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Case Report

Complex fibroadenoma with focal ossification- an enigmatic finding in a less common tumor

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ABSTRACT

Breast lumps have diverse causes including benign as well as malignant lesions. Fibroadenoma (FA) is a common cause of breast lump. Complex fibroadenomas, a particular subtype, pose diagnostic dilemmas due to confusing the radiological findings and hold higher incidence of transformation to malignancy. A 49 year old female presented with a painless lump in right breast for 2 years which appeared calcified on radiology. Excision biopsy was performed which grossly revealed an encapsulated grey-white firm to hard with cystic areas. Microscopically the sections showed a well encapsulated fibroepithelial tumor showing areas of sclerosing adenosis, hyalinization, cysts lined by cuboidal cells with eosinophilic secretions, areas of calcification and ossification. No evidence of lobular hyperplasia or in-situ carcinoma was seen. Patient was advised follow up. This case represents the unusual occurrence of complex fibroadenoma in a middle-aged female showing with ossification.

Keywords: Fibroepithelial, Calcification, Cyst

INTRODUCTION

Lumps in the breast may result from varied causes which may be benign or malignant. Of the solid lesions of the breast, FA is one of the most frequent while the invasive carcinomas of the breast are the most dreaded. As the former increase in response to estrogen they are frequently detected incidentally.[1] The conventional FAs also knows as simple FAs (SFA) have standard radiological and histopathological findings. But owing to the various deviant histologic features and findings, a number of variants have been described which include hyalinized, myxoid, juvenile, cellular, giant and complex FAs (CFA).[1,2]

On one hand CFAs have shown to have a higher incidence of transformation into carcinoma breast and on the other they pose diagnostic dilemmas due to the radiological issues caused by the imaging findings. CFAs are unusual causes of calcification in breast but ossification is rarely documented. Ossification in the breast is exceedingly uncommon with limited conditions resulting in the same. Here we present a case of CFA with the unusual finding of ossification in a right breast lump in a 49 year old female.

CASE REPORT

A 49 year old female presented with history of right breast lump since 2 years which was not associated with pain. There was no history of any co-morbidities. On examination a 3×3 cm palpable lump was found in the right breast at 12 °'clock position. Left breast examination was within normal limits. No palpable lymph nodes were seen. Ultrasonography of bilateral breasts revealed a hypoechoic lesion with calcification at 12 °'clock position

in right breast. Left breast was found to be normal. Complete blood count, viral serology and random blood sugar were within normal limits. Excision biopsy was performed and hemostasis was achieved.

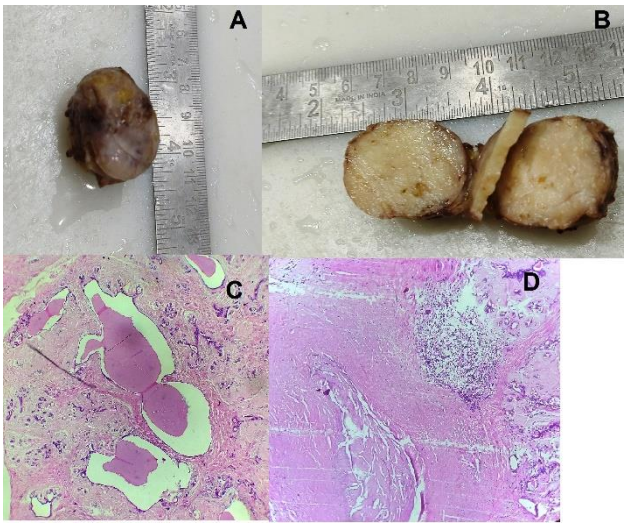

Figure 1: Gross specimen of the excision biopsy; outer surface (A) shows a well encapsulated mass while the cut surface (B) shows a solid gray whit firm to hard tumor with tiny cystic areas; (C) section shows cystic areas >3 mm in greatest dimension containing eosinophilic secretions; (D) section shows areas of hyalinization and calcification. (C,D: H&E, 4X).

