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CASE REPORT

Multiple Lactating Adenomas; A Case Report of a Rare Breast Tumour

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Abstract

A lactating adenoma (LA) is a rare benign breast tumour typically seen during pregnancy and lactation. It is usually presented as a single firm breast mass. Due to LA clinical and imaging features, they can mimic malignant breast cancer and this challenge is further compounded by limited physicians' awareness of LA criteria, leading to diagnostic dilemmas. A case of 19-year-old *primigravidae* with multiple palpable breast masses, an uncommon presentation of LA is presented. Imaging studies raised malignancy suspicion while core biopsy confirmed the diagnosis of LA. Integration of medical history and histopathology helped establish the case and avoid unnecessary interventions.

Key words: Lactating adenoma; Pregnancy; Lactation; Breast neoplasms; Biopsy, large-core needle.

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Introduction

Lactating adenoma (LA) is a rare benign breast tumour with an incidence of 0.5-2 % of all breast tumours occurring during pregnancy and lactation, as it exclusively affects this population group owing to hormonal stimulation.[1] It is commonly presented as a painless solitary firm mass that does not exceed 3-5 cm.[2] Imaging studies for LA are inconclusive and biopsy is a must to exclude malignancy and it should not be deferred until delivery.[1, 2] The underlying cause of LA remains unknown. Some proposed that the hormonal changes during pregnancy play a crucial role, while others suggested it may originate from pre-existing adenomas.[3] The spontaneous regression of this tumour, added to its resemblance to other cancers of the breast, contributes to diagnostic challenges.[4] Herein, a 19-year-old woman with multiple palpable breast masses, highlighting the diagnostic complexity of LA is presented. This report increases the clinical awareness of this rare tumour, improving diagnostic precision and preventing overdiagnosis.

Case history

A 19-years old *primigravida*, lactating three-month after uneventful vaginal delivery, presented with a history of a palpable breast mass in her left breast. The mass was hard but not tender. She did not report any systemic symptoms or nipple discharge. Her past medical and surgical history was unremarkable and there was no family history of breast disease or malignancy.

On examination, three masses were palpated in the anterior region of the left breast at 12, 10 and 7 o'clock. The largest mass measured 3 x 5 cm mass; it was well-defined, non-tender, firm in consistency and freely mobile with no tethering to the skin or underlying tissue. There were no associated skin changes or ulceration and no nipple discharge. Examination of the axillae and the contralateral breast was unremarkable.

She was sent for an ultrasound exam, which showed a BIRAD 4A, with three oval-shaped soft tissue masses having a lobulated smooth margin

