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Original Research Article

Breast hamartoma: A clinicopathological analysis and management of cases in our institute over the past decade

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Abstract

Aims and Objectives: This study shares our journey with breast hamartoma at our institute VIMSAR, BURLA over the past decade (2014-2024).
Background: Breast hamartoma, a rare type of breast tumor, makes up about 4.8% of all benign breast masses. People don't talk about it often. The cause still a bit of a mystery. Many folks don't know much about its unique and features. Because of this, doctors & pathologists sometimes miss the diagnosis.
Materials and Methods: We looked back at our surgery department records from 2014 to 2024. We wanted to find patients who had been diagnosed and operated on for breast hamartomas during this time at VIMSAR (Veer Surendra Sai Institute of Medical Sciences and Research) in Burla.
Results: In total, we found 12 cases of breast hamartoma operated in VIMSAR's (Veer Surendra Sai Institute of Medical Sciences and Research) General Surgery Department. All the patients were women, and their average age was 38.2 years (with some variation of 10.8 years). The average size of the tumors was 4.2 cm (with a range of 2.6 cm). Every patient got a breast ultrasound before their surgery. The most common extra finding was epithelial hyperplasia, which appeared in 22.2% of cases. We also found lobular carcinoma in situ in one case and invasive ductal carcinoma in another case (8.3% each).
Conclusion: Breast hamartomas are uncommon benign growths that might not get diagnosed correctly since they are often seen as fibroadenomas by pathologists. The results from examinations can really differ from one case to the next! Because of that, we think the actual number might be higher than we think.

Keywords: Breast, Hamartoma, Carcinoma.

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1. Introduction

Breast hamartoma is a rare type of breast tumor. It makes up around 4.8% of all benign breast lumps.[1] This tumor contains lobular breast tissue, along with different types of fibrous, fibrocystic, & fatty tissues.[2] The first description of this lesion was by Hogeman & Osbterg in 1968. Later, in 1971, Arrigoni and others introduced the term "hamartoma."[5] The pathogenesis of the development of a breast hamartoma is still not fully understood. Pathologically, hamartomas lack a distinguishing appearance. And clinically, it is often discovered incidentally during screening mammography, and is underdiagnosed. Nowadays, thanks to more awareness about breast cancer & better screening, these tumors are being diagnosed more often. Still, we don't fully understand how hamartomas develop, & many doctors & pathologists may not recognize them right away. Most of the time, we only find case reports about breast hamartoma in medical literature; wide series are quite rare. Because of this, we wanted to share the clinical findings from twelve patients who had breast hamartoma.

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2. Materials and Methods

We did a review from 2014 to 2024. Twelve patients who were diagnosed and treated for breast hamartoma during these ten years were included in this study at our General Surgery Department VIMSAR, BURLA. We collected their histopathology records, clinical follow-up data, and past breast imaging results. Clinicians and pathologists then analysed this information again.

3. Results

In **Table 1**, you can see the demographic features, tumor sizes, imaging procedures before surgery, pathologic results, and treatment options. Most patients had soft-to-firm lumps in their breasts that didn't hurt. A couple of patients noticed some breast asymmetry too. Every patient underwent breast ultrasound (US) as the first imaging test before surgery. Mammograms were done on three cases as well. Nine of these cases had characteristics that looked like fibroadenoma or hamartoma. For two patients (16.6%), US showed some irregular borders; fine-needle aspiration cytology (FNAC) was done for them too and found benign results.

Table 1:

Number of Patients	12
Age , mean +/- SD	38.2 +/- 10.8
Gender	Female(All)
Tumor size, mean +/- SD	4.2 +/- 2.6
LCIS	1(8.3%)
IDC	1(8.3%)

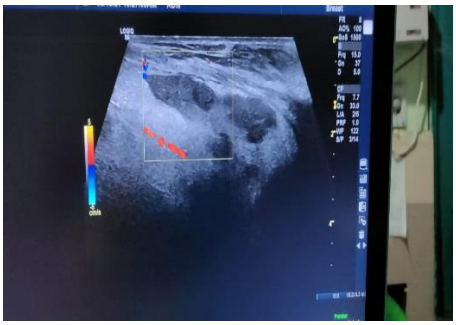

Figure 1: Usg imaging of the hyperechoic mass with varied echogenicity

Figure 2: Clinical picture of right breast hamartoma

Figure 3: Intra OP imaging of the encapsulated mass

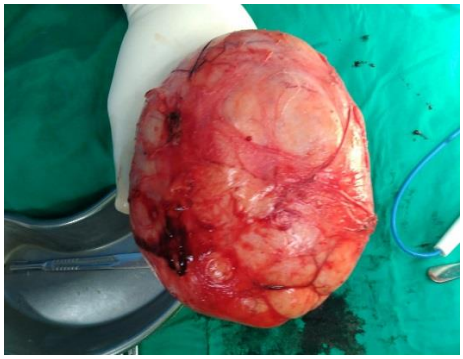

Figure 4: Excised specimen of the breast hamartoma

Figure 5: Post OP image after excision of the mass

When looking carefully at the pathology reports, most often we saw a well-defined mass that had normal breast components—like a terminal ductal lobular unit, some fat, & a hyalinized stroma. The lesions frequently had changes that are fibrocystic and sometimes columnar cell changes or adenosis too. Notably, six patients (49.8%) didn't show any proliferative lesions at all! The most common additional finding was ductal epithelial hyperplasia found in two patients (24.9%). We did find lobular carcinoma in situ (LCIS) in one case & invasive ductal carcinoma (IDC) in another case close to the hamartoma (8.3%). For the patient with IDC, they underwent mastectomy along with sentinel lymph node biopsy while other patients had lumpectomies instead.(**Figure 1-Figure 5**)

