Breast hamartoma: An underrecognized entity

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ABSTRACT

Hamartoma is a rare benign tumor of the breast. Pathologically, hamartomas are also labeled as lipofibroadenoma, fibroadenolipoma, or adenolipoma. This is due to a benign proliferation of the fibrous, glandular, and fatty component of the breast tissue surrounded by connective tissue capsule. Here, we report the case of a 60-year-old female patient who presented with a lump in the left breast for 4 months. Fine-needle aspiration cytology suggested the entity to be a benign cystic lesion. Lumpectomy was done and the cut surface showed cystic and solid areas. Histopathological examination revealed several irregular tissue fragments showing mammary glandular tissue with a prominent lobular arrangement, fibrous stroma, and fibroadipose tissue with the presence of papillary metaplasia at few places and confirmed it to be the hamartoma of the left breast.

Keywords: *Breast hamartoma, Cystic lesion, Lipofibroadenoma, Papillary metaplasia*

Breast hamartoma is a benign lesion of the breast. It is also referred to as lipofibroadenoma, fibroadenolipoma, or adenolipoma based on their predominant components [1]. The term hamartoma was first coined by Arrigoni *et al*., in 1971, as a well-circumscribed breast lesion with varying amounts of benign epithelial elements, fibrous tissue, and fat [2]. It typically occurs in women after 40 years of age and presents as a painless lump or unilateral breast enlargement without a lump. It occurs due to the benign proliferation of fibrous, fatty, and glandular tissue surrounded by a connective tissue capsule [3]. As these components are seen in the normal breast, hence, it is called as hamartoma.

Macroscopically, they are soft, larger, well-defined, pinkish-white, and fleshy with an island of yellow fat tissue [3]. Clinically, it looks like a giant fibroadenoma. Calcification, ductal hyperplasia, apocrine metaplasia, and adenosis may also occur. Rarely, lobular or ductal intraepithelial neoplasms are seen. Usually, hamartomas are benign, but there can be a possibility of malignant transformation also, hence, excision and histological examination should be used to rule out the malignant transformation [4]. Simple excision is enough for the treatment if there is no coincidental epithelial malignant lesion. Many authors consider this entity to be underdiagnosed. With the awareness and advancement of the diagnostic modalities including mammography, fine-needle aspiration cytology (FNAC), ultrasound, and core biopsy, more number of hamartomas can be diagnosed. Among these, FNAC remains the investigation of choice, but histopathology is the gold standard.

CASE REPORT

A 60-year-old patient presented to the department with the complaint of a lump in her left breast for 4 months. The patient felt the lump while bathing and had no complaints of pain, increase in size of the breast or nipple discharge since she noticed the lump. Family history was negative for the breast lump.

On examination, her vital parameters were normal. There were no pallor, icterus, clubbing, and generalized lymphadenopathy. On local examination, a lump of size 5 cm × 4 cm was palpable in the lower inferior quadrant of the left breast. It was firm, non-tender, and mobile. Nipple-areola complex was normal and there was no left axillary lymphadenopathy. The right breast and axilla were normal. On systemic examination, her central nervous system, cardiovascular system, respiratory system, and per abdomen examination were within normal limits.

Her blood investigations such as complete blood count and kidney and liver function tests were done which were within normal limits. Ultrasound of the breast was performed and a well circumscribed, solid lesion without any intralesional microcalcification was seen. Internal echotexture was mixed with both hyperechoic and hypoechoic components.

Considering the age of the patient, a provisional diagnosis of the carcinoma of the left breast was kept. FNAC from the lump was done and it was suggestive of a benign cystic lesion. Thus, decision to perform the excision of the lump was taken. An infra-areolar incision was given, with dissection and excision of the lump was done. On gross examination, the swelling was cystic with irregular margins. A cut surface of the lump shows

the evidence of cystic swelling with clear fluid. Multiple irregular soft tissues with whitish and yellowish areas were seen.

The specimen was sent for histopathological examination which revealed several irregular tissue fragments showing mammary glandular tissue with a prominent lobular arrangement. Fibroadipose and fibrous stroma tissue with a presence of papillary metaplasia at few places were suggestive of hamartoma of the left breast. The patient was discharged and called for follow-up after 1, 3, and 6 months which was uneventful and the patient was asymptomatic.

DISCUSSION

Breast hamartoma has a variable presentation on sonography, which helps for differential diagnosis. Hamartomas occur in the same location as the normal tissue (in the tissue of its origin) as opposed to choristomas, which grow in other tissues. The pathogenesis of hamartomas consists primarily of the disorganized replication of normal tissue cells. The underlying mechanism for the replication abnormality is not fully understood. Hamartomas arise from connective tissue and are generally formed of cartilage, fat, and connective tissue cells, although they may include many other types of cells. Hamartomas grow at the same rate as the organ from whose tissue they are made.

Breast hamartoma may present as a painless lump. It is difficult to palpate a small lump as it feels like normal breast tissue. In Cowden disease, the breast hamartoma is related to genetic defect like an autosomal dominant disorder with multiple hamartomas of all three germ layers. In Cowden's disease, there is an increased risk of the breast, thyroid, and endometrial neoplasia [5]. Our patient did not have Cowden's disease. Kopans *et al*. have described the ultrasonic findings as sonolucent adenomatous tissue interspersed with echogenic septa of fat and fibrous tissue [6].

On breast ultrasound or mammography, the examination and the diagnosis of hamartoma are confirmed. Mammography shows well-defined areas of both soft tissue and lipomatous elements surrounded by a thin radiolucent zone [7]. Tissue calcification may be an additional finding. The characteristic mammographic appearance is a circumscribed mass of mixed fatty and soft tissue elements with a thin pseudocapsule [8]. Ultrasound is less useful in diagnosing the breast hamartoma. A well-defined solid hypoechoic mass with posterior acoustic shadowing and radiolucent hollow and compressible lesion is suggestive of hamartoma. When a mammographic round mass with a radiolucent halo corresponds to an oval heterogeneous mass surrounded by an echogenic or echolucent circle on a sonogram, the confirmation of hamartoma can be done [9]. Hamartoma is highly compressible as this characteristic is related to the overproliferation of matured fat-containing normal breast tissues. Black *et al*. pointed out that in their mammographically and clinically detected hamartomas, most have heterogeneous echogenicity without posterior acoustic shadowing [9].

According to a study by Sevim *et al*., the breast hamartomas are rare benign lesions that may be underdiagnosed due to the categorization of hamartomas as fibroadenomas by pathologists. Pathologic examinations can show variability from one case to another. Thus, the true incidence may be higher than the literature indicates [10]. A case series of 14 cases was conducted by Amir *et al*. and they concluded that the breast hamartoma is a rare benign lesion. It is underdiagnosed and thus underreported. However, there are increasing rates of breast hamartoma diagnoses due to the huge surge of the usage of breast diagnostic procedures such as ultrasound and mammography.

Breast hamartomas are rarely associated with malignancies and a few cases of breast invasive ductal carcinoma from hamartoma were described in the literature; however, the correlation is unproven. Total surgical excision is considered curative, but recurrence is seen in about 8% of reported cases [11]. Usually, total excision is the treatment of choice.

CONCLUSION

More often, the diagnosis of hamartoma is incidental in women older than 40 years. Although imaging features may be similar to those of fibroadenoma, the definitive diagnosis is only through histological diagnosis. Very rarely, the hamartoma can turn into the malignant tumor. However, the resection of the hamartoma of the breast is always recommended.

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