



Case Report

# Lactating adenoma of the breast: A case report

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## Abstract

Lactating adenomas are rare benign tumors of breast, frequently associated with pregnancy and lactation. They are common in the third trimester of pregnancy during second and third decade. They present similarly as other benign lesions of breast and differentiation from them preoperatively is difficult both clinically and radiologically. It is characterised by typical changes of secretory epithelium leading to formation of a well-differentiated benign tumor. Cytology and histopathology remains the definitive tests for confirming the diagnosis. Surgery is the treatment of choice. They tend to regress spontaneously and prognosis is generally good. Here we have presented such a rare case of lactating adenoma arising from 28 years old lactating women.

## Key words

Benign, Breast, Lactating adenoma, Tumor of pregnancy, Histopathology.

## Introduction

Pregnancy is associated with many physiological and pathological changes in the breast. Lactating adenoma is one of such pathological, benign tumor of breast that is frequently associated with pregnancy and lactation [1, 2]. They can

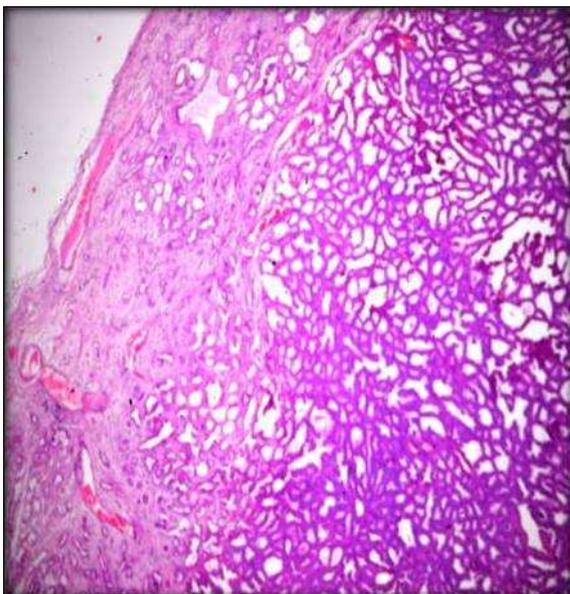
occur in any trimester but are common in third trimester of pregnancy and lactation. They are common in young primiparous women in the second or third decade [1]. Clinically and radiologically, they are indistinguishable from other benign breast tumors. In pregnant or

lactating women, lactating adenoma needs to be differentiated from other breast masses, including carcinoma [2]. History, cytological and histopathological examination helps in diagnosis the disease. Here we have presented such a rare case of lactating adenoma in 28 years old lactating women.

### Case report

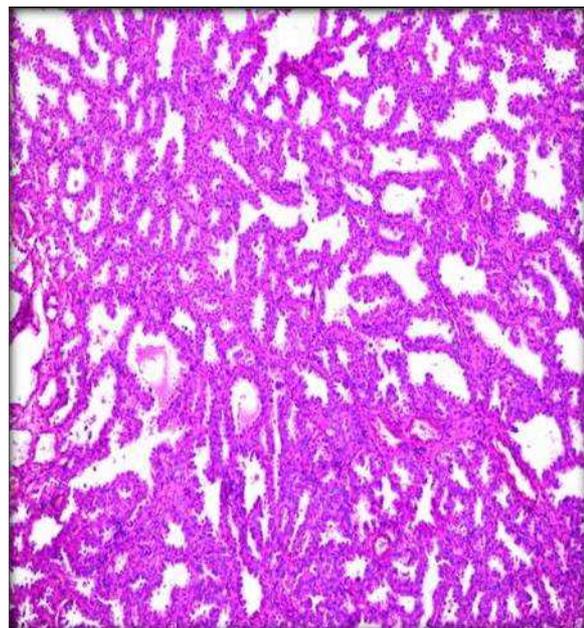
A 28 years old patient came to hospital with complaints of swelling in the left breast since 6 months. There was no history of pain and fever. She gave history of delivery 1 year back and she was on lactation. Other history was not significant. On examination, well defined lump was felt in left breast in inner upper quadrant measuring 3x2 cm. It was freely mobile and firm in consistency. Routine investigations were normal. Provisional clinical diagnosis made was fibroadenoma. Ultrasound and fine needle aspiration cytology were suggestive of benign breast disease. Patient underwent surgical excision of the lesion and specimen sent for histopathological examination, which confirmed the diagnosis of lactating adenoma.

