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# Profile of patients with breast diseases subjected for histopathological diagnosis

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**Abstract**
Breast tissue reacts to estrogen and progesterone stimulation, not only during puberty, pregnancy and lactation, but during each menstrual cycle. As the menopausal period is approached and postmenopausal period evolves, progressive atrophy of the epithelial and connective tissue components of the breast occurs. The loose connective tissue becomes dense and hyalinized and finally, the lobule is converted into ordinary stroma which in the process of involution is replaced by fat. All patients undergoing core needle biopsy of breast were selected for the study. An informed consent will be taken for the procedure. Under local anesthesia using 14 G needle, ultrasound guided core needle biopsy will be performed by radiologist. The biopsy specimen will be sent to histopathology department in 10% formalin. The tissue will be processed, stained with haematoxylin and eosin and examined microscopically. In present study, the most common presenting complaint is breast lump comprising of 59 cases (98.3%). Out of 59 cases 31 cases (51.7%) had lump on left side, 28 cases (46.7%) had lump on right side.1 case had no lump (1%). In the present study 41 cases underwent mammogram, 24 cases (58.5%) showed BIRADS 5 scoring followed by BIRADS 4 in 12 cases (29.3%) and BIRADS 2 in 5 cases (12.2%).

**Keywords:** profile, breast diseases, histopathological diagnosis

## Introduction

Early differentiation of the mammary gland in fetus is under hormonal control. Growth of the breast is dependent on numerous hormonal factors that occur in two sequences. First at puberty and then during pregnancy [1].

Estrogen is the major influence on breast growth during puberty is which brings growth of the ductal portion of the gland system. Progesterone influences growth of the alveolar components of the lobule. However, single hormone alone or in combination is not capable of yielding optimal breast growth and development. Full differentiations of the gland requires, cortisol, thyroxine, prolactin and growth hormone [2].

Breast tissue reacts to estrogen and progesterone stimulation, not only during puberty, pregnancy and lactation, but during each menstrual cycle.

As the menopausal period is approached and postmenopausal period evolves, progressive atrophy of the epithelial and connective tissue components of the breast occurs. The loose connective tissue becomes dense and hyalinized and finally, the lobule is converted into ordinary stroma which in the process of involution is replaced by fat.

The role of these hormones in the causation of mammary pathologies, though suggestive, remains unclear.

The histologic hallmark of all FAs is concurrent proliferation of glandular and stromal elements. The growth pattern has been referred to as either intracanalicular or pericanalicular. The intracanalicular pattern is produced when the stroma is sufficiently abundant to compress ducts into elongated linear branching structures with slit-like lumens. When the ducts are separated by expanded stroma but they retain the original round profile, the architecture has a pericanalicular pattern [3, 4].

The stromal component may sometimes exhibit focal or diffuse hypercellularity (< 20 years), bizarre multinucleated giant cells, extensive myxoid changes or hyalinization with dystrophic calcification and, rarely, ossification.

Cellular fibroadenomas characterized by prominent cellular stroma, histological features

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overlap with those of benign phyllodes tumor.

The epithelial components can show varying degrees of usual ductal hyperplasia and metaplasia like apocrine or squamous metaplasia. Fibrocystic change, sclerosing adenosis and extensive myopepithelial proliferations can also occur.

Complex fibroadenoma contains cyst <3 mm in size, sclerosing adenosis, epithelial calcifications or papillary apocrine hyperplasia. Diagnosis is associated with a slightly higher relative risk of development of breast cancer [5].

Juvenile fibroadenomas are characterized by increased stromal cellularity with fasicular stromal arrangement pericanalicular epithelial growth pattern and usual ductal hyperplasia that often features delicate micropapillary epithelial projections, occasionally described as "gynaecomastoid"-like due to its resemblance to epithelial changes in gynaecomastia.

Atypical ductal or atypical lobular hyperplasia may involve a fibroadenoma. When confined to the fibroadenoma without involving the surrounding breast epithelium the risk of malignancy is not increased. Lobular carcinoma in situ or ductal carcinoma in situ occasionally develops in fribroadenomas. Invasive carcinoma can also affect often as a result of carcinoma in adjacent tissue extending into the fibroadenoma [6].

