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Hamartoma And Fibroadenoma Coexisting As Two Discrete Masses In The Same Breast: A Rare Occurrence

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Abstract

Hamartoma of the breast is a rare benign lesion while fibroadenoma is one of the most common benign lesions occurring in the breast. Hamartoma is composed of a variable amount of mammary tissue, adipose tissue, and fibrous tissue arranged in a disorganized manner. A specific diagnosis of hamartoma is usually missed on fine needle aspiration cytology and imaging study. Because of this diagnostic pitfall, hamartoma remains an underdiagnosed lesion. In the index case, the patient presented with two lumps in the left breast which were diagnosed as fibroadenoma on cytology as well as on USG. The diagnosis of hamartoma was missed on both cytology and ultrasonography. On histopathological analysis of both the masses, a diagnosis of hamartoma and fibroadenoma was made. Thus, histopathological examination remains the gold standard in such cases. Also, what makes this case interesting is the fact that both hamartoma and fibroadenoma existed in the same breast as separate masses.

Keywords: Hamartoma, Fibroadenoma, Benign, Mammary tissue, Adipose tissue, Disorganized.

Introduction

Breast hamartoma is a rare benign tumor that occurs mostly in females and consists of a variable amount of breast tissue, adipose tissue, and fibrous tissue [1,2,3] Breast hamartoma is mostly unilateral [1,4]. It is a well-defined, usually encapsulated lesion composed of varying proportions of haphazardly arranged benign mammary tissue elements [1]. Due to their variable composition, hamartomas are difficult to diagnose and are often mistaken for fibroadenomas on clinical and radiological examination. Even core biopsy and FNAC are not very helpful in diagnosis; as may show normal breast tissue only. Thus, it remains an underrecognized & under-reported condition [1,2], largely because good clinicopathologic correlation is required to make the diagnosis. This case report is notable as hamartomas are rare benign tumors of the breast. Moreover, the occurrence of hamartoma with fibroadenoma as two discrete masses in the same breast is even rarer, and to the best of our knowledge, no such case has been reported so far.

Case Report

The present case is of a 31-year-old female patient who was admitted with chief complaints of two lumps and pain in her left breast for 6 months duration. No history of trauma, lactation, or family history of breast malignancy was obtained. Physical examination of the left breast revealed two lumps; one in the upper outer quadrant measuring 5.0 x 4.5 cm and the other in the lower outer quadrant measuring 2.0 cm x 2.0 cm. Both the lumps were

firm to hard in consistency and freely mobile. The overlying skin appeared unremarkable. There was no evidence of any lymphadenopathy in the axilla. A complete blood count revealed mild anemia. Her other routine investigations were within normal limits. Ultrasound examination showed two lumps in the left breast measuring 5.5 x 5.0 cm and 2.0 x 2.0 cm. A diagnosis of fibroadenoma, left breast was suggested for both lumps. On fine needle aspiration cytology, a diagnosis suggestive of fibroadenoma was made for both lumps. The mass was excised and the lumpectomy specimen was sent for histopathological evaluation. The postoperative specimen showed two circumscribed masses measuring 5.5 x 5.0 cm and 2.0 cm x 2.0 cm (Figure 1). The cut surface of the larger mass was firm and grey-white in colour. The cut surface of the smaller mass was firm, grey-white, and showed slit-like spaces. Histopathological examination of the larger mass revealed haphazardly arranged mammary tissue embedded in dense fibrous stroma with a variable amount of adipose tissue. Breast ducts were lined by benign epithelial and myoepithelial cells (Figure 2A). Dilated and ectatic ducts with apocrine metaplasia were also noted at places. Sections from the smaller mass showed proliferation of glandular and stromal components exhibiting mixed intracanalicular and peri-canalicular patterns of growth. Glands were lined by bilayered epithelium showing stratification and apocrine change at places and surrounded by fibro-myxoid stroma. No evidence of atypia or necrosis was noted (Figure 2B). Based on these findings, a diagnosis of Hamartoma and Fibroadenoma, left breast was made. The postoperative course was uneventful and the patient was discharged and was under regular follow-up till the writing of this report.

