

Breast Diseases Managed at a Tertiary Care Center with a Rural Set Up in Rural Area of India: Critical Analysis

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ABSTRACT

Background: Breast diseases are very common throughout the world with wide variety of patterns of presentation across the globe. The study was done in a tertiary care center with rural set up in a rural area of India to know the specific incidence of different breast disorders with respect to age and sex of the patient, best method for early diagnosis, fallacies in clinical diagnosis and to find out the sensitivity of FNAC in correlation with histopathological or surgical confirmation.

Method: This is a prospective study conducted on patients attending outpatient department in a tertiary care center with breast symptoms. It was conducted for a period of two years. Detailed history was noted. They were assessed clinically and their diagnosis was confirmed by cytological (FNAC) or histopathological (biopsy) examination.

Results: 237 cases of breast disease were diagnosed which include 222 females and 15 males. The ratio between benign 210 (88.61%) and malignant 27 (11.39 %) lesions was 7.8:1. Among all the benign breast diseases, ANDI (29.11 %) was the commonest, followed by Fibroadenoma (25.31 %) & Breast abscess (14.35 %) in decreasing order of frequency respectively whereas carcinoma of breast was common in age group above forty years of life.

Conclusion: We conclude from our study that the females

have preponderance over males in breast disorders. Benign breast disorders are more common but overshadowed by carcinoma of breast. Malignant breast disorders present with advanced stage of disease due to illiteracy and lack of awareness. FNAC still is a gold standard for early diagnosis of breast disease.

Keywords: Breast Diseases, Benign, Malignant, Rural area, Management.


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INTRODUCTION

Breast is an organ of female beauty, pride and affection. It is a highly modified sudoriferous gland. Breast lesions are one of the very frequently encountered problems in clinical practice. From childhood to death, the breast is subjected to constant physical and physiological changes that are related to menses, pregnancy and menopause.¹ The wide variety of diseases affecting breast and different approaches in their management i.e. surgical and non-surgical, make it imperative, the need for establishing the diagnosis firmly and accurately before contemplating and carrying out any type of therapy.

Until recently, benign disorders of breast were regarded as relatively unimportant; far more attention was focused on breast cancer. During the past decade there has been increasing interest in benign breast disease because the patient demands investigations and treatment for symptoms of benign breast disease. Also there is interest in premalignant disorders which may increase the risk of breast cancer.

The importance of breast diseases is significant in western countries as incidence of breast cancer is steadily increasing.²

The breast diseases could be as simple as mastalgia or abscess to ferocious diseases like carcinoma. It is a worldwide problem and no race or country is free from this disease. Both, females as well as males of all age groups are prone to the breast diseases but incidence of breast diseases is more common in females as compared to males and benign diseases are common in younger age group whereas carcinoma is more common in older age. Over half of the female population at some moment of their life seeks medical advice for breast problem.³

Breast cancer is the second most common cancer among women in India next of cervical carcinoma. Locally advanced breast cancer constitute about 60 % to 70 % of patients presenting with complain of carcinoma of breast and seeking medical advice.⁴ The management varies according to the hospitals. In this vast country, hospitals vary with basic facilities in rural set up to specialized institutions with modern facilities like medical oncologist, surgical oncologist, radiation oncologist and supporting facilities in metro cities. In rural set up, generally treatment is given invariably in form of radical mastectomy with or with

radiotherapy or chemotherapy. In modern hospitals, management is similar to international standards in form of modified radical mastectomy with radiotherapy, chemotherapy or hormonal therapy as per necessity. Even breast conservative surgeries and breast reconstruction surgeries are performed as per international recommendations in modern metropolitan centres.⁴

We have studied the incidence of breast diseases in our tertiary care center with rural set up where patients generally come from rural area who are from poor socio-economic condition and high rate of illiteracy with poor patient compliance. We have even tried to analysed the breast diseases on various aspects with respect to age, sex, diagnostic methods, fallacies of clinical examination and confirmation on histopathological reports following surgery.

AIMS & OBJECTIVES

- To study the specific incidence of different breast diseases regarding the age and sex of the patient.
- To determine the best diagnostic procedure to diagnose the breast diseases & early diagnosis of the same.
- To determine the fallacies of clinical diagnosis.
- To study the sensitivity of FNAC in breast diseases in co-relation with histopathological or surgical confirmation.

MATERIALS & METHODS

This is a prospective study conducted at a tertiary care center with a rural set up in rural area. The study was conducted for a period of two year from May 2007 to April 2009. Patients attending surgical OPD for one or another breast problem were included. All the patients were symptomatic. Male patients were also included in the study. Detailed history about menarche, marital status, parity, age at various pregnancy and age at menopause were noted. They were assessed clinically and their diagnosis was confirmed by cytological (FNAC) or histopathological (biopsy) examination. Then they were subjected to appropriate treatment. Patients were followed up for a variable duration as demanded by the detected breast condition.