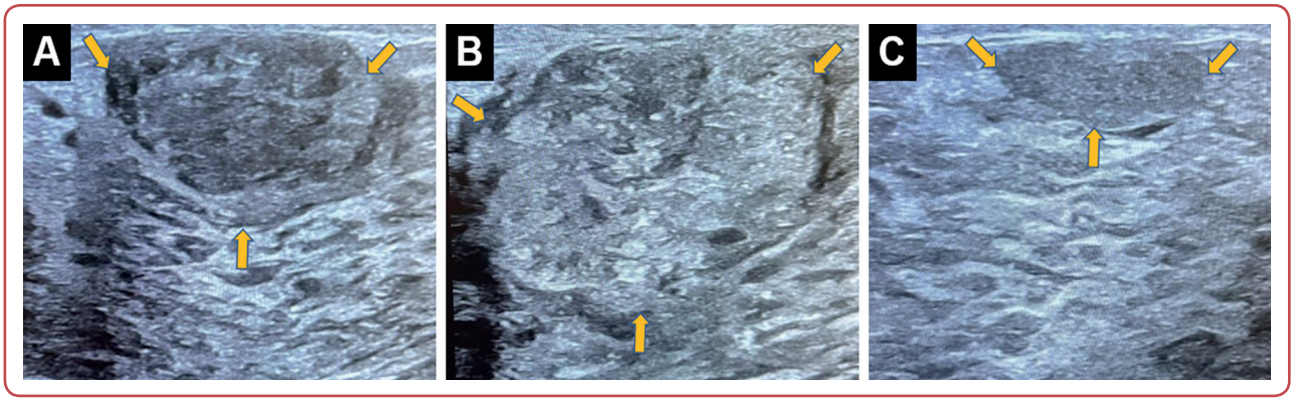

Figure 1: Ultrasound exam of breast showed bilateral heterogenous fibro glandular tissue with hypertrophy of glandular elements Dilated subareolar ducts (physiological). Three soft tissue masses were seen in the left breast; they were oval with lobulated margins and heterogeneous texture; seen at 12, 10 and 7 o'clock, measured about (A) 30.5 x 15.8 mm; (B) 40.9 x 24.2 mm and (C) 18.5 x 7.2 mm; they had no associated posterior acoustic shadowing;

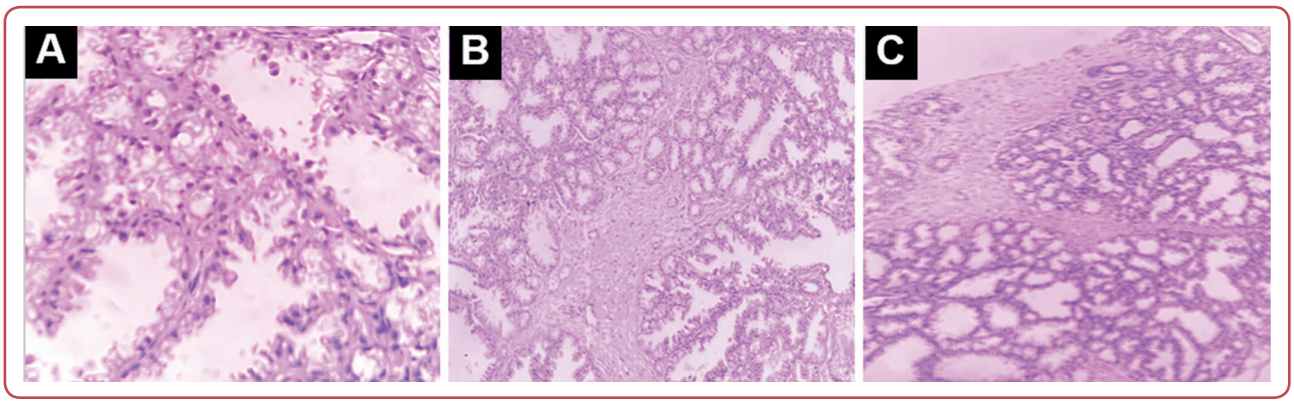

Figure 2: Histopathology of the core biopsy (H&E, 40 x) showing a benign breast tissue with lactating gland with secretory change: there was luminal eosinophilic material, cytoplasmic vacuolation and some reactive nuclear changes, which were inconsistent with lactating adenoma; no malignancy reported

seen at 12, 10 and 7 o'clock. The largest mass exhibited macro-lobulation and appeared iso- to hyperechoic in consistency on imaging with areas of internal and peripheral vascularity (Figure 1).

An ultrasonic-guided core biopsies were done for all three masses. The histopathology report confirmed the diagnosis of lactating adenoma (Figure 2). The case was followed for 1 year with the recommendation to continue breastfeeding. Examination was done every six months; the tumours progressively decreased in size and were completely resolved by the end of the follow-up period.

Discussion

A lactating adenoma is a benign tumour of the breast that commonly affects pregnant or lactating females and can be mistaken for breast carcinoma.[2] Any breast mass that arises during breastfeeding should be thoroughly examined owing to increased carcinoma risk, which can metastasise from the breast.[5] LA can be differentiated from malignant lesions by careful history, clinical examination and a comprehensive work-up, including imaging and a histopathological exam. Ultrasound is the mainstay in imaging, while MRI is used when there is doubt in the diagnosis to avoid unnecessary surgical intervention.[4] Despite the benign nature of LA, it can coexist with malignant breast cancers, emphasising the importance of excluding them. Therefore, a biopsy is mandatory for accurate diagnosis.[2]