Figure 1: Two circumscribed masses measuring 5.5 x 5.0 cm (marked with arrow) and 2.0 x 2.0 cm. The cut surface of the larger mass is firm and grey-white. The cut surface of the smaller mass is firm, grey-white, and shows slit-like spaces.

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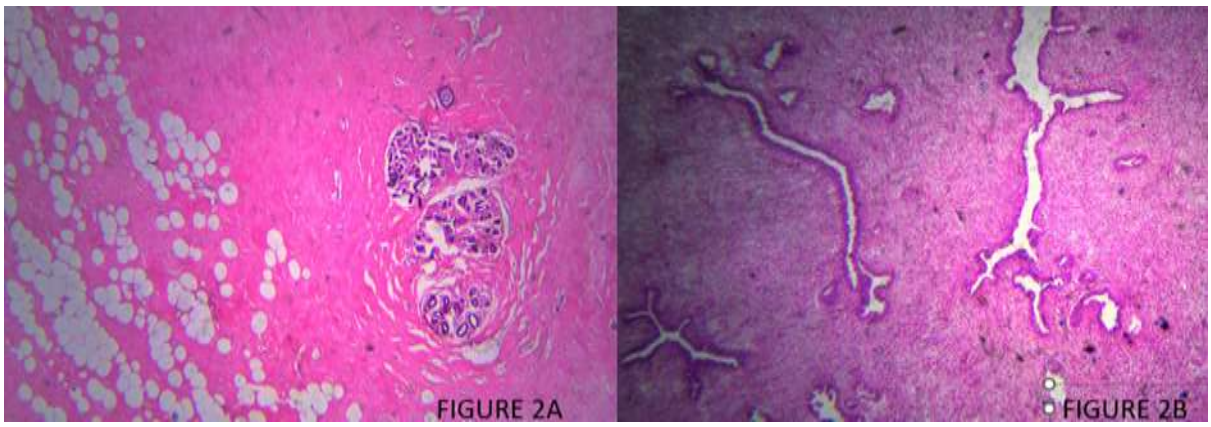
Figure 2(A) – Section shows haphazardly arranged mammary tissue embedded in dense fibrous stroma with a variable amount of adipose tissue (H&E, 4x10 X)

Figure 2(B)- Sections show proliferation of glandular and stromal components. Glands are lined by benign epithelium and myoepithelial cell layer and are surrounded by fibro-myxoid stroma (H&E, 4x10 X).



Discussion

Breast hamartoma is a rare benign lesion comprising 4.8% of all benign breast masses [1,2,5]. The lesion was first described by Hogeman and Osbterg [6] in the year 1968 and two years later, in 1971, Arrigoni et al. coined the term "hamartoma" [7]. The term "hamartoma" is a Greek word meaning "bodily defect" [5].

Hamartomas are rare, benign lesions occurring in various organs mainly lungs, kidneys, and breast [1]. Breast hamartomas are an admixture of glandular epithelial, fibrous, and adipose tissue arranged in a disorganized manner [1, 5]. Smooth muscle and chondroid elements may also be present at times.

The lesion is more common in females [1,2,5] and occurs in a wide age range from teens to women in their 80s; the commonest age group being perimenopausal females in their 40s [1]. The patient in the index case was a 31 years old female. Unilateral, solitary lesions are more common [1,2,4] although few case reports of bilateral and multiple hamartomas have been found in the literature. The right breast is affected more commonly than the left breast [1] unlike what we observed in our case. Clinically, breast hamartomas are painless, mobile, soft to firm lumps typically found in the outer breast quadrants usually mimicking fibroadenoma [1,2,8]. Similar was the presentation in our case.

