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(CASE REPORT)

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Spontaneous infarction of fibroadenoma

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Abstract

- Spontaneous infarction is an uncommon complication of breast fibroadenoma.
- Infarction of fibroadenoma can also be induced by trauma or following fine needle aspiration procedure.
- Spontaneous infarction occurs mostly during pregnancy or lactation, but it may not be associated with any risk factor.
- Ultrasound plays a major role in identifying such complications of fibroadenoma but core biopsy remains the golden standard investigation for final diagnosis.

Keywords: Fibroadenoma; Infarction; Ultrasound; Core Biopsy

1. Introduction

Fibroadenoma is the most common benign breast lesion; it arises from the stroma and epithelium of the terminal duct lobular unit. Secondary changes in fibroadenoma may occur, which include calcification, ossification, hyalinization, and myxoid and apocrine squamous metaplasia.

1.1. Epidemiology

- The reported incidence ranges from 0.5% to 1.5% of all fibroadenomas; it accounts for approximately 0.1% of biopsied breast lesions.
- Risk factors include pregnancy, lactation, hormonal changes, though it can occur without identifiable risk factors.

1.2. Clinical Presentation

- Patients typically present with painful rapidly enlarging breast lump.

1.3. Diagnosis

- Ultrasound and biopsy are crucial for diagnosis.

1.4. Treatment

- local excision remains the mainstay of curative treatment.

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2. Prognosis

- Generally excellent, as fibroadenomas are benign breast lesions and infarction does not increase the risk of malignancy.
- No recurrence.

3. Case Presentation

A 22-year-old woman presents with sudden acute-onset of pain in a previously felt right breast peri areolar palpable lump.

3.1. Initial ultrasound finding:

circumscribed oval-shaped homogenous hypoechoic parallel solid lesion, showing posterior acoustic enhancement and edge attenuation, eliciting minimal peripheral vascularity on color Doppler scan, measuring 1.8 x 1.4 x 1.1 cm.

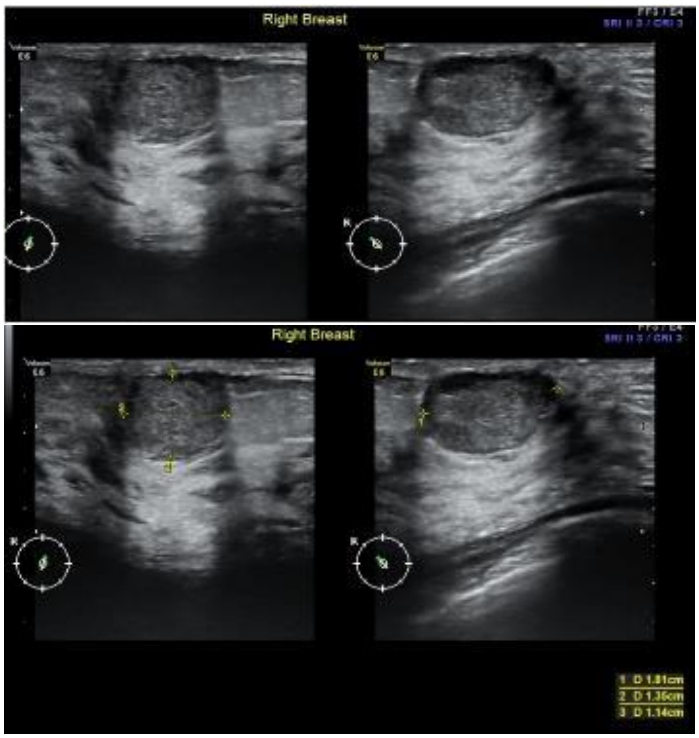

Figure 1 Breast ultrasound scan showing circumscribed oval-shaped homogenous hypoechoic parallel solid lesion, measuring 1.8 x 1.4 x 1.1 cm