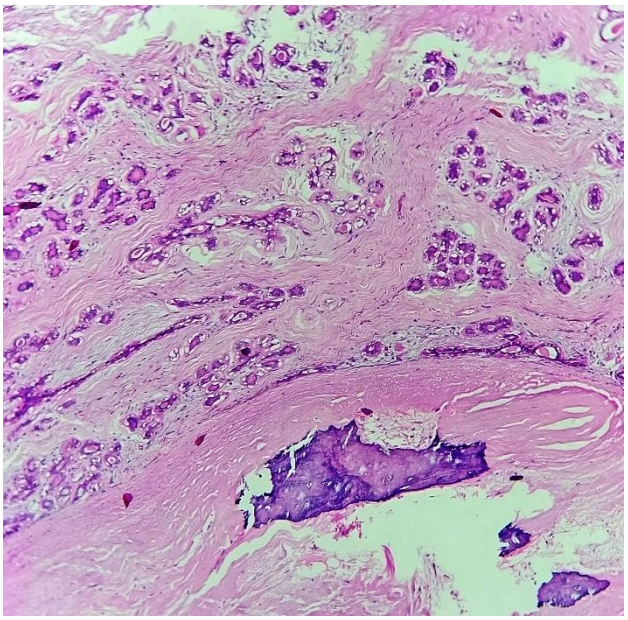

Figure 2: Section shows areas of adenosis with foci of ossification (H&E, 4X).

Grossly a globular gray-white tissue measuring 4×3×1.8 cm was received. Outer surface was well encapsulated. Cut surface was grayish white firm to hard with multiple cystic areas ranging in size from 2-5 mm. Microscopically the sections showed a well encapsulated fibroepithelial tumor showing areas of sclerosing adenosis, hyalinization, cysts lined by cuboidal cells with eosinophilic secretions, areas of calcification and ossification. No atypia, necrosis or mitosis was seen. Based on the histological features a diagnosis of CFA with areas of ossification was made. No evidence of lobular hyperplasia or in-situ carcinoma was seen. Patient was advised follow up and is currently disease free.

DISCUSSION

As FAs and their variants manifest divergent behavior and hold potential for malignant change and therefore their accurate identification is required.[1] SFAs clinically present as painless and mobile lumps in young girls. The mobility stems from their clear demarcation from the breast tissue due to the well encapsulated nature, which makes it known as the breast mice. In around 10-20% of cases they may be bilateral or multiple measuring 2-3 cm.[1,2] They may rarely regress or progress depending on the secondary changes occurring within. Histologically the FAs are a part of fibro-epithelial lesions which show proliferation of both the epithelial and stromal components either manifesting the intra-canalicular or pericanalicular pattern.[2]

CFAs were initially described by Dupont et al in 1994 who had suggested they constituted 22% of all FAs and since then a number of cases have been documented.[3,4] Clinically CFAs are smaller than SFAs and present in older age group with a mean of 47 years. They have slightly higher risk of breast carcinoma development as compared to the FAs.[3]

CFAs harbor one or more features of complexity including cysts greater than 3 mm, sclerosing adenosis, papillary apocrine metaplasia and epithelial calcification.[4] In the present case there were cysts that were larger than 3 mm, defined areas of sclerosing adenosis along with foci of calcification. Papillary apocrine metaplasia was not seen. The presence of all these three findings in the same case has been found in only about 5% of cases of CFAs.[4] These in addition showed areas of ossification which are rarely documented in literature. Presence of bone tissue in the breast, osseous metaplasia is seen in very few benign conditions and there are scarce documentations of the same in CFAs.[5,6] Presence of the ossification on radiology can lead to high index for suspicion for malignancy as ossifications are often associated with the same. In an interesting study comparing CFAs with SFAs performed by Pinto et al showed that CFAs were significantly more often solitary and larger.[7] They found that the presence of microlobulations, spiculations and microcalcifications were more frequent in CFAs while complex echo structure was heralded as the single most significant ultrasonographic finding for CFA detection.[7] Histopathologically, Sklair-Levy et al had found 15.7% cases of CFAs in their study wherein out of 63 CFA cases studied, one showed invasive lobular carcinoma and the

other showed features of phyllodes tumor.[4] So these cases may harbor more findings than evident.

There are no definitive guidelines on the management of CFAs.[4] Some studies recommend follow up while others recommend excision biopsy. Sklair-Levy et al suggested that CFAs should be treated as SFAs are.[4] If atypical findings are absent then mammographic and sonographic follow-up will suffice. But in the presence of atypical findings in histopathology of core needle biopsy, such as atypical lobular hyperplasia, excision biopsies should be done to rule out malignancy.

CONCLUSION

To sum up, this case represented the unusual occurrence of complex fibroadenoma in a middle-aged female showing with ossification. Knowledge of this entity with areas of sclerosing adenosis, hyalinization, cysts lined by cuboidal cells with eosinophilic secretions, areas of calcification and ossification is essential to differentiate it from its other mimics. Also it is important to ask these patients to remain on follow up to rule out possibility of malignancy.

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