



# Giant Lactating Adenoma of the Breast: Safety and Benefits of Surgical Removal

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**Abstract:** *Background and aim:* Lactating adenoma is one of the benign tumors of breast that is frequently associated with pregnancy and lactation. Its size ranged from 1 cm to 4 cm; however, rare cases with rapid postpartum enlargement up to 25 cm have been reported. Surgical removal of small lactating adenoma usually postponed till weaning, waiting for spontaneous regression and to avoid wound complications. The aim of this study was to assess the safety of surgical removal of giant (more than 5 cm) lactating adenomas during lactation, regarding wound complication specially milk fistula, with maintenance of breast feeding and its benefit. *Patients and methods:* The present study was conducted on 12 patients with giant lactating breast adenoma in Surgical Oncology unit at General Surgery Department, Tanta University Hospital from March 2013 to July 2016. The patients included in the study were lactating, had solitary breast mass more than 5 cm in size, had subjected to surgical removal through a cosmetic circumareolar or curvilinear incision. The patients resumed breast feeding within 24 hours, then followed-up for wound haematoma, wound seroma, wound infection, milk fistula, psychic and pain relief. *Results:* The patients' age ranged from 18 to 38 years with a mean age of  $27 \pm 3.6$  years. In all patients; the chief complaint was cosmetically discomforting mass, asymmetry between the two breasts and fear of malignancy, pain was a presenting symptom in 6 patients. The size of the adenoma by ultrasound ranged from 8-18 cm with a mean of 12.6 cm. No wound complications were recorded. *Conclusion:* Giant lactating adenoma could be safely removed during lactation to alleviate pain, heaviness, and anxiety, to rule out malignancy or coexisting carcinoma with no wound complication, no milk fistula and good aesthetic outcome with maintenance of the breast feeding and its benefits.

**Keywords:** Giant, Lactating Adenoma, Breast, Milk Fistula

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## 1. Introduction

Lactating adenoma is one of the pathological, benign tumors of breast that is frequently associated with pregnancy and lactation. It can occur in any trimester but are common in third trimester of pregnancy and during lactation. They are common in primiparous women in the second or third decade [1, 2].

Clinically, it presents itself as a palpable mass, from 1 cm to 4 cm diameter with an average of 2 cm, however, rare cases of giant lactating adenomas with rapid postpartum enlargement and diameters up to 25 cm have been reported. It is painless, well-defined, mobile and firm in consistency,

most often in the outer part of the breast. There is usually no axillary lymphadenopathy, or nipple discharge, with a healthy overlying skin [3, 4].

Histologically, lactating adenoma is not surrounded by a capsule; it is formed by a lobules proliferation separated by thin connective vascular septations. The alveolar lumen is filled with an abundant protein material with fat and colostrums and it is lined by cuboidal epithelial cells with large vacuolated cytoplasm [4, 5].

Ultrasound is the examination of choice. Usually lactating adenoma appears as a homogeneously hypoechoic mass with smooth lobulated edges. Ultrasound guided biopsy is preferable to target solid portions of the mass while avoiding liquid parts. When the benign nature is confirmed by biopsy,

a clinical and ultrasonographic monitoring is recommended waiting for spontaneous regression. Surgical resection indicated for tumor that large or rapidly increase in size, aesthetic discomfort and suspicious of malignancy [4, 6].

Lactating adenomas may develop as a de novo lesion, it is characterized as a true or pure adenoma, being composed primarily of epithelial cells with only scant, if any, stromal components and differ from other adenomatous lesions, including fibroadenomas, which are composed of prominent stromal elements. Alternatively, lactating adenomas may result from adenomatous or lactational transformation of preexisting lesions, such as fibroadenomas, tubular adenomas, or hamartomas, which undergo lactational changes under hormonal influences [7, 8, 9].

The differential diagnosis of lactating adenoma includes other benign breast lesions such as cyst, fibroadenoma, galactocele and abscess, as well as phyllodes tumour and breast carcinoma [3].

