Original Research Article

An institutional retrospective study done on fibroepithelial lesions of breast

S. Kirthika1, V Sudha1,*

1 Dept. of Pathology, Saveetha Medical College Hospital, Chennai, Tamil Nadu, India

ABSTRACT

Aim: The primary objective is to study the incidence of various fibroepithelial lesions of breast (FEL) in different age groups. The secondary objective is to study the FEL based on histopathological features and corresponding occurrences of patterns in different age groups

Materials and Methods: It is a retrospective study conducted in the department of pathology, Saveetha medical college. A total of 102 fibroepithelial lesions were taken from the pathology register from the period of June 2018 to December 2018 along with the age and radiological features if present.

Result: Out of 102 cases, 92 were simple fibro adenomas; 3 were giant fibroadenomas, 2 were complex fibro adenomas, 1 juvenile and 4 were phyllodes tumour. The commonest group of fibroepithelial lesions of breast studied was fibro adenoma between the age group of 15 and 30. Most of the histopathological patterns showed cystic dilatation 30% which was followed by hyalinization 25% and epithelial hyperplasia. While the phyllodes tumors were recorded under the age group of 35 to 45.

Conclusion: Our findings highlight the important aspects of the interpretation and reporting of fibroepithelial lesions of breast.

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1. Introduction

Mammary fibroepithelial lesions consist of a wide spectrum of tumors ranging from simple fibro adenoma to most fatal malignant phyllodes tumor. Micro anatomy of breast reveals 2 types of tissue components: epithelial and stroma. In a fully developed non lactating female breast the epithelial component comprises less than 10% of the total volume but is more significant pathologically since majority of lesions pertain to this portion of the breast.

Fibroadenoma is a benign biphasic tumor of fibrous and epithelial elements. It is the most common benign tumor of the female breast. Though it can occur at any age during reproductive life, most patients are between 15 and 30 years of age. Though the etiology of fibro adenoma is not known, hormonal relationship is likely since they persist during the reproductive years. They can increase in size during pregnancy or with estrogen therapy, and usually regress after menopause.

Phyllodes tumor is a very rare breast tumor and accounts for less than 1% cases. (It develops from the cells in the stroma of the breast. It is also called cystosarcoma phyllodes. These tumors are usually benign, but they can cause malignancy leading to breast removal. Phyllodes tumor can be classified into benign borderline and malignant on the basis of histological features of stromal cells. Local recurrences are much more frequent than metastases.

Differentiation of fibro adenoma from phyllodes may be challenging for the pathologist as both of them have more similar features. Phyllodes tumor is distinguished from fibro adenoma histologically by presence of more cellular connective tissue.

2. Materials and Methods

A retrospective study view from medical records of patients diagnosed with fibroepithelial lesions at Saveetha medical college and hospital between 2017-2018 was
performed. The demographic details such as age of the patients were collected from the histopathological records. The corresponding pathological findings and radiological features if present were recorded. Patients were categorized into productive age groups. Patients diagnosed with various fibro epithelial lesions were categorized based on age, laterality, radiological features and histopathological patterns.

3. Results

In this study 102 cases of fibro epithelial lesions were taken from the pathology register from the period of June 2018 to December 2018. The most common diagnosis was fibro adenoma under the age group of (21-30) followed by (41-50).

Out of 102 cases, radiological features were obtained for 75 cases. Majority of cases were seen under birads2 followed by birads 3 and so on as given in the Table 1. Most of the phyllodes tumor had circumscribed margins with calcifications seen frequently.

Most of the fibro epithelial lesions were seen between 21-30 out of 98 fibro adenoma cases most of them were reported under the age group of 15 to 30 whereas phyllodes tumors were reported between the age group of 35 to 45.

