

Case Report

Spontaneous infarction in fibroadenoma of breast: a rare pathological finding in a common pathological entity

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ABSTRACT

Fibroadenoma is one of the most prevalent benign tumour in adolescent women. It accounts for 20% of all benign breast tumours. Spontaneous infarction in fibroadenoma is very unwonted and mostly, it is associated with gravidity or lactation. Infarction can additionally occur as a complication of antecedent fine-needle aspiration biopsy. At the institution during 2-years period we incidentally found three such cases of spontaneous infarction of fibroadenoma over varied age groups which surprised us. So, reviewed the literature and presented our findings. Three fibroadenomas with features of central necrosis were diagnosed on excision and biopsy. Spontaneous infarction within fibroadenoma is a rare occurrence. It causes diagnostic difficulties, hence conscientious search and possibility of this entity should be must during the evaluation of breast lump.

Keywords: Adenocarcinoma, Colorectal, Carcinoma, Colonoscopy, Retrospective

INTRODUCTION

Fibroadenomas are the commonest neoplasms of the breast generally affecting young women.^{1,2} Fibroadenoma is a benign swelling arising from the epithelium and stroma of the terminal duct lobular unit.

Secondary changes include hyalinization, calcification, ossification, myxoid and apocrine or squamous metaplasia, sclerosing adenosis.³ Infarction in benign breast lesions is unusual and It was first described by Delarue and Redon in 1949, in Haagensens' review of fibroadenoma, the incidence of spontaneous infarction was 5 out of 1000 cases (0.5%), and 3 of these 5 patients were pregnant or lactating for the first time.^{4,5}

It can occur in various conditions like, pregnancy, lactation, after fine needle aspiration procedure or trauma but Spontaneous infarction of fibroadenomas in the absence of above mentioned causes is extremely rare.^{1,6-9}

Here, authors have present three cases of spontaneous infarction of fibroadenoma of the breast, unrelated to any known risk factor.

CASE REPORT

Case 1

A 21-year-old unmarried female presented with a short history of a rapidly growing palpable and mildly painful lump in the left breast. Clinical and radiologic findings (ultrasound) were suggestive of fibroadenoma and the patient was advised for excision and biopsy. The excised specimen was sent for histopathological examination. Gross examination revealed a well circumscribed nodular, encapsulated tissue, quantifying 2.1cm x 1.3cm x 1.5cm. on cut open cut surface shows glistening grey white and grey brown area. Few necrotic areas are withal visually perceived. On microscopy section examined show a well circumscribed tumour comprising of immensely colossal areas of coagulative necrossive

circumvented by few tubular and compressed slits like ducts arranged in intracannalicular and pericanalicular pattern. The intervening stroma is hyperplastic and fibromyxoid, the impression of fibroadenoma with foci of hemorrhage and necrosis was concluded.

Case 2

A 34-year-old female presented a well-circumscribed mobile lump in the upper outer quadrant of her right breast. The lump had gradually increased in size over the last six months and had started to be painful in the last few days. On clinical examination, the lump measured 3cm x 2.5cm, and the skin over the lump was freely mobile and showed no signs of inflammation. There was no history of trauma or fine needle aspiration cytology (FNAC) The lump was diagnosed clinically as a fibroadenoma, and the FNAC was carried out. FNA report was suggestive of fibroadenoma with secondary squamous metaplasia. Excision and biopsy was planned. The excised specimen was sent for histopathological examination. On macroscopic inspection, the specimen was found to be an encapsulated grey white mass measuring 3cm x 2.5cm x 1.5cm. A grey brown area with small cystic areas was evident in the cross-sectional view of the specimen. The remaining part of the specimen was firm, grey white with a single small cystic area. On microscopic examination, sections from the grey white area indicated an intracannalicular type of fibroadenoma with cleft-like spaces. In addition, sections from grey brown areas revealed areas of ischemic hemorrhagic necrosis within the fibroadenoma. The histological diagnosis of fibroadenoma with central necrosis and subtotal infarction was made.

Case 3

A 23 year unmarried female presented to surgical outpatient department (OPD) with the complaint of painful lump in the left breast since 3 month, which was gradually incrementing in size. On examination a non-tender, well-defined, firm mass was palpable in the upper outer quadrant of left breast quantifying 2.5cm x 2.5cm. There was no history of pyrexia, trauma or prior fine needle aspiration procedure. Nipple discharge, retraction or axillary lymphadenopathy was not optically discerned. Other breast was mundane. Clinical diagnosis of fibroadenoma was considered and FNA was recommended. Fine needle aspiration of the lump showed areas of haemorrhage, necrosis; few clusters of atypical cells. Report is discussed with the patient and the decision for excision biopsy of the lump for histopathological examination (HPE) was taken. Preoperative investigations were within mundane limits. Excision of lump was performed. On macroscopic examination of excised lump, the specimen was found to be an encapsulated grey-white mass quantifying 2cm x 2.5cm x 1.5cm. Cut surface showed a grey-brown area quantifying 1cm x 1.5cm with minuscule cystic areas and haemorrhage.