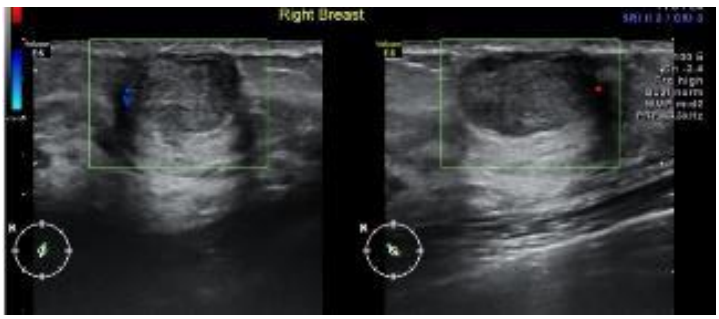

Figure 2 The lesion shows peripheral vascularity on color Doppler scan**.**

3.2. Second ultrasound scan done after 7 months:

The lesion shows significant interval changes regarding the size (increase more than 20% over 6 month interval) and morphology of the lesion appearing heterogeneous with hypoechoic central areas and non-parallel orientation with peripheral surrounding hypoechoic halo and perilesional vascularity on colour Doppler scan, the lesion measures 2.4 x 1.7 x 1.6 cm.

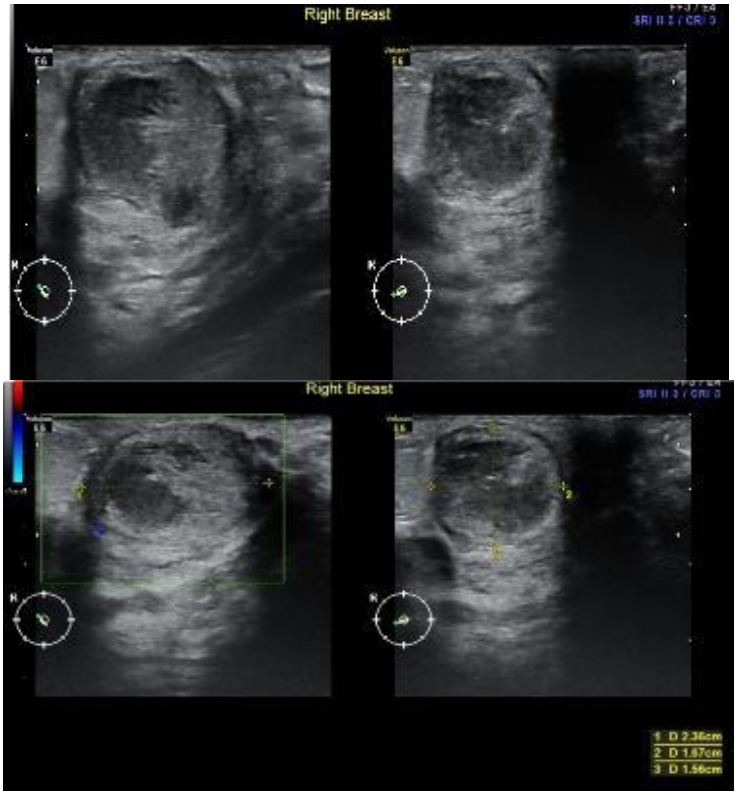

Figure 3 The lesion shows heterogeneous echotexture with hypoechoic central areas and peripheral surrounding hypoechoic halo.

Figure 4 Color Doppler scan shows mild perilesional vascularity**.**

3.3. Histopathological Diagnosis

3.3.1. Completely infarcted Lesion/tissue piece is identified. -Small poorly preserved pieces architecturally reminiscent of fibroadenoma pieces are noted.