The phrase Fibrocystic Breast Disease (FCD) is catch-basin term synonymous with more than 38 terms used to describe the most common type of lesion in the female breast.

The most common of the benign conditions of the breast is fibrocystic change (FCC) and it is defined as enhanced or exaggerated reaction by breast tissue to the cyclic up and down levels of ovarian hormones. It is a disorder of involution which as first described by Sir Astley cooper and Benjamin Brodie.

The involution of a lobule is dependent on the continuing presence of the surrounding specialized stroma. If there is early disappearance of stoma, the epithelial function persists and results in formation of microcysts.

In the same manner there is formation of macrocysts which was described by parks, as a process in which there is obstruction of efferent ductile by fibrous or epithelial debris. The term Fibrocystic Cystic Disease (FCD) has been formally abandoned from a historic standpoint by the college of American Pathologists in reliance on the landmark study of benign biopsies by Dupont and Page, now the term used is fibrocystic Changes (FCC).

## Methodology
**Inclusion criteria-**
1. All palpable breast lesions.
2. All mammogram detected non-palpable breast lesions.

**Exclusion criteria-**
1. Patient not willing to give consent.
2. Palpable breast masses in males.
3. All trucut biopsy cases in which excision/lumpectomy/mastectomy is not done.

All patients undergoing core needle biopsy of breast were selected for the study. An informed consent will be taken for the procedure. Under local anesthesia using 14 G needle, ultrasound guided core needle biopsy will be performed by radiologist. The biopsy specimen will be sent to histopathology department in 10% formalin. The tissue will be processed, stained with haematoxylin and eosin and examined microscopically. Special stains will be done whenever required. Microscopic diagnosis in the core biopsy will be correlated with the diagnosis offered in excision/lumpectomy/mastectomy. IHC (ER, PR and HER2-NEU) will be done whenever required. Sensitivity, specificity and diagnostic accuracy will be calculated.

## Results

**Table 1:** Age distribution of all lesions

| Age | Frequency | Distribution |
| --- | --- | --- |
| 30 and below | 3 | 5 |
| 31-50 | 33 | 55 |
| 51-70 | 24 | 40 |
| TOTAL | 60 | 100 |

In present study, the most common presenting complaint is breast lump comprising of 59 cases (98.3%). Out of 59 cases 31 cases (51.7%) had lump on left side, 28 cases (46.7%) had lump on right side.1 case had no lump (1%).

**Table 2:** Distribution of laterality of lump

| Lump | frequency | Distribution |
| --- | --- | --- |
| Left | 31 | 51.7% |
| right | 28 | 46.7% |
| No lump | 1 | 1.7% |
| total | 60 | 100% |

Second common symptom was lump associated with pain and was seen in 11 cases (18.3%) in the present study.

**Table 3:** Distribution of cases with pain

| Pain | Frequency | Distribution |
| --- | --- | --- |
| Present | 11 | 18.4% |
| Absent | 49 | 81.6% |
| Total | 60 | 100% |

In the present study 7 (11.7%) cases presented with discharge and out of seven 1 case presented with only discharge

**Table 4:** Distribution of cases with nipple discharge

| Discharge | Frequency | Distribution |
| --- | --- | --- |
| Present | 7 | 11.7% |
| Absent | 53 | 88.3% |
| Total | 60 | 100% |

In the present study most of the cases presented with lump in upper outer quadrant (44.7%) with 2 cases presented with lump in lower inner quadrant.

**Table 5:** Distribution of lesions in quadrants

| Quadrants | Frequency | Distribution |
| --- | --- | --- |
| Central | 12 | 14.1% |
| Upper outer | 38 | 44.7% |
| Upper inner | 26 | 30.6% |
| Lower outer | 07 | 8.2% |
| Lower inner | 02 | 2.4% |
| Total | 60 | 100% |

In the present study 41 cases underwent mammogram, 24

cases (58.5%) showed BIRADS 5 scoring followed by BIRADS 4 in 12 cases (29.3%) and BIRADS 2 in 5 cases (12.2%).