On microscopic examination revealed extensive areas of haemorrhage and ischemic necrosis in central area with circumventing cellular fibroblastic stroma circumventing glandular and cystic spaces lined by flattened epithelium. The periphery showed retained outlines of the intralobular pattern along with congested minuscule vessels and areas of haemorrhage. No inflammatory cells or cellular atypia were evident. Histological diagnosis of spontaneous infarction and central necrosis of fibroadenoma of the left breast was made.

DISCUSSION

Fibroadenomas (FAs) are the most common benign tumour of the female breast constituting nearly one-third of all benign breast lesions. They can occur in women of any age, but the highest occurrence is seen in second and third decade of life.³ Diagnosis of fibroadenoma rarely poses a diagnostic dilemma. Spontaneous infarction within fibroadenoma is rare, and associated with pregnancy, lactation or a recent FNA.^{6,7} Exceptionally, spontaneous infarction may affect multiple fibroadenomas in the same patient, and also be related with the use of oral contraceptives.^{10,11} Hardly, it can be seen in young patients without any associated risk factors.

Spontaneous infarction in fibroadenoma, was first described by Delaure and Redon in 1949. The presence of infarction and necrosis are generally worrisome signs in breast pathology although spontaneous infarction can be seen in variety of benign breast lesions including fibroadenoma, phyllodes tumor, lactating adenoma, and intraductal papilloma and sporadic cases occurring in patients who are on anticoagulant drugs.¹²⁻¹⁷ The most frequent clinical manifestation is a painful breast lump

Spontaneous infarction in fibroadenoma take place often during third trimester of pregnancy and lactation, may be because of relative ischemia in hyperplastic tumor tissue. Few authors have suggested the probability of mechanical factors, that fibroadenoma being a mobile tumor undergoing torsion and ischemia. Thrombo-occlusive vascular changes as a likely cause of infarction within fibroadenomas because infarction characterises a spectrum of regressive changes that include calcification and hyalinization, both of which are commonly seen in fibroadenomas.^{18,19} Many authors believes the possible theories behind the pathogenesis of infarction of breast fibroadenoma like the trauma caused by needling (FNAC) method which may leads to thrombosis of vessels and therefore infarction, such FNAC infarction are also well-known in other organs like thyroid, lymphnodes and salivary glands.^{20,21}

The simplest and most common investigation done for breast lumps is FNAC.^{22,23} The chief cytopathological features of infarction in a fibroadenoma are plenty of singly scattered round to oval cells which do not possess any atypical features, many ghost-like epithelial cells in a

necrotic background. In carcinoma, a definite diagnosis should only be given when necrosis and also viable cells with prominent nuclear atypia, nuclear irregularities, prominent nucleoli and mitosis are present. In case of inflammatory lesion like tuberculous granulomatous mastitis, the differentiation is possible by the presence of epithelioid cell granulomas, multinucleated giant cells, lymphocytes and ZN staining of AFB.²²⁻²⁸ Other commonest differential diagnosis like duct ectasia, clinical presentation of subareolar cord like mass helps in the correct diagnosis.^{22,26,29}

Histopathological examination is the confirmatory investigation for infarction of fibroadenoma which shows abundant areas of ischemic necrosis, haemorrhagic areas with partial or no retain of the architecture of the fibroadenoma. There should be no inflammatory cells or atypical cells. In the present study all three cases were diagnosed as case of total spontaneous infarction of breast. Treatment by local excision is adequate for this lesion and mastectomy should never be performed without histological evidence of malignancy.^{21,22,26}

In spite of so many hypotheses the etiology for infarction is still a mystery. In the present study all the three cases had no inciting insults which may result in infarction hence diagnosed as spontaneous infarction. We conclude that spontaneous infarction is an infrequent event in breast fibroadenomas and may not be associated with any known risk factor

CONCLUSION

In a short span of 2 years, we report three cases of fibroadenoma of the breast with central necrosis in females who had no etiologic factors supporting the infarction; therefore they were diagnosed as spontaneous infarction. It is an unorthodox complication within fibroadenoma and causes diagnostic quandaries, so meticulous search and possibility of this entity should be must during the evaluation of breast lump.

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