RESULTS

Table 1 shows frequency of various breast diseases. Total 237 cases were diagnosed to have breast diseases out of which 210 (88.61 %) patients suffered from benign breast disease whereas 27 (11.39 %) patients had carcinoma of breast. The ratio of benign and malignant disease was 7.8:1. Among all the benign breast diseases, ANDI (29.11 %) was the commonest, followed by Fibroadenoma (25.31%) & Breast abscess (14.35 %) in decreasing order of frequency respectively.

Table 1: Distribution of breast diseases

NAME OF DISEASE	NO. OF CASES	% OF CASES
BENIGN BREAST DISEASES		
Fibroadenoma	60	25.31 %
ANDI		
Cyclical Mastalgia	52	21.94 %
Non-Cyclical Mastalgia	17	7.17 %
Breast Abscess / Mastitis	34	14.35 %
Tuberculous Mastitis	11	4.64 %
Gynaecomastia	10	4.22 %
Cystosarcoma Phylloides	3	1.27 %
Galactocele	14	5.91 %
Duct Ectasia	6	2.53 %
Lipoma	3	1.27 %
MALIGNANT BREAST DISEASES		
Carcinoma of breast	27	11.39 %
TOTAL	237	100 %

Table 2: Distribution of breast diseases in different sex

NAME OF DISEASE	NO. OF CASES		% OF CASES
	SEX		
	FEMALE	MALE	
BENIGN BREAST DISEASES			
Fibroadenoma	60	00	25.31 %
ANDI			
Cyclical Mastalgia	52	00	21.94 %
Non-Cyclical Mastalgia	17	00	7.17 %
Breast Abscess / Mastitis	34	00	14.35 %
Tuberculous Mastitis	11	00	4.64 %
Gynaecomastia	00	10	4.22 %
Cystosarcoma Phylloides	3	00	1.27 %
Galactocele	14	00	5.91 %
Duct Ectasia	6	00	2.53 %
Lipoma	3	00	1.27 %
MALIGNANT BREAST DISEASES			
Carcinoma of breast	22	05	11.39 %
TOTAL		237	100 %

Table 3: Distribution of Fibroadenoma in different Age group

AGE GROUP	NO. OF CASES	% OF CASES
0 – 9	Nil	Nil
10 – 19	11	18.33 %
20 – 29	29	48.33 %
30 – 39	15	25.00 %
40 – 49	3	5.00 %
50 & Above	2	3.34 %
TOTAL	60	100 %

Table 4: Distribution of ANDI (Cyclical Mastalgia) in different Age group

AGE GROUP	NO. OF CASES	% OF CASES
0 – 9	Nil	Nil
10 – 19	28	53.85 %
20 – 29	17	32.69 %
30 – 39	07	13.46 %
40 – 49	Nil	Nil
50 & Above	Nil	Nil
TOTAL	52	100 %

Table 5: Distribution of ANDI (Non-Cyclical Mastalgia) in different Age group

AGE GROUP	NO. OF CASES	% OF CASES
0 – 9	1	5.88 %
10 – 19	5	29.42 %
20 – 29	8	47.06 %
30 – 39	2	11.76 %
40 – 49	1	5.88 %
50 & Above	Nil	Nil
TOTAL	17	100 %

Table 6: Distribution of Breast Abscess / Mastitis in different Age group

AGE GROUP	NO. OF CASES	% OF CASES
0 – 9	Nil	Nil
10 – 19	06	17.65 %
20 – 29	16	47.06 %
30 – 39	08	23.53 %
40 – 49	04	11.76 %
50 & Above	Nil	Nil
TOTAL	34	100 %

Table 7: Distribution of Tuberculous Mastitis in different Age group

AGE GROUP	NO. OF CASES	% OF CASES
0 – 9	Nil	Nil
10 – 19	01	9.09 %
20 – 29	03	27.28 %
30 – 39	04	36.36 %
40 – 49	01	9.09 %
50 & Above	02	18.18 %
TOTAL	11	100 %

Table 8: Distribution of Gynaecomastia in different Age group

AGE GROUP	NO. OF CASES	% OF CASES
0 – 9	01	10.00 %
10 – 19	04	40.00 %
20 – 29	04	40.00 %
30 – 39	01	10.00 %
40 – 49	Nil	Nil
50 & Above	Nil	Nil
TOTAL	10	100 %

Table 9: Distribution of Cystosarcoma Phylloides in different Age group

AGE GROUP	NO. OF CASES	% OF CASES
0 – 9	Nil	Nil
10 – 19	Nil	Nil
20 – 29	Nil	Nil
30 – 39	02	66.66 %
40 – 49	01	33.34 %
50 & Above	Nil	Nil
TOTAL	03	100 %

