

Surgical Management of Gestational Gigantomastia: A Case Report Highlighting Therapeutic Intervention

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Summary: Gigantomastia is an exceedingly rare condition characterized by extraordinary growth of breasts during pregnancy, and its underlying etiology remains elusive. Although surgical intervention is the primary treatment modality, there have been emerging prospects for utilizing adjunctive medical therapies, such as bromocriptine, to address this challenging condition. Herein, we report the case of a 26-year-old woman who experienced abrupt and asymmetric bilateral breast enlargement commencing in the second month of her pregnancy. Remarkably, this enlargement persisted for an extended duration of 3 years. Despite the absence of prior medical therapy involving bromocriptine or other interventions, the patient ultimately underwent a simple mastectomy coupled with nipple-areola complex reconstruction. Although bromocriptine treatment holds potential benefits, its availability may vary in different healthcare settings. Therefore, the consideration of surgical management as an alternative approach becomes crucial, particularly when bromocriptine is not accessible or proves ineffective. This approach ensures the appropriate management of gestational gigantomastia, with the choice of treatment tailored to the individual patient's needs and resource availability. (*Plast Reconstr Surg Glob Open* 2025; 13:e6446; doi: [10.1097/GOX.0000000000006446](https://doi.org/10.1097/GOX.0000000000006446); Published online 21 January 2025.)

Gigantomastia is defined as excess breast tissue that accounts for more than 3% of a patient's overall body weight¹ or breast overgrowth requiring a weight reduction of more than 1500 g per breast.² Lewison described these typical cases in beautiful syntax, "True gestational gigantomastia begins quickly during pregnancy, regresses after delivery, and reappears with consecutive pregnancies."³ Gigantomastia has subtypes: (1) juvenile gigantomastia (virginal hypertrophy) related to puberty, (2) gravid (gestational) gigantomastia in pregnancy, (3) drug-induced gigantomastia from certain medications, and (4) idiopathic gigantomastia with no clear cause. It can occur symmetrically or unilaterally, with unilateral cases being far less common.^{4,5}

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Although only a few full spontaneous resolutions after pregnancy have been documented in the literature, most cases require either medical or surgical intervention. We report a case of a 26-year-old mother with bilateral asymmetric breast enlargement lasting 3 years.

CASE REPORT

A 26-year-old primiparous mother presented with excessive breast enlargement during pregnancy. She deferred surgical management and delivered at term. Sadly, her newborn daughter died. No prior breast issues or family history were reported. The patient had significantly enlarged breasts (25 × 30 cm), with the right breast larger (Fig. 1). The distance from the sternal notch to the nipple was 30 cm on the left side and 32 cm on the right side. The measurement from the nipple to the base was 10 cm on the left and 12 cm on the opposite side. The distance from the base to the inframammary fold was consistent at 3.5 cm on the left side and 4 cm on the right side. Bilateral simple mastectomies were performed without nipple preservation (Fig. 2). Nipple-areola complex reconstruction was done using full-thickness skin graft, and the patient had

Disclosure statements are at the end of this article, following the correspondence information.

a successful recovery and was satisfied with the results (Figs. 3, 4).

DISCUSSION

The breast has fat, stroma, and glandular tissue. Pregnancy causes glandular tissue hyperplasia for increased milk production, mediated by hormonal interactions.^{4,5} The dramatic increase in the estrogen plasma level during pregnancy seems to be the main contributor to triggering gestational gigantomastia.⁶ Microscopic analysis of breast tissue obtained from patients with gestational gigantomastia typically reveals findings consistent with normal breast tissue changes during pregnancy. These findings often include glandular hyperplasia, excessive growth of connective tissue,

and tissue fibrosis. These histopathologic characteristics align with the observations made in our patient's case as well.