## 2. Patients and Methods

The present study was conducted on 12 patients with giant lactating breast adenoma in Surgical Oncology unit at General Surgery Department, Tanta University Hospital from March 2013 to July 2016. The patients included in the study were lactating, had solitary breast mass more than 5 cm in maximum diameter (ultrasonographically determined).

Every patient was subjected to: history taking with special emphasis on the presenting symptoms including; pain, heaviness, mass, aesthetic discomfort or anxiety about the possibility of malignancy and the duration of lactation, general and local breast examination (figure 1) and investigations that include: Complete blood picture, liver function tests, renal function tests, blood glucose estimation, breast ultrasonography (figure 2) and fine needle aspiration cytology (FNAC). Patients with small (less than 5 cm), multiple lesions, and malignant lesions were excluded from the study.

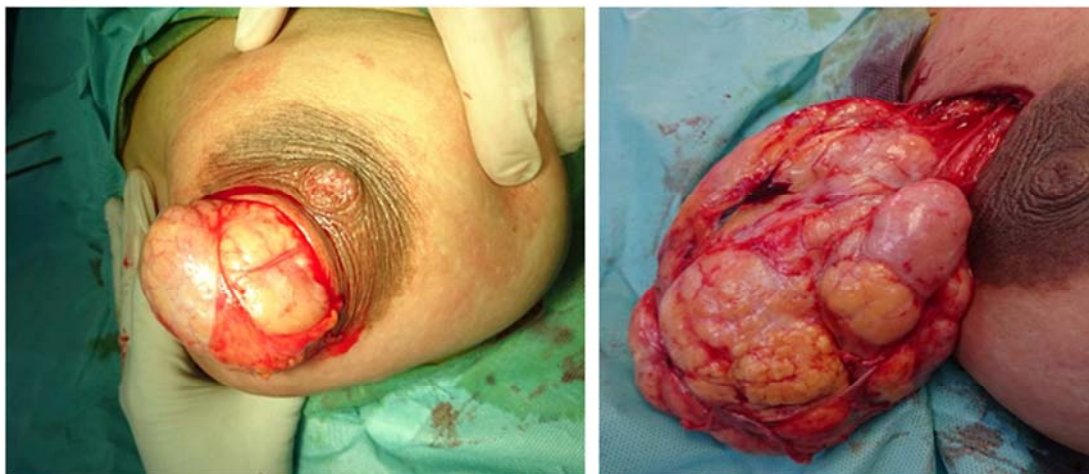


**Figure 1.** Preoperative photograph in lactating patient showing the asymmetry and large mass in the right breast.



**Figure 2.** Breast ultrasonography in lactating patient showing hypoechoic mass measured 18×14cm suggesting its benign nature (Giant lactating adenoma).

Prophylactic intravenous antibiotic (combination of Amoxicillin and Clavulinic acid) was given 1 hour before the operation. Under general anesthesia, the patients had subjected to surgical removal of the adenoma through a cosmetic circumareolar or curvilinear incision and the wound closed without drain (figure 3-5).

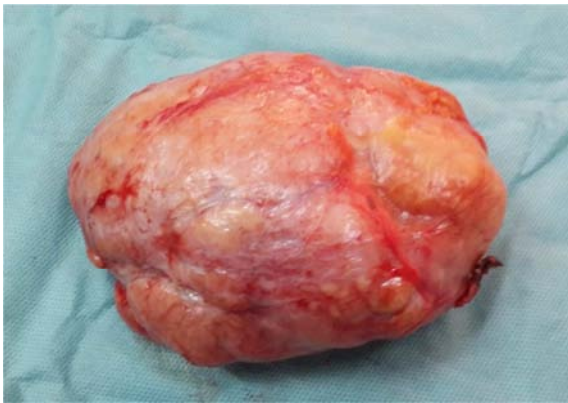


**Figure 3.** An operative photographs showing the giant lactating adenoma removed through circumareolar incision.





**Figure 4.** An operative photograph showing the surgical specimen of a smooth, lobulated, yellowish giant lactating adenoma measured 16×13cm.



