

Avoiding Complications in Gigantomastia



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KEYWORDS

• Gigantomastia • Complications • Surgical breast reduction

KEY POINTS

- Gigantomastia represents extreme hypertrophy of the female breast.
- Although there is no universally accepted definition, the amount of tissue resected during reduction mammoplasty is the most widely used description, with threshold ranges reported between 1000 g and 2000 g per breast.
- Gigantomastia is a complicated problem that presents unique challenges. Understanding the cause of the disease and the necessary preoperative workup will minimize complications from the operation.
- There are multiple surgical approaches for correcting gigantomastia. Although there is not one best approach, many standard approaches can be adapted with an understanding of how to maintain blood supply to the nipple/areolar complex.
- As a general guideline, a pedicle width (when pedicles are used) of at least 8 cm should be maintained with a pedicle length no more than twice that of the width.

INTRODUCTION

Gigantomastia is a disabling condition for patients and presents unique challenges to the plastic surgeon. Excessive breast tissue is associated with pain in the back, neck, and shoulders. These patients often have intertrigo and can have derangements in body image perception, quality of life, and physical functioning.¹ To this day, the definition of this condition remains unsettled. There are multiple causes, the most common of which is idiopathic.^{2,3} Presentation can occur throughout different phases of life, and treatment often begins with nonoperative measures; however, the most effective way to relieve symptoms is surgical breast reduction.^{4,5} Because of the large amount of tissue removed, surgeons can encounter different intraoperative and postoperative complications. By understanding this disease process and these complications, surgeons can attempt to minimize their occurrences. The authors present

an overview of the cause, preoperative evaluation, techniques, and outcomes. Additionally, they present outcomes data from their center on 40 patients.

DEFINITION

The amount of tissue resected during a reduction mammoplasty is often used as a marker and definition for gigantomastia. However, there is wide disagreement about how much excised tissue weight constitutes gigantomastia, with ranges between 1000 g per breast and as high as 2000 g per breast reported in the literature.⁶⁻⁹ Definitions focusing on body mass index (BMI), brassiere size, and breast size also exist. In an attempt to standardize the categorization of gigantomastia, Dancey and colleagues³ proposed a new classification system based on cause, age, BMI, and pregnancy status (**Table 1**).

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Clin Plastic Surg 43 (2016) 429–439

<http://dx.doi.org/10.1016/j.cps.2015.12.006>

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Table 1
Dancey classification of gigantomastia

Group	Characteristics
1a	Idiopathic, spontaneous condition of excessive breast growth in patients with a BMI >30
1b	Idiopathic, spontaneous condition of excessive breast growth in patients with a BMI <30
2a	Excessive breast growth related to an imbalance of endogenous hormone production occurring during puberty
2b	Excessive breast growth related to an imbalance of endogenous hormone production occurring during pregnancy
3	Excessive breast growth induced by a pharmacologic agent

Another possibly more objective definition from Dafydd and colleagues¹⁰ proposes using excessive breast tissue that contributes 3% or more to patients' total body weight. For the purposes of the data presented from the authors' hospital in this article, they chose 1500 g per breast as their benchmark resection weight and definition of gigantomastia.

CAUSES

There are several different causes for gigantomastia. The most common cause is idiopathic^{2,3} (Box 1). This condition can also be seen in

Box 1 Etiology of gigantomastia

Idiopathic
 Pregnancy induced
 Puberty induced
 Pharmacologic
 Penicillamine
 Neohetazone
 Cyclosporine
 Estrogen
 Bucillamine
 Autoimmune
 Chronic arthritis
 Hashimoto thyroiditis
 Myasthenia gravis
 Psoriasis

association with pregnancy and puberty. Pregnancy-induced gigantomastia occurs with an incidence of approximately 1 in 65,000 pregnancies. Characteristic features of puberty- and pregnancy-induced gigantomastia include glandular hyperplasia, hyperplasia of the stromal elements, and fibrosis.⁴ There are also reports of gigantomastia developing as a result of medication side effects and autoimmune disease.^{2,3,11}

ANATOMY

Gross¹² (Fig. 1)

- There are certain key features that are present in patients with macromastia and gigantomastia. These features include severe ptosis, increased sternal notch to nipple distance, increased nipple to inframammary fold (IMF) distance, increased areolar size, and a broadened base. Understanding the vascular supply to the nipple-areola complex (NAC) is imperative for a safe and effective operation. The NAC is supplied by the internal mammary artery, lateral thoracic artery at the level of the fourth intercostal artery, and the anterior intercostal artery at the level of the midfourth and fifth intercostal spaces.

Histology¹³

- There are also histologic changes that are present in gigantomastia, which can differ with the varying causes. Idiopathic gigantomastia demonstrates predominantly fibroglandular tissue, lymphocytic infiltration, and venostasis. The hormonal subtype shows stromal, ductal, and glandular hyperplasia with dilatation. In addition, the histology shows collagenous fibrosis, cellular myxoid hyperplasia, ductal proliferation with cystic degeneration, edema, lymphatic dilatation, and fibroadenomas with increased estrogen and progesterone. Interestingly, drug-induced gigantomastia does not show any significant histologic changes.³

EVALUATION

All women presenting with severe breast hypertrophy require a *complete* history and physical examination. A thorough weight history should be obtained, including weight loss surgery, lowest/highest/current weight, and how breast size has changed with weight. In addition, history of any breast abnormalities, including masses and/or prior surgeries, should be obtained.^{1,14} Breast-feeding history should be discussed as well as any future plans for breastfeeding, which could be compromised by surgical intervention. Family

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