**Photo – 1:** Microphotograph showing capsulated mass and tumor tissue with peripheral normal breast tissue.



Grossly, we received a well circumscribed gray white firm mass measuring about 2.5x2 cm, cut section showed homogenous gray white appearance with slit like spaces. Microscopy showed capsulated mass with tumor tissue and normal glands and stroma surrounding the tumor tissue. **(Photo - 1)** Tumor tissue arranged in tubular pattern and trabecular pattern. **(Photo - 2)** Individual cells were round to oval, with hyper chromatic nuclei and moderate eosinophilic cytoplasm; most of the cells were showing intra cytoplasmic vacuoles. **(Photo – 3, Photo – 4)**

**Photo – 2:** Microphotograph showing tubular and trabecular architecture of the tumor tissue.



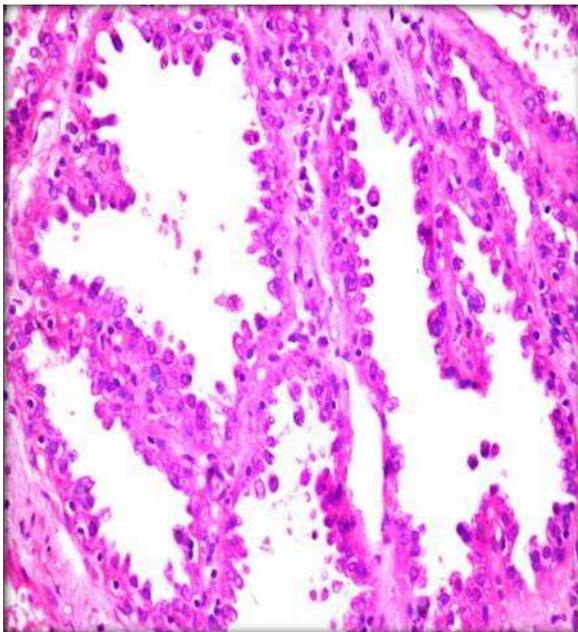
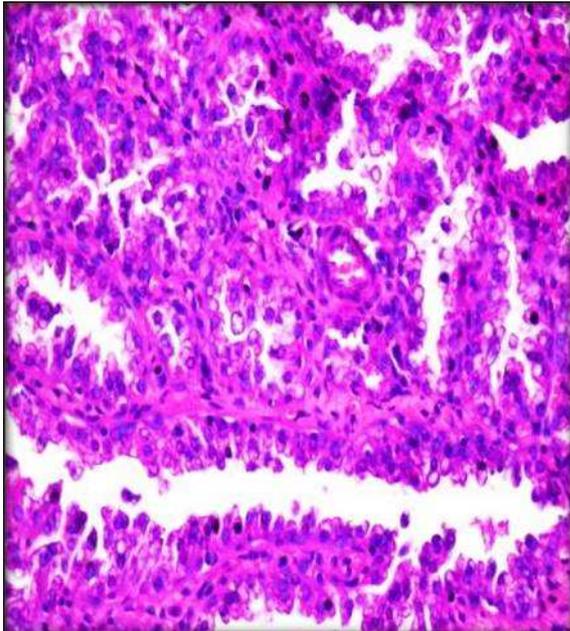
### Discussion

Lactating adenoma is a benign tumor of breast typically occurs during lactation or the third trimester of pregnancy. It is characterized by typical changes of secretory epithelium leading to formation of a well-differentiated benign tumor. It is also known as the "tumor of pregnancy" because changes seen in the form of secretion in these lesions resemble lactational changes of pregnancy [3]. They are common in



primiparous women in the second or third decade either during pregnancy or lactation period.

**Photo – 3 and 4:** Microphotographs showing hyperplastic epithelial cells with projections into the lumen: Individual cells showing hyperchromatic nuclei and moderate eosinophilic cytoplasm and intra cytoplasmic vacuoles.



