Breast Hamartoma: Breast within Breast Sign

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Abstract

Breast hamartoma is one of the rare benign lesions described. A varied histopathological type of hamartoma has been described under this heading. However the imaging findings are unable to distinguish these histopathological types, mammography and sonomammography are fairly diagnostic of this condition. A case of a 42-year-old multiparous lady with a history of lump in the left breast for duration of 2 years was discussed in present case.

Keywords: Breast lump, Mammography, Magnetic Resonance Imaging.

Introduction

Breast hamartomas are one of the rarest tumors described. The incidence of hamartoma varies from 0.1% to 0.7% of all benign lesions as described by various authors in the literature[(1)]. Breast Hamartoma (BH) comprises of adenolipoma, fibroadenolipoma, lipofibroadenoama depending on its composition. Often, these lesions are composed of varying amounts of glandular, adipose and fibrous connective tissue. Macroscopically, BH often has a well-defined fibrous pseudocapsule around it which can also be demonstrated on imaging. Although, mammographic findings of BH have been well described, there is scant literature about the MRI features of such a lesion. We present a case of BH in a female patient and discuss the mammographic as well as MRI appearances.

Case History

A 42-year-old multiparous lady presented to our institute with a history of lump in the left breast for duration of 2 years. It was noticed by her insidiously and has been progressively increasing in size. Though she had subjectively complained of mild discomfort; there was no history of nipple discharge, pain or any skin changes. There was no family history of malignancy of breast in the family.

On examination, a well-defined lump measuring 6 cm X 7 cm was felt in the left upper outer quadrant. The lump was not mobile and there was no associated skin change. No axillary lymph nodes were palpable. She underwent full field digital mammographic examination (Siemens Mammomat Erlangen, Germany) at our Institute with standard craniocaudal (CC) and mediolateral oblique (MLO) views. On mammography, a well encapsulated mass lesion (9cm X 7cm) with heterogeneous density was noted in the superolateral quadrant. There was no architectural distortion of the surrounding breast parenchyma with the lesion and the lesion gave an appearance of 'breast within breast' (Fig. 1). There was no micro/ macro calcification within the lesion. There was no nipple retraction. On mammography, a diagnosis of (Breast Imaging Reporting and Data System) BIRADS II (suggestive of benign aetiology) was offered.

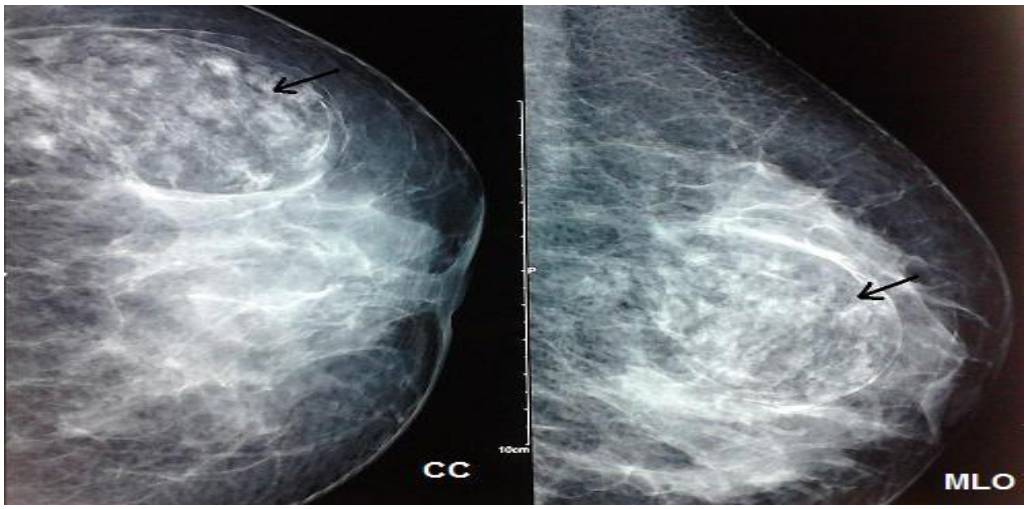

Fig. 1: A well-defined encapsulated lesion giving appearance of "breast within breast" appearance

Sonomammography revealed an ill-defined lesion with heteroechoic appearance. The lesion did not show any posterior acoustic enhancement or shadowing. The lesion did not have any associated architectural distortion. MRI was carried using dual breast coils on 1.5 Tesla MRI Siemens Avanto (Siemens Erlangen, Germany).

There was a well encapsulated lesion measuring 9 cm X 7 cm in size noted in the left upper and outer quadrant. Its contents were similar in morphology to that of the fat and glandular tissues. On fat suppressed images the fat component was suppressed. There was no other area of abnormality noted (Fig. 2 and Fig. 3A-3B). Based on the mammography and MRI findings a diagnosis of a breast hamartoma was confidently offered. Excision biopsy of the lesion revealed a diagnosis of adenolipoma.