The etiopathogenesis of hamartoma is still unknown, but it is strongly postulated that breast hamartoma is probably a developmental anomaly rather than a neoplastic process [1,2,9]. Estrogen and progesterone, the female sex hormones are believed to play a role in its causation [1,9]. Both epithelial and stromal components are positive for estrogen and progesterone receptors [10,11]. A genetic syndrome, Cowden's syndrome, is characterized by the presence of multiple breast hamartomas. Also, genetic alterations involving chromosomal regions 12q12-15 and 6p21 has been described [1,11].

Several types have been described depending upon the composition: adenolipoma (composed of epithelial and adipose tissue), fibroadenolipoma (composed of fibrous, epithelial, and adipose tissue), and myoid hamartoma which shows prominent smooth muscle proliferation [1]. Recurrence is known to occur in a few cases of breast hamartoma which according to Amir et al [1] & Bhatia et al [5] actually represent the multifocality of the lesion. Hamartomas are usually not associated with malignancies, and only a few studies have reported an associated invasive breast carcinoma [1,9,12,13]. This makes the correct identification and follow-up of cases of hamartoma important and essential.

On ultrasonography, hamartomas are described as well-circumscribed lesions with a smooth outer border and hyperechoic or heterogeneous internal echogenicity [14]. Sometimes, they may mimic a fibroadenoma radiologically when rich in fibrous tissue [1]. In the index case also, a diagnosis of fibroadenoma was made on ultrasound. Needle core

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biopsy and fine needle aspiration cytology are sometimes not very helpful in diagnosing hamartomas and differentiating them from their mimickers [7,9,10,15,16] as was seen in our case. The diagnosis can only be confirmed after histopathological examination of the excised mass [9]. In the present case, all the clinical, radiological, and cytological findings were pointing toward a diagnosis of fibroadenoma. A confirmatory diagnosis of hamartoma could be made after histopathological examination only.

Grossly, hamartomas are round to oval well-circumscribed masses and can measure up to 20 cm in size [1]. The cut surface may resemble normal breast parenchyma or fibroadenoma, depending upon the consistency of the lesion [1]. In the present case both the lesions were well demarcated and their cut surface had almost the same features. So, at times the hamartoma cannot be distinguished from fibroadenoma on gross examination as they both may have a similar gross appearance.

Hamartoma lacks a distinct appearance pathologically [1,2,5,17]. Histopathological examination usually reveals a well-circumscribed lesion with haphazardly arranged normal breast components such as mammary duct, terminal ductal lobular unit, adipose tissue, and fibrous stroma with areas of hyalinization [7,14,16,17]. Adipose tissue was present in more than 90% of the cases, and constitute around 10-20% of the lesion volume [9, 17]. Pseudo-angiomatous stroma, adenosis, fibrocystic changes, and usual epithelial hyperplasia with or without concomitant apocrine metaplasia are commonly seen in cases of breast hamartoma [1,9,14,16]. In the index case, mammary tissue was seen embedded in dense fibrous and adipose tissue. Dilated and ectatic ducts with apocrine metaplasia were also noted in the present case. Other rare features described in the literature include microcalcification, myoid differentiation, stromal edema, and stromal giant cells [7,9,14,16]. None of these features were present in our case.

Surgical excision of breast lesion is believed to be curative and they have an excellent prognosis.

Keeping the diagnostic pitfalls in mind, identification of this entity requires a good correlation between clinical, imaging, and pathological findings. The accurate diagnosis of hamartoma is important because of the chances of recurrence and association with invasive breast carcinoma.

Conclusion

This case report brings to light the coexistence of hamartoma with fibroadenoma as a discrete mass in the same breast which is a very rare occurrence. Breast hamartomas are rare benign lesions composed of a haphazard admixture of normal breast components including glandular, fatty, and fibrous tissue in varying proportions. The entity is often missed in radiology, FNAC, and core needle biopsy; therefore, histopathological evaluation is pertinent to diagnosis. Although considered benign, recurrence and association of hamartoma with carcinoma have been seen, hence making a correct diagnosis is essential and important.

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