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Case report of a large lactating adenoma with rapid antepartum enlargement

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ABSTRACT

INTRODUCTION: Lactating adenomas are rare benign breast tumors, most commonly found during pregnancy and lactation. They are usually slow growing and smaller than 3 cm in maximal diameter. Rare cases of giant lactating adenomas and rapid postpartum enlargement have been reported, but none have shown a giant lactating adenoma with rapid antepartum enlargement or antepartum surgical management.
CASE PRESENTATION: A 27 year-old pregnant woman presented at 28 weeks gestation with a 5 cm left breast mass that doubled to 10 cm within six weeks and was increasingly tender. Histopathologic examination of a core biopsy was consistent with a lactating adenoma. The mass was excised at 31 weeks gestation with no complications.
DISCUSSION: Lactating adenomas are common during pregnancy and need to be distinguished from breast cancer, a commonly diagnosed malignancy in pregnancy. They can be distinguished from carcinoma and other benign tumors like fibroadenoma under histopathologic examination. Rare cases of giant lactating adenomas with rapid postpartum enlargement that were managed by postpartum excision have been reported. However, a giant lactating adenoma with rapid antepartum enlargement, managed by excision in the third trimester of pregnancy, has not been reported.
CONCLUSION: Excision of a large, rapidly enlarging lactating adenoma in the third trimester of pregnancy is a safe and feasible management option.

1. Introduction

Lactating adenomas are rare benign breast tumors commonly found during pregnancy and lactation in young women [1–3]. Lactating adenomas are usually slow growing, well-demarcated, and often smaller than 3 cm in maximal diameter [2,3]. However, rare cases of giant lactating adenomas with rapid postpartum enlargement and diameters up to 25 cm have been reportedv [1–3]. This is a case of lactating adenoma with rapid antepartum enlargement in a 27 year-old pregnant woman.

2. Presentation of case

A 27 year-old gradiva 2 para 1 woman at 28 weeks gestation initially presented with a palpable, tender mass in her left breast that had increased in size over a short interval. Ultrasound of the left breast showed a 5.0 × 4.0 × 1.9 cm hypoechoic, well-circumscribed mass at the 6 o'clock position, with Doppler flow within the mass. As it was unclear whether the mass was a fibroadenoma or lactating adenoma based on radiology interpretation, an ultrasound-guided core biopsy was recommended to confirm the pathology. Pathology results from an ultrasound-guided core needle biopsy were consistent with lactating adenoma.

The patient noted substantial growth of the breast mass over the next six weeks, with associated increased breast tenderness. A second ultrasound revealed an increase in mass size to 10.0 × 8.0 × 4.3 cm, with Doppler flow within the mass (Fig. 1). On exam, there was significant asymmetry in breast size and left inframammary crease displacement, without axillary adenopathy (Fig. 2). Given rapid doubling in mass size within six weeks and progression of symptoms, the patient underwent palpation-guided excision of the lesion at 31 weeks gestation under general anesthesia. Special considerations regarding intraoperative positioning of the patient included placing a right wedge to decrease inferior vena cava compression. There were no perioperative complications for both the patient and the fetus. Surgical excision was performed via a 10 cm inframammary incision with enucleation of the mass. The gross specimen was lobulated and well-circumscribed, measuring 11.0 × 8.5 × 5.5 cm (Fig. 3). Histopathological examination was consistent with a lactating adenoma. Post-operative course

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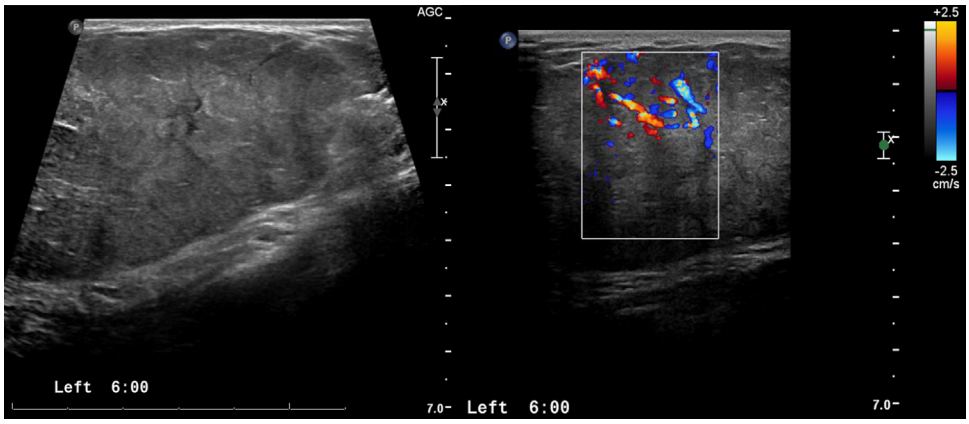

Fig. 1. Ultrasound image of 10.0 × 8.0 × 4.3 cm left breast mass. Note the Doppler flow within the mass.

