reduction mammoplasty, is a surgical procedure aimed at reducing the size of the breasts. This procedure is commonly performed to alleviate the physical discomfort and emotional distress caused by macromastia, a condition characterized by excessively large breasts. The two breast reduction techniques (the modified McKissock and the free nipple graft) I mentioned above in this article were the procedures of choice in my practice for the surgical treatment of macromastia.

Breast reduction surgery offers a transformative solution for individuals suffering from macromastia, bringing relief from physical discomfort and improving overall well-being. By understanding the expected results, potential risks, and postoperative care requirements, patients can make informed decisions and achieve optimal outcomes. Consulting with a qualified plastic surgeon and embracing the recovery process with patience and dedication will pave the way for a successful breast reduction journey, empowering individuals to embrace their new, more comfortable selves.

Breast reduction surgery offers significant aesthetic results for individuals suffering from macromastia.

Beyond reducing breast size and alleviating physical discomfort, this procedure enhances the overall appearance and symmetry of the breasts. Patients can expect improved breast shape and contour, reduction of excess skin and stretch marks, as well as enhanced nipple position and firmness.

The psychological and emotional benefits of breast reduction are equally profound, boosting self-confidence and improving overall quality of life. However, it is crucial to carefully consider the risks and complications associated with the procedure and choose a skilled plastic surgeon to ensure a safe and successful outcome. By undergoing breast reduction surgery, individuals with macromastia can achieve not only physical relief but also aesthetic transformation, leading to greater comfort, confidence, and satisfaction with their bodies.

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