4. Discussion

Most common fibro epithelial lesion seen in this study was fibro adenoma which constitute about 97% [n=97] of cases reported whereas incidence of phyllodes tumor is rare and only 4% (n=4) were seen. Based on various studies it is estimated that 10% of world’s population suffers from fibro adenoma once in lifetime. So FEL of breast are broadly studied under various categories like age, laterality

Fig. 1: Fibroadenoma showing intra canalicular pattern

Fig. 2: Fibroadenoma showing apocrine changes

Fig. 3: Fibroadenoma showing epithelial hyperplasia

Fig. 4: Phyllodes Tumour
Table 1: Distribution of cases based on Radiological pattern

| Imaging Pattern | Fibro adenoma |
|-----------------|---------------|
| BIRADS 1        | NIL           |
| BIRADS 2        | 45            |
| BIRADS 3        | 27            |
| BIRADS 4        | 3             |

Table 2: Distribution of cases based on age and laterality

| Age     | No. of cases | Fibro adenoma | Phylloides tumor | Laterality - Right | Laterality - Left |
|---------|--------------|---------------|------------------|--------------------|-------------------|
| 15 – 20 | 35           | 36            | -                | 20                 | 15                |
| 21-30   | 45           | 46            | -                | 20                 | 25                |
| 31-40   | 10           | 9             | 2                | 4                  | 6                 |
| 41-50   | 5            | 4             | 2                | 2                  | 3                 |
| 51-60   | 3            | 3             | -                | 2                  | 1                 |

Table 3: Histological patterns in fibro adenoma

| Histological patterns                | Fibro adenoma |
|--------------------------------------|---------------|
| Intra and Pericanalicular change     | 98            |
| Apocrine change                      | 20            |
| Periductal hyalinization             | 5             |
| Parenchyma showing hyalinization     | 9             |
| Fibrocystic change                   | 20            |
| Cystically dilated ducts             | 30            |
| Epithelial hyperplasia               | 10            |

and histopathological features for better understanding and diagnosis. There are about 4 types of fibro adenoma. Simple fibro adenomas look similar all over when viewed under microscope. Complex fibro adenomas are bigger and tend to affect older women. The cells have the tendency to grow rapidly. It is often accompanied by epithelial calcifications, sclerosing adenosis and cysts larger than 3 mm. Juvenile fibro adenomas are the most common type of breast lump found in girls and adolescents between the age of 10 and 18. They can grow large, but usually shrink over time while some disappear. Giant fibro adenomas can grow larger than 2 inches. They may need to be removed if they press on or replace other breast tissue. It is important to note that the histological features of the fibro adenoma influence the risk of breast cancer. The risk of subsequent breast cancer is slightly elevated only if the fibro adenoma is complex, if there is adjacent proliferative disease, or if there is a family history of breast cancer. For the majority of women with simple fibro adenomas, there is no increased risk of developing breast cancer.

In a study of 98 fibro adenoma cases the peak incidence was seen between age group of 15 and 30. Incidence was seen higher among women in reproductive age groups. These findings are consistent with similar studies from Naveen et al, shukla et al, Nigrom MD organ ch jr. The major reason for this incidence may be increased sensitivity of breast tissue to female reproductive hormone estrogen which apparently reduces with age hence incidence of fibro adenoma reduces with increased age group. However it can occur at any age in females.

Regarding the laterality of the disease, 53% were reported on the left side and 49% was seen on the right side.

Regarding the biopsy out of 102 patients 77% (n=75) underwent excision and 25% underwent trucut biopsy. Of 75 patients’ excised majority of cases seen was fibro adenoma which constitutes about 73% of total cases reported. Most common presentation was breast lump or palpable mass in which trucut biopsy was done to provide...
tissue for the diagnosis of malignancy before definitive treatment and remove the need for formal excision biopsy of lesions for which there is low index of suspicion. This was eventually done in about 24 patients who constitute about 25% of the total number of cases reported. Similar findings were reported in a study done by marcil Wong parsyan.9

Out of 4 phyllodes tumor all of them come under benign category of phyllodes tumor. No malignant phyllodes tumor was id entified. According to reports, 85 to 90 % of phyllodes tumor are benign whereas only 10 to 15 % are malignant.9 Both the cases were seen under the age group of 35 to 45. Excision was done in both the cases. However chances of local recurrence after excision are always present especially in lesions that show malignant histology. It is similar to evidences reported in study by pezner RD.12,13

The most common histological pattern found in fibro adenoma was cystic dilatation (40%) followed by apocrine change (10%) and ducal hyperplasia (15%) as given in Table 3.