Gestational gigantomastia is a rare clinical syndrome that causes dramatic breast development during pregnancy. Palmuth wrote about the first case of gestational gigantomastia in 1648. It was not reported in the English literature until Simpson did so in 1920, some centuries later.^{7,8} Approximately 100 cases have been documented in the literature afterward. Between the years 1935–1960 and 1989–2009, its incidence has been estimated to be between 1 in 28,000 and 1 in 100,000 pregnancies. Usually affecting both breasts as in our patient, gigantism can also occur unilaterally and, in certain situations, during the last pregnancy.¹

No consensus exists on defining gestational gigantomastia. The criteria proposed involve the amount of tissue removed during surgery, but retrospective diagnosis has limitations. Authors provide different weight estimates, ranging from 0.8 to 2 kg,⁴ similar to our patient's case. The highest recorded amount of breast tissue ever removed was an astounding 27.5 kg per breast.⁷

Gestational gigantomastia, excessive breast growth during pregnancy, can complicate pregnancies. Our case report focuses on a primiparous woman, aiming to enhance understanding and management of this condition. Ethnically, White women are more affected than Black women (9:4).⁶ Fetal gender and maternal age do not seem to cause significant risk. Paternal risk factors have yet to be identified.⁴

Gigantomastia's cause is unknown, but hormone-related factors such as excessive sensitivity or overproduction of



Fig. 1. Preoperative anteroposterior view of the patient.



Fig. 2. Intraoperative picture showing the bilaterally excised breast tissue.



Fig. 3. Third month postoperative after bilateral simple mastectomy. Anteroposterior view in the sitting position.



Fig. 4. Third month postoperative after bilateral simple mastectomy. Anteroposterior view in the supine position.

hormones such as prolactin, human placental lactogen, human chorionic gonadotrophin, and estrogen may play a role.⁶ A second possible explanation for gestational gigantomastia is the pregnancy-related increase in serum prolactin levels.⁵ Bromocriptine, a dopamine agonist, effectively treats gestational gigantomastia by blocking prolactin production. It can halt or regress breast enlargement. A case of gestational gigantomastia responded to bromocriptine treatment despite normal prolactin levels according to Agarwal et al.⁴ In contrast, another case with elevated prolactin levels did not improve with bromocriptine as

reported by El Boghdadly et al.⁹ In our patient, serum hormonal studies were done and all were normal, and the patient was not started on bromocriptine therapy as it was not available.

Even though the initial clinical manifestation of non-Hodgkin lymphoma has been gestational gigantomastia in some rare scenarios,¹⁰ in this condition, a healthy pregnant woman may experience a gradual bilateral enormous breast growth, leading to significant physical and emotional distress. The breasts become tight, hard, edematous, and exhibit prominent subcutaneous veins. Complications such as necrosis, ulceration, infection, and hemorrhage may arise due to excessive growth and compromised skin vascularity. After delivery, the breasts typically shrink back to their prepregnancy size.⁶ Our patient presented with typical gigantomastia symptoms, which persisted after delivery. Differential diagnoses such as phylloides tumor, fibroadenoma, and lymphomas were ruled out. Simple mastectomy is recommended over breast reduction to reduce recurrence risk, especially for future pregnancies. Therefore, a complete removal of breast tissue with fat tissue left behind coupled with nipple-areolar reconstruction was done a year after her delivery, and the patient expressed satisfaction with the overall results. We highlight a distinctive aspect of our approach by directly opting for simple mastectomy and subsequent nipple-areola complex reconstruction as the first-line management strategy even if in developing nations, where the value of breastfeeding for newborns cannot be overstated, the issue would be considerably worse,^{4,8,11} as recurrence was the main complication to prevent in future pregnancies.

This decision was influenced by the unavailability of medical therapy in our setting, adding value to the literature by showcasing an alternative approach in resource-constrained environments. In resource-limited settings such as Ethiopia, simple mastectomy may be preferred over breast reduction for gigantomastia due to limited surgical resources, reduced recurrence risk, immediate symptom relief, and healthcare access challenges. This approach prioritizes patient safety and practicality, aligning with cultural preferences and available expertise.

CONCLUSIONS

In conclusion, gestational gigantomastia, characterized by excessive breast growth during pregnancy, requires surgical intervention. This case report emphasizes the importance of close monitoring and timely surgical intervention to provide optimal outcomes, and relief for affected individuals and address issues of recurrences as well.

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DISCLOSURE

The authors have no financial interest to declare in relation to the content of this article.

PATIENT CONSENT

Written informed consent was obtained from the patient for the publication of her case, including the use of relevant clinical information and accompanying images. The patient's identity has been anonymized to ensure confidentiality.

ETHICAL APPROVAL

All ethical issues are taken into consideration.

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