**Table 6:** Distribution of lesions on BIRADS

| Birads | Frequency | Distribution |
|---|---|---|
| Birads 2 | 05 | 12.2% |
| Birads 4 | 12 | 29.3% |
| Birads 5 | 24 | 58.5% |
| Total | 41 | 100% |

In the present study out of 60 cases, 36 cases (69%) are malignant, 16 cases (31%) were benign and 8 cases inconclusive on core needle biopsy examination.

## Discussion

**Table 7:** Comparison of age group

| | Age group | Parajuli S *et al.* (2011) [7] | ABMZ Sadik *et al.* (2016) [8] | Singh GR *et al.* (2016) [9] | Present study |
|---|---|---|---|---|---|
| 1. | 30 AND BELOW | 32 (32%) | 36 (27.7%) | 6 (11.11%) | 3 (5%) |
| 2. | 31-50YRS | 249 (28.5%) | 35 (43%) | 22 (40%) | 33 (55%) |
| 3. | 51-70YRS | 4 (4%) | 06 (6.5%) | 23 (42.3%) | 24 (40%) |

In the study conducted by Parajuli S *et al.* (2011) most common age group affected was of 31-50yrs followed by 30yrs and below and 51-70.

In a study conducted in 2016 by ABMZ Sadik *et al.* and Singh GR *et al.* most common lesions age group affected was 31-50yrs followed by 51-70 yrs and 30yrs and below.

In the present study most common age group affected was 31-50yrs (55%) followed by 51-70yrs (40%) and 30 & below (5%). which was correlating with above studies.

**Table 8:** Comparison of cases with breast lump

| Lump | Youk *et al.* (2008) [10] | Kothari *et al.* (2016) [11] | Abhijit Saha *et al.* [12] | Present study |
|---|---|---|---|---|
| | 1141 (47%) | 65 (95%) | 52 (100%) | 59 (96%) |

In the study conducted Youk *et al.*, Kothari *et al.*, Abhijit Saha *et al.* most common complaint was lump.

Abhijit saha *et al.* studies shows lump slightly more on right side 26 (53%) when compared to left 24 (47%).

In present study out of 60 cases 59 presented with lump (96%) which is correlating with above studies. But lump frequency was slightly more on left side 31 (51.7%) than right side (46.7%).

**Table 9:** Comparison of pain

| Pain | Youk *et al.* (2008) [10] | Kothari *et al.* (2016) [11] | ABMZ Sadik *et al.* (2016) [8] | Present study |
|---|---|---|---|---|
| | 4 (9.2%) | 5 (11.5%) | 31 (23.8%) | 11 (18.4%) |

In study conduted by ABMZ Sadik *et al.* in 2016 31 cases (23.8%) presented with pain Kothari *et al.* and Youk *et al.* studies shows 5 cases (11.5%) and 4 cases (9.2%) associated with pain respectively.

In present study out of 60 cases, 11 cases (18.4%) were presented with pain.

**Table 10:** Comparison of cases with discharge

| Discharge | Youk *et al.* (2008) [10] | Kothari *et al.* (2016) [11] | ABMZ Sadik *et al.* (2016) [8] | Present study |
|---|---|---|---|---|
| | 21(17.5%) | 2(4.6%) | 19(14.6) | 7(11.7%) |

In study conducted by ABMZ Sadik *et al.* and Youk *et al.* 19 (14.5%) and 21 (17.5%) cases respectively were presented with discharge.

Kothari *et al.* study shows only 2 (4.6%) cases presented with discharge.

In present study 7 cases (11.7%) were presented with discharge. Out of 7 cases 1 case presented with only discharge without any associated symptoms.

## Conclusion

- The most common age group effected was 31-50 comprising of 33 cases (55%) followed by 51-70 yrs in 24 cases (40 %) and 30& below age group in 3 cases (5%).
- The most common complaints is breast lump in 59 cases (98.3%), followed by pain with lump in 11 cases (19%), 7 cases (11.7%) presented with discharge out of which 1 case (1%) presented with only discharge.

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