Clinically, it presents as a painless, well-defined, freely mobile palpable mass with a firm consistency, most often in the periphery and in the upper outer quadrant [1, 2, 3]. Our case presented with progressive enlarging lump with no history of pain. They are generally small, but few cases of giant lactating adenomas were also reported in the literature [4, 5]. Clinically they are difficult to differentiate from other benign breast tumors, as they show similar features [5]. Definitive diagnosis is confirmed only by careful history, cytological and histopathological examination. Even though it occurs in normally located breasts, it has also been reported in ectopic breast that may be located anywhere along the milk line and even in the vulvar region [6]. Radiological investigations are not helpful in coming to the diagnosis but they may be useful in certain conditions. Mammography should be avoided during pregnancy due to radiation associated fetal anomalies. In the postpartum period, the high density of breasts limits its analysis during this period. Ultrasound represents the main diagnostic tool of a breast lump during pregnancy because of its accuracy in the discrimination between solid and cystic lesions, and its safety due to the lack of radiation exposure [7]. Sonographically, Lactating adenomas are generally homogeneously hypoechoic with posterior acoustic enhancement. Septa may be present. For these reasons, they could be confused with a complex cyst. However, evaluation with color Doppler imaging often reveals increased vascularity [8]. These features are not helpful in differentiating from other benign lesions like fibroadenoma. 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 in such situations [7]. Cytology with accurate clinical history will help in accurately diagnosing lactating adenoma [9]. Definitive diagnosis is made by the histological examination of the



excised tissue. In our case, ultrasound and cytology were suggestive of only benign breast disease and confirmation was done by the histopathology. These are well demarcated from the surrounding normal breast tissue, but do not have a true capsule. The cut surface is lobulated and tan-yellow [10, 11]. Microscopically there is an increase in lobular features and a network of large alveolar spaces separated by fine fibrovascular trabeculae. The trabeculae are lined with typical cuboidal cells containing prominent cytoplasmic vacuoles that stain positively for fat. In pregnant or lactating women, lactating adenoma needs to be differentiated from other breast masses, including carcinoma. The main differential diagnosis includes fibroadenomas, juvenile fibroadenomas, and tubular adenomas. Fibroadenoma and tubular adenoma are the closest differentials on microscopy. While fibroadenoma lacks the secretory hyperplasia seen in lactating adenoma, tubular adenomas have tightly packed tubules having epithelial and myoepithelial cells and minimal or absent cytoplasmic vacuolization [3]. The physiological changes occurring in the breast during pregnancy and lactation make the detection and management of breast abnormalities challenging. The origin of Lactating adenoma is controversial, and is sometimes interpreted as a variant of fibroadenoma, tubular adenoma, or lobular hyperplasia, which is also caused by physiological changes. Fibroadenoma is mixed with stromal and epithelial components. Lactating adenomas, however, only consists of epithelial component [12]. However, some researchers believe that it is the previously present adenomas, which forms a lactating adenoma. Thus, tubular adenomas and lactating adenomas are two ends of a spectrum; in which lactating adenoma typically occur in pregnancy [3]. There are two proposed theories about the pathogenesis of lactating adenomas. One suggests that a lactating adenoma is a de novo lesion unique to pregnancy or 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 [8]. Lactating adenoma regress spontaneously at the end of pregnancy or lactation hence no treatment is required for asymptomatic patients.

Treatment with bromocriptine, a dopamine agonist to shrink the mass, followed by surgical is the definitive treatment. Enucleation is the recommended treatment for lactating adenomas as there is a low risk of recurrence. In our case, enucleation was done and patient was doing well on follow up. Lactating adenomas are benign lesions and are not thought to be a risk factor for the development of carcinoma. However, there is a report of a lactating adenoma occurring simultaneously with an infiltrative carcinoma and a case report of an invasive carcinoma developing at the previous excision site of a lactating adenoma [13]. Generally, lactating adenomas have good prognosis hence, their diagnosis preoperatively is necessary for proper outcome of patient.

## Conclusion

To conclude, Lactating adenomas are rare benign breast tumors and should be kept in differential diagnosis while evaluating breast diseases in pregnancy and lactation. Clinically and radiologically they are undistinguishable from other benign lesions such as fibroadenoma of the breast. Cytology with accurate history is helpful but, definite diagnosis is made only by the histopathological examination. They undergo spontaneous regression and simple enucleation is treatment of choice if lesion persists. Recurrence is rare with excellent prognosis hence diagnosing and differentiation from other lesions is necessary.



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