**Figure 5.** An operative photograph showing the surgical specimen of a smooth, lobulated, yellowish giant lactating adenoma measured 18×14 cm.

The patients resumed breast feeding within 24 hours and discharged from the hospital in the same day. In the following 10 days; the patients were followed-up for wound haematoma, wound seroma, wound infection, milk fistula, psychic and pain relief, then followed-up monthly for 3 months.

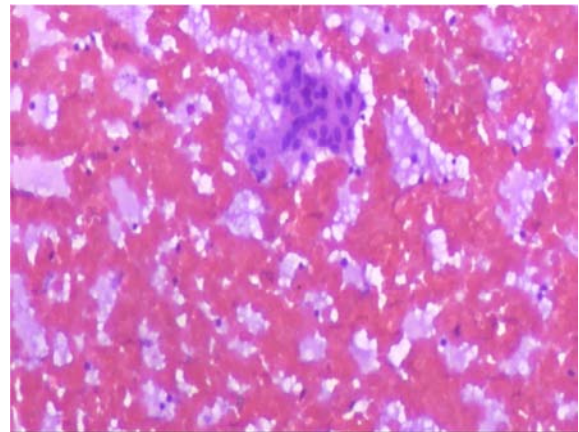
A written informed consent had been obtained from every patient included in the study after explanation of the nature of the procedure and possible complications. The study was approved by Tanta Faculty of Medicine ethical committee.

### 3. Results

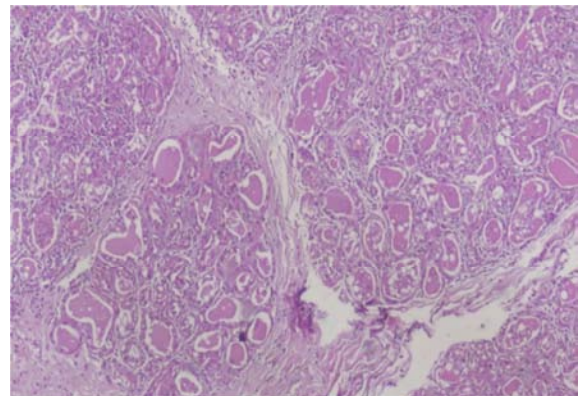
The present study comprised 12 lactating patients. The patients' age ranged from 18 to 38 years with a mean age of  $27 \pm 3.6$  years. Regarding the duration of lactation; 3 patients presented within the first 3 months, 5 patients presented after 6 months and 4 patients presented after one year. In all patients; the chief complaint was heaviness, cosmetically discomforting mass, asymmetry between the two breasts and fear of malignancy or transmission of malignancy to the baby (according to patients believe), pain was a presenting symptom in 6 patients.

In the present study; the size of the adenoma by ultrasound ranged from 8 -18 cm with a mean of 12.6 cm. In all patients;

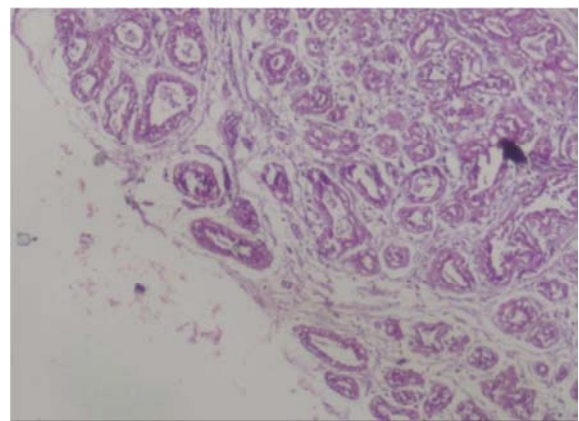
the preoperative pathology of the mass by FNAC revealed small clusters of epithelial cells having a secretory type of cytoplasm and some larger epithelial groups with nuclear pleomorphism, prominent irregular nucleoli, and abundant vacuolated cytoplasm with no malignant cells, consistent with its benign nature suggesting lactating adenoma (figure 6). The postoperative pathology was lactating adenoma showing lobulations, secretions and cystic changes with no malignancy (figure 7 & 8).