Whereas in case of phyllode tumor increased hyper cellular stroma which not only occurs in PT but also in fibro adenoma so it cannot be used as a differentiating factor.14

Out of 102 cases only 75 cases were subjected to ultrasound. On a preoperative ultrasound, hyper echoic lesions with nodular opacities were commonly seen in upper inner segment of breast which constitutes about 50% of the cases with a birads score of 3 in 70% cases.

BIRADS is Breast Imaging Reporting and Data. It is divided into various categories based on the findings.

1. BI-RADS 0 : incomplete
2. BI-RADS 1 : negative
3. BI-RADS 2 : benign
4. BI-RADS 3 : probably benign
5. BI-RADS 4 : suspicious for malignancy
6. BI-RADS 5 : highly suggestive of malignant
7. BI-RADS 6 : kn own biopsy-proven malignancy

A high score of birads >4 with heterogeneous echo texture is associated with upgrading of fibro adenoma to phyllodes tumor.12

Only 3 cases were reported under BIRADS 4 category after FNAC was concluded as complex fibro adenoma.

5. Conclusion

Most of the fibro epithelial lesions of breast were under the age group of 21-30 of which fibro adenoma was the most seen diagnosis. Phyllodes tumor is rare. Awareness of the morphologic features of FELs in adolescents is of immense importance to avoid over diagnosis and misdiagnosis of Phyllodes, which can lead to additional unnecessary and potentially disfiguring surgery.15

6. Source of Funding
None.

7. Conflict of Interest
None.

References
1. Robbins basic pathology . 10th edition THE BREAST ;.
2. Jacklin RK, Ridgway PF, Ziprin P, Heady V, Hadjiminas D, et al. Optimising preoperative diagnosis in phyllodes tumor of the breast. J Clin Pathol. 2006;59:454–459.
3. Bode MK, Rissanen T, Apaja-Sarkkinen M. Ultrasonography and core needle biopsy in the differential diagnosis of fibroadenoma and tumor phyllodes. Acta Radiol. 2007;48:708–713. PubMed.
4. Komenaka IK, El-Tamer M, Pile-Spellman E, Hibshoosh H. Core needle biopsy as a diagnostic tool to differentiate phyllodes tumor from fibroadenoma. Arch Surg. 2003;138:987–990. PubMed.
5. Rose; Rosen’s breast pathology 3rd Philadelphia. Lippincott Williams & wilkins ; 2008,.
6. Hoda SA, Brogi E, Koerner FC, Rosen PP. Rosen’s Breast Pathology. 4th. Philadelphia: Lippincott Williams & Wilkins ; 2014,.
7. Naveen M, Mahajan A, Mahajan V. A clinical study of benign breast disease in rural population. J Evl Med Dent. 2013;2(30):5499–5511.
8. Hari S,Shukla sk.benign breast disorders in non western populations. J Pathol. 2010;56:489–500. PubMed.
9. Wei J, Tan YT, Cai YC, Yuan ZY, Yang D, et al. Predictive factors for the local recurrence and distant metastasis of phyllodes tumors of the breast: a retrospective analysis of 192 cases at a single center. Chin J Cancer. 2014;33(10):492–500.

Author biography
S. Kirthika Student
V Sudha Assistant Professor

Cite this article: S. Kirthika, Sudha V. An institutional retrospective study done on fibroepithelial lesions of breast. J Diagn Pathol Oncol 2019;4(4):268-271.