4. Discussion

Breast hamartomas are quite rare. They're benign tumors in the breast. A long time ago, in 1928, they were first called mastomas by a doctor named Prym.[3] Since then, cases have been reported and sometimes called adenolipomas or fibroadenolipomas.[4] Arrigoni and others introduced the term "hamartoma."[5] Hamartoma is referred to as myoid hamartoma, a rarer form, when it shows a significant smooth muscle component. This term was first used by Davies and Riddell[6] in 1973.These unusual growths can happen not just in breasts but also in other parts of the body like the lungs and kidneys. What makes up a breast hamartoma? Well, it's a mix—there's glandular tissue, fat, & fibrous tissue all mixed together. The exact way these develop is still unknown. However, many believe it happens due to some kind of abnormality during development instead of it being a full-on neoplastic process. Female hormones, especially oestrogen & progesterone, play a role too. Some studies show both types of hormone receptors exist in these hamartomas.

For instance, Chiacchio et al. found that out of 10 breast hamartoma cases, 9 were positive for both oestrogen and progesterone receptors. The last one was positive for estrogen but negative for progesterone. Herbert et al., years later in 2002, found similar results in his own study with 24 cases.[7] Now about the smooth muscle part: it's not entirely clear where it comes from. Some thoughts suggest it might arise from vessels or even from the nipple area or specific cells in breast tissue known as myoepithelial cells.[8] There's also a theory that changes (metaplasia) in breast cells could turn them into smooth muscle cells. The existence of CD34 on smooth muscles[9,10] is an important sign of the metaplasia of stromal cells into smooth muscle cells, but there are no clear data on this subject.

Literature says these tumors, show strong positivity for SMA, desmin & vimentin when looked at under special staining techniques.[11] According to Charpin et al., about 4.8% of benign breast tumors are hamartomas based on a big study back in 1994. When looking at patients with breast hamartomas from various studies, their ages typically range from 33 to 66 years old—though they can occur at younger ages too! These lumps are generally painless and feel either soft or firm. They're mostly found in the outer parts of the breast[12] which can confuse doctors into thinking they're something else like fibroadenomas. Interestingly enough, nearly 60% of these tumors can't be felt during an exam and are picked up through imaging methods instead! Techniques like ultrasound and mammography are really helpful here. On ultrasound, these lesions usually appear well-defined with smooth edges and can look hyperechoic or mixed inside. A missed sign is the absence of a specific acoustic shadowing that helps tell benign from malignant.

In our findings involving patients aged between 19 to 56 years (with an average age of around 38), we see there was only one person under age 20 while three were over age 50.

With more people paying attention to their health and using advanced screening tools like mammograms or MRIs more frequently, we expect to see more reports of these hamartomas popping up. When looking at mammograms specifically for hamartomas: they tend to look pretty clear with fat tissue along with different amounts of fibrous or adenomatous tissues with smooth edges sometimes even having a thin envelope around them!

In ultrasound exams, you'd find sonolucent fat along with varied internal echo patterns due to fibrous stuff inside them too! MRI also helps by showing a nicely defined rim around these lesions with internal changes mixed with fat densities.

For our study—ultrasound was the first method used for every patient & we paired it with mammography for three of them! MRI was just used once—only for one patient who had invasive ductal carcinoma (IDC). It's important to note that experts don't fully understand all the features tied to these hamartomas yet—and classifications vary! McGuire suggest categorizing them based on how much fat vs fibrous tissue they have;[13] Jones et al. propose four distinct groups including types like encapsulated fibrocystic changes.[14]

There's some debate on particular signs that set them apart from other conditions like fibroadenomas— which might confuse things more!

Now about cancer ties; finding cancer linked with hamartomas isn't very common though some have reported rare cases which need careful review when spotted.[15-20]

In our study, we noted IDC just once alongside lobular carcinoma in situ (LCIS) once too despite noting some hyperplasia cases – however—it's advised those diagnosed with hamartoma should undergo surgery right away instead of waiting.

5. Conclusion

We shared experiences from 12 patients dealing with hamartomas—a mix of usual breast tissues including glandular parts plus fatty bits too! Even if they're rare benign issues—they can grow quite large so diagnosing correctly is key! Using core needle biopsy combined with clinical checks is vital since many pathologists might mislabel these as fibroadenomas instead—this could mean we aren't seeing all cases out there which might cause underreporting! It's super important for clinicians—especially surgeons—to recognize this condition as one option when looking at possible issues within a breast lump—especially if it looks clearly defined.

6. Source of Funding

None.

7. Conflict of interest

None.

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