Differential diagnoses of a palpable-solid breast mass include fibroadenoma, tubular adenoma, focal mastitis, phyllodes tumour and carcinoma.[3] Typically, LA tends to regress following cessation of lactation. Some researchers recommended bromocriptine tablets to reduce LA size, while

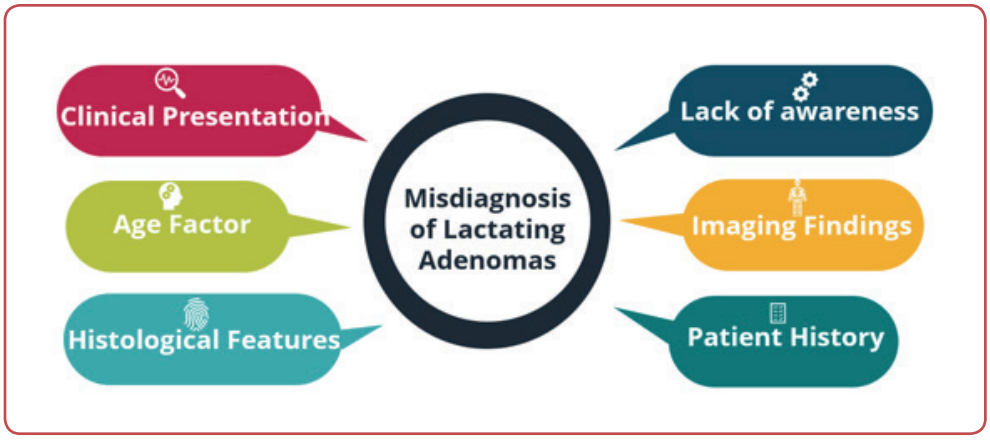

Figure 3: Challenging points that cause misdiagnosis of lactating adenoma

others suggested surgical excision when the diagnosis was inconclusive after ultrasound and a core biopsy or if the LA did not regress after discontinuing breastfeeding.[1, 3]

Mendez et al reported a case involving 23-year-old pregnant women at 30 weeks of gestation who presented with multiple painful breast lumps, confirmed to be multiple breast LA. She was managed medically with bromocriptine after conservative approaches failed. The authors discussed that surgical intervention is the custom approach for such cases. However, their patient refused surgery due to the risk of preterm labour.[2] There were several reported complications among LA cases, including ulceration, infarction and bleeding, which raised concerns about malignancy potential.[5] There were reports of persistent LA cases even after cessation of lactation, which urged for surgical excision.[6]

The post-operative response is satisfactory and breastfeeding can be resumed 24 h later.[2] The current case was unique because it involved multiple LA rather than solitary lesions. The masses were large enough to be palpated and exhibited worrisome features on the ultrasound, which warranted a biopsy for further evaluation.

Although reactive nuclear changes reported in the current cases are not typical for LA, they may occasionally occur. These changes are attributed to the hormonal changes during lactation, which alters breast morphology.[5] This underscores the complexity of interoperating LA and the importance of a careful histopathological examination to confirm the diagnosis and exclude other potential pathologies.

The rarity of LA, its capacity to mimic aggressive cancers, whether in presentation or imaging study and the unfamiliarity of physicians about them make LA diagnosis challenging (Figure 3). A comprehensive history, diagnostic work-up and biopsy will reduce misdiagnosis, unnecessary anxiety and treatment.

Conclusion

Due to LA clinical and imaging features, it can mimic malignant breast cancer and this challenge is further compounded by limited physicians' awareness of LA criteria, leading to diagnostic dilemmas. Core biopsy is necessary to establish proper diagnosis.

Ethics

The Ethical Committee in Mutansiriyah University /College of Medicine approved the manuscript with IRB 099/2024, dated 20 September 2024. A written informed consent for anonymised patient information to be published in this article was obtained from the patient.

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None.

Conflicts of interest

The authors declare that there is no conflict of interest.

Data access

The data that support the findings of this study are available from the corresponding author upon reasonable individual request.

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