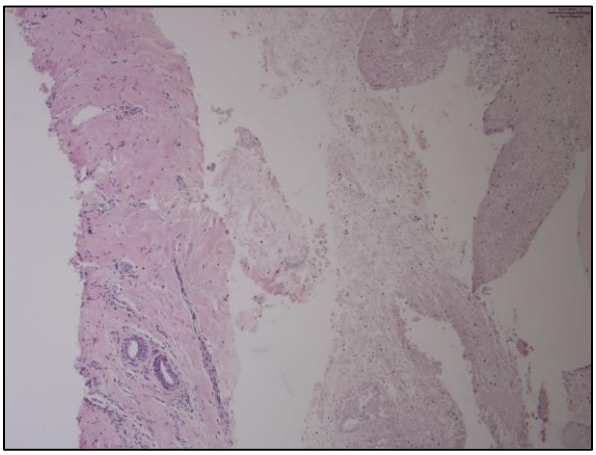

Figure 5 Viable breast tissue pieces with mild stromal fibrosis are identified, -Mild mixed inflammatory infiltrate (lymphocytes, neutrophils and eosinophils) seen in the viable breast tissue stroma and around the small vessels.

3.3.2. Right breast, Lump, Excision Biopsy: -Findings consistent with infarcted fibroadenoma with hyalinized areas. -No evidence of malignancy

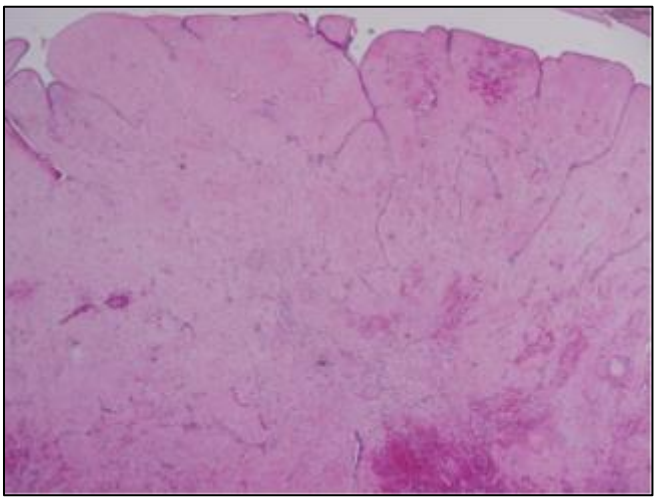

Figure 6 Section reveals a circumscribed benign neoplasm. The neoplasm is composed of epithelial and stromal component. The epithelial component is arranged in broad leaf like projections. The cells lining these epithelial ducts are uniform with round nuclei. The intervening stroma shows infarction with hyalinized areas, focal chronic inflammation and hemorrhage. There is no stromal overgrowth, periductal condensation of stroma and cytological atypia. No evidence of mitosis, necrosis or heterologous differentiation identified. There is no evidence of malignancy

4. Discussion

4.1. Key Roles of Imaging

- Fibroadenoma is the most common benign breast lesion. Secondary changes in fibroadenoma may occur, which include calcification, ossification, hyalinization, myxoid and apocrine squamous metaplasia.
- The most common clinical manifestation of infarction in fibroadenoma is painful breast mass.
- The infarcted fibroadenoma could be seen as a heterogeneous mass lesion or complex echogenic mass with solid and cystic components on sonography, which is related to hemorrhage and necrosis pathologically. Although these imaging findings may be seen in other breast malignancies, an infarcted fibroadenoma should

be considered a possibility in the differential diagnosis when a mass with the described sonographic features when seen in a young woman, especially one with a history of pregnancy or lactation.

In summary, Accurate diagnosis is critical because infarcted fibroadenoma can appear similar to breast carcinoma, thus potentially leading to an incorrect diagnosis and treatment by the physicians.

5. Conclusion

Key Takeaways

- Lack of knowledge of this rare entity may lead to erroneous diagnosis of inflammatory lesion or malignancy on fine needle aspiration cytology.
- Histopathological examination is the gold standard investigation for diagnosis of infarcted fibroadenoma.
- Management by local excision is adequate, and mastectomy should not be performed without histological confirmation of malignancy.

Compliance with ethical standards

Disclosure of conflict of interest

No conflict of interest is to be disclosed.

Statement of informed consent

Informed consent was obtained from all individual participants included in the study.

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