**Figure 6.** FNAC of Lactating adenoma showed small cluster of epithelial cells having secretory type of cells with oncocytic cytoplasm [H&E X200].



**Figure 7.** A histopathology of lactating adenoma showing lobulation, secretions and oncocytic changes [H&E X200].



**Figure 8.** A histopathology of lactating adenoma showing cystic changes [H&E X200].

The patients discharged from the hospital in the same day with uneventful postoperative course. No wound hematoma, no wound seroma, no wound infection or milk fistula was recorded during the follow-up period, with alleviation of pain, anxiety and good aesthetic outcome (figure 9).



**Figure 9.** A photograph; 10 days postoperative showing a healthy scar; no wound complication with marked reduction of the breast size.

## 4. Discussion

Lactating adenoma is a benign tumor of breast typically occurs during lactation or the third trimester of pregnancy which usually present as painless, well circumscribed, palpable and mobile breast lesions. Lactating adenoma is not associated with the increased risk of breast cancer but there are some reports of co-incidence with breast carcinoma in the literature [10, 11].

A specific feature of these tumors is regression after cessation of breast feeding, but when the tumor is large or increased size, or there is radiological or cytological suspicion of malignancy; excision is recommended [11, 12].

Mammography is not recommended during pregnancy and lactation due to increased size and density of the breast and radiation hazards to the fetus, except in the cases of strong suspicion of malignancy, in these cases the breasts should be evacuate out of milk completely [13].

Ultrasound is a safe and accurate diagnostic tool of a breast lump during pregnancy and lactation. Sonographically, Lactating adenomas are homogeneously hypoechoic with posterior acoustic enhancement. Magnetic Resonance Imaging may play an important role in the diagnostic evaluation and better definition of a breast solid lesion in the postpartum period and during lactation [11, 14].

Physiological changes that occur during pregnancy and lactation, including cellular atypia, fibroglandular tissue growth and increase in vessels and ducts may increase the likelihood of false positive report of malignancy by FNAC [12].

Core needle biopsy (CNB) during pregnancy and lactation may increase risk of bleeding (due to hypervascularity of the breast), infection (due to dilation of the milk ducts) and milk fistula. For this reason, most surgeons postpone biopsy until the completion of this period. However no imaging modality

is specific for diagnosis of breast adenoma. For this reason tissue diagnosis is recommended to evaluate palpable breast masses to exclude malignancy, which had a poor outcome in this period [15, 16, 17].

Traditionally; surgeons postpone surgical removal of lactating adenoma till weaning to avoid wound complications specially milk fistula or alternatively they give bromocriptine for shrinking of the adenoma to facilitate surgical removal, but deprive the babies from the benefit of breast feeding [18].

The present study comprised 12 lactating patients who subjected to surgical removal of the giant adenoma without cessation of lactation. The patients' age ranged from 18 to 38 years with a mean age of  $27 \pm 3.6$  years. In all patients; the main complaint was cosmetically discomforting mass, heaviness, asymmetry between the two breasts and fear of malignancy or transmission of malignancy to the baby, pain was a presenting symptom in 6 patients. The patients resumed breast feeding within 24 hours and discharged from the hospital in the same day with uneventful postoperative course.

## 5. Conclusion

Giant lactating adenoma could be safely removed during lactation to alleviate pain, heaviness, and anxiety, to rule out malignancy or coexisting carcinoma with no wound complication, no milk fistula with good aesthetic outcome, at the same time maintaining the breast feeding with its benefit for the babies and mothers.

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