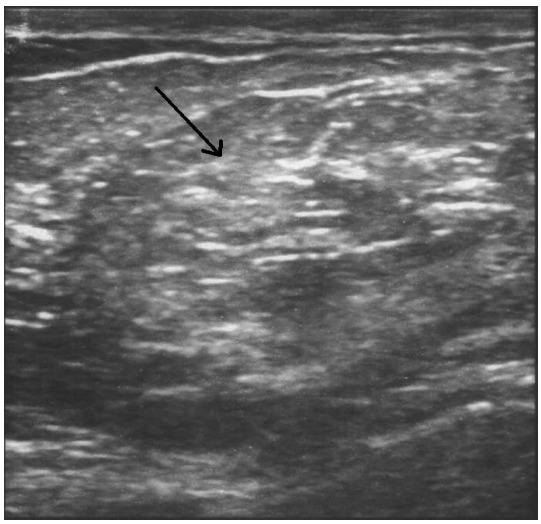

Fig. 2: A well-encapsulated lesion in the breast tissue with no posterior acoustic shadowing or enhancement

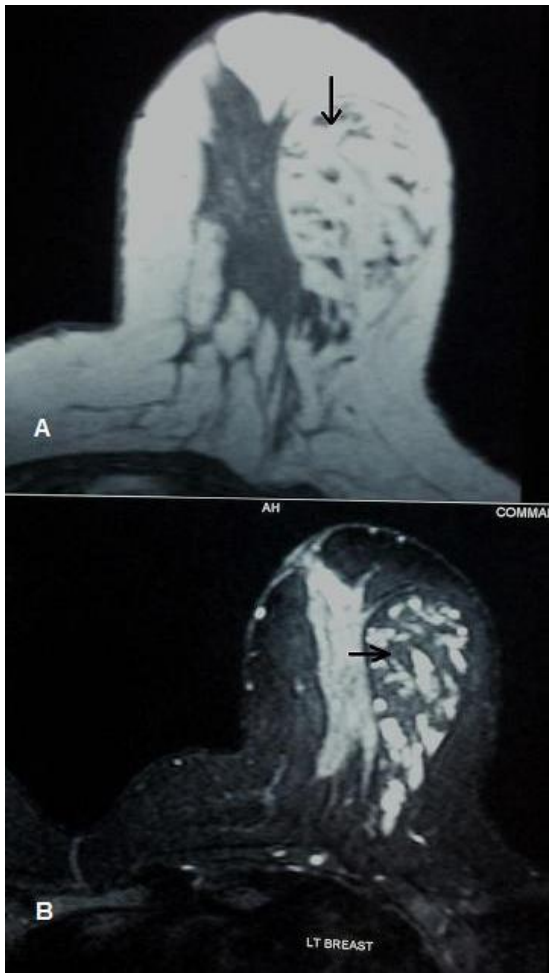

Fig. 3A and 3B: A well encapsulated lesion with hyperintense fat component and hypointense glandular component (3A), fat component is suppressed in the fat suppressed image (3B)

Discussion

Hamartoma is defined as "a focal malformation that results from faulty development in an organ,

composed of an abnormal mixture of normally occurring tissue elements or an abnormal proportion of a single element normally present at that site"[2]. The description of pathological features of a mammary hamartoma is attributed to Hogeman and Ostberg in 1968, followed by Arrigoni et al in 1971[3-4]. These lesions are more detected in 4th and 5th decade. During this time the normal breast tissue involutes and hence BH more easily present as lumps[5].

A mass of breast tissue becomes separated during foetal development and continues its development giving the appearance of "breast within a breast" because of its composition of normal component of the breast tissues. In a study describing 16 cases of hamartoma to described the radiological features; it was found that these were well defined and composed of a mixture of mammary tissue and fat[6]. The authors of this study also suggested that this lesion could be accurately diagnosed by mammography and therefore did not require surgical excision.

Hamartoma of breast comprises of adenolipoma, fibroadenolipoma, adenofibrolipoma based upon composition. It is composed of lactiferous ducts, mammary glands, connective tissue, fibrous tissue surrounded by a pseudocapsule[7]. Various authors have described the features of this lesion on mammography but very few literatures are available on the MRI feature of this lesion. The classic mammographic and MRI features, when present, are virtually diagnostic of BH and biopsy is rarely required for such a case.

On mammography the appearance varies depending upon the composition of glandular, fibrous and fat. The fat being predominant component with interspersed fibrous and glandular component; most of the BH appears as well circumscribed lucent lesions with varying radiodensity. In cases where the fibrous tissues predominate the lesions appear dense and often it is difficult to differentiate BH from fibroadenoma. BH having only fat component appear lucent and hence may mimic lipoma, fat necrosis and oil cyst[8].

The lobulated glandular component spread within the encapsulated fat gives rise what has been described as "slice of salami" by few authors[7-8]. The pattern of calcification though rare can be of amorphous or smooth and round microcalcifications. However presence of pleomorphic calcification associated spiculated opacity or a well-demarcated dense opacity in a hamartoma are suspicious for malignancy. The presence of malignancy within the BH is described as a coincidental finding and it arises from the glandular component[9].

On ultrasonography the lesion appears well circumscribed. The internal component appears heterogenously hypoechoic depending upon the distribution of fibrous tissue, glandular component and fat. The capsule when present can be seen distinctly. Often there is a surrounding halo present around the capsule. The calcification when present within BH can be appreciated on ultrasonography. On colour Doppler interrogation the lesion has scanty vascularity[10].

MRI characteristically shows tissues following the signal intensity of glandular, fat and fibrous tissue as per composition on all sequences. Due to higher tissue characterisation MRI clinches the diagnosis.

Various authors have suggested limited role for FNAC, trucut biopsy as most of the studies suggesting most common tissue to be sampled is fat confusing it with that of lipoma. Hamartomas do not possess specific diagnostic histological features; therefore pathological diagnosis is usually difficult. The presence of fibrous tissue within the lobules or fibrous tissue and fat in the stroma with or without angiomatous changes should alert the pathologist to the possibility of hamartoma. The presence of breast lobules and ducts help to distinguish this tumour from fibro adenoma in which lobules are often absent.

Conflict of Interest: None
Source of Support: Nil

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