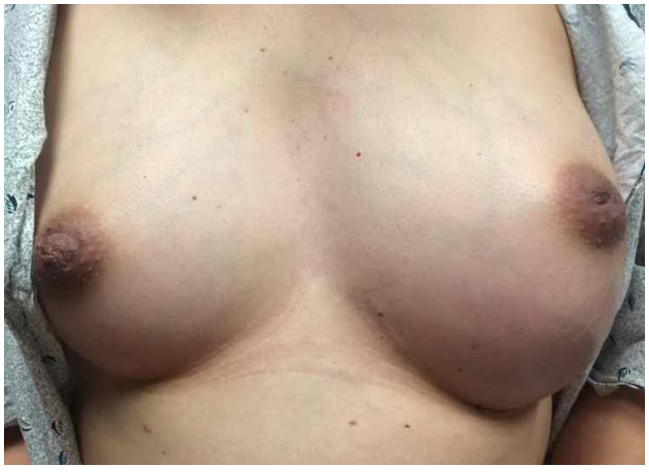

Fig. 2. Preoperative breasts. Note the asymmetry and 11.0 × 8.5 × 5.5 cm mass in left breast.

Fig. 3. Gross specimen of rapidly enlarging left breast mass excised at 31 weeks gestation. Note the smooth, lobulated surface typical of lactating adenomas.

was uncomplicated with reassuring third trimester prenatal exam three days after surgery.

3. Discussion

Lactating adenomas account for majority of breast masses during pregnancy despite being uncommon benign breast tumors [2,4]. They need to be distinguished from carcinoma, as breast cancer is the second most common malignancy in pregnancy (1:3000–10,000 pregnancies), preceded by Hodgkin's disease (1:1000–3000 pregnancies) and possibly malignant melanoma (real incidence is unknown, though 2.8:1000 pregnancies has been reported in 1969) [5]. Pregnant women are also at higher risk of presenting with more advanced disease, compared to their non-pregnant counterparts, due to difficulty in detecting small masses with natural pregnancy-associated breast engorgement and tenderness [5].

Lactating adenomas may originate from de novo lesions or pre-existing adenomas [6]. Tubular and lactating adenomas may be two ends of a spectrum, as both show predominantly epithelial and minimal stromal involvement, with lactating adenomas also characterized by pregnancy-associated secretory changes [7]. On the other hand, fibroadenoma with secretory hyperplasia is distinguished from lactating adenoma by the presence of characteristic stroma [1,6].

Although the diagnosis of lactating adenoma is most common during pregnancy, giant lactating adenomas (greater than 5 cm) and rapid antepartum enlargement are rare. Most lactating adenomas are less than 3 cm, with two largest reported to be 25 cm and 16 cm [1,2]. Lactating adenomas have shown rapid *postpartum* growth, with one case involving necrosis [2,3] However, such high rates of antepartum enlargement have not been reported. In this case, rapid growth occurred in the third trimester, with a two-fold increase within six weeks.

Collins et al. recommended antepartum biopsy for women presenting with breast mass in the first or second trimesters, postpartum excision for masses presenting in late third trimester, and fine needle aspiration biopsy as an alternative for masses presenting in early third trimester [8]. Bromocriptine, a dopamine agonist, could reduce the size of lactating adenomas, but should be balanced with the patient's desire to breastfeed [2,9]. As lactating adenomas often regress spontaneously after pregnancy and lactation, some have been managed by observation through pregnancy and postpartum excision as needed [9]. In this case, the giant lactating adenoma was removed during pregnancy because it increased rapidly in size and became increasingly tender.

In summary, we report a case of giant lactating adenoma with rapid enlargement in the third trimester of pregnancy. Large size and rapid growth of a lactating adenoma could be mistaken for malignancy. Pre-operative diagnosis with histopathologic examination is important given the benign nature and excellent prognosis

of lactating adenomas. If possible, surgery is delayed until postpartum. However, with rapid antepartum growth and compressive symptom progression, excision of a large, rapidly enlarging lactating adenoma in the third trimester of pregnancy is a safe and feasible alternative.

Written consent was obtained from the patient for publication of this case report and accompanying images.

Conflicts of interest

The authors have no conflicts of interest to report.

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Ethical approval

University of Pittsburgh, IRB oversight was not required for case reports including less than three patients.

Consent

Informed consent for publication of this case report has been obtained from the patient.

Author contribution

Emilia Diego, M.D.—case report concept, data collection and interpretation, manuscript revision.

Cindy Teng, B.A.—data collection and interpretation, writing the manuscript.

Guarantor

Emilia Diego, M.D.

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