Table 10: Distribution of Galactocele in different Age group

AGE GROUP	NO. OF CASES	% OF CASES
0 – 9	Nil	Nil
10 – 19	02	14.29 %
20 – 29	08	57.14 %
30 – 39	04	28.57 %
40 – 49	Nil	Nil
50 & Above	Nil	Nil
TOTAL	14	100 %

Table 11: Distribution of Duct Ectasia in different Age group

AGE GROUP	NO. OF CASES	% OF CASES
0 – 9	Nil	Nil
10 – 19	Nil	Nil
20 – 29	Nil	Nil
30 – 39	05	83.33 %
40 – 49	01	16.67 %
50 & Above	Nil	Nil
TOTAL	06	100 %

Table 12: Distribution of Lipoma in different Age group

AGE GROUP	NO. OF CASES	% OF CASES
0 – 9	Nil	Nil
10 – 19	Nil	Nil
20 – 29	02	66.66 %
30 – 39	01	33.34 %
40 – 49	Nil	Nil
50 & Above	Nil	Nil
TOTAL	03	100 %

Table 13: Distribution of Carcinoma of Breast in different Age group and in different sex

AGE GROUP	NO. OF CASES		% OF CASES
	SEX		
	FEMALE	MALE	
0 – 9	Nil	Nil	Nil
10 – 19	Nil	Nil	Nil
20 – 29	Nil	Nil	Nil
30 – 39	02	Nil	7.40 %
40 – 49	08	02	37.04 %
50 & Above	12	03	55.56 %
TOTAL	22	5	100 %

Table 14: Sensitivity of Clinical Diagnosis of breast diseases in correlation with Histopathological / Surgical Confirmation / FNAC

Name of Disease	Clinical Diagnosis	Final Diagnosis (Histopathological / Surgical Confirmation / FNAC)	Difference in Final Diagnosis	Sensitivity of Clinical Diagnosis
Fibroadenoma	76	60	16	78.95 %
ANDI	60	69	09	86.96 %
Breast Abscess / Mastitis	40	34	06	85.00 %
Tuberculous Mastitis	05	11	06	45.45 %
Gynaecomastia	10	10	Nil	100.00 %
Cystosarcoma Phylloides	03	03	Nil	100.00 %
Galactocele	14	14	Nil	100.00 %
Duct Ectasia	05	06	01	83.33 %
Lipoma	02	03	01	66.67 %
Carcinoma of Breast	22	27	05	81.48 %
TOTAL	237	237	44	81.43 %

Table 15: Sensitivity of FNAC of breast diseases in correlation with Histopathological / Surgical Confirmation

Name of Disease	FNAC	Final Diagnosis (Histopathological / Surgical Confirmation)	Difference in Final Diagnosis	Sensitivity of Clinical Diagnosis
Fibroadenoma	60	60	Nil	100.00 %
ANDI	69	69	Nil	100.00 %
Breast Abscess / Mastitis	40	34	06	85.00 %
Tuberculous Mastitis	05	11	06	45.45 %
Gynaecomastia	13	10	03	76.92 %
Cystosarcoma Phylloides	01 *	03 *	02	33.33 %
Galactocele	14	14	Nil	100.00 %
Duct Ectasia	06	06	Nil	100.00 %
Lipoma	03	03	Nil	100.00 %
Carcinoma of Breast	24	27	05	88.89 %
TOTAL	235 *	237	22	90.71 %

*Two FNAC was inconclusive which later, on histopathological examination following surgery was found to be cystosarcoma phylloides

Table 16: World Incidence of Breast Cancer

COUNTRY	INCIDENCE (Per 1,00,000)
United States Of America	130
United Kingdom	116
Spain	74
Singapore	54
Japan	48
Malaysia	35
Indonesia	22
China	17
India	16

Source : Reference [44]

Table 2 shows frequency of breast diseases in different sex. Out of total 237 patients, 222 were females and 15 male cases. The ratio of incidence of breast diseases in females and males was 14.8:1. Among 15 male patients, 10 patients suffered from gynaecomastia and 5 had malignant breast disease.

Table 3 shows frequency of breast fibroadenoma in different age group. It was most common in twenties (48.33 %) followed by in thirties (25.00 %). As the age increases, the incidence of fibroadenoma decreases significantly.

Table 4 & 5 shows frequency of ANDI in different age group. ANDI was found to be the most common benign breast diseases seen. Among ANDI, cyclical mastalgia was common compared to non-cyclical mastalgia. The ratio of cyclical and non-cyclical mastalgia was 3.1:1. Cyclical mastalgia was most common in teens (53.85 %) followed by in twenties and in thirties respectively whereas Non-cyclical mastalgia was most common in twenties (47.06 %) followed by in teens and in thirties respectively.

Table 6 shows frequency of breast abscess / acute mastitis in different age group. It was most commonly seen in twenties (47.06 %) followed by in thirties and in teens. It was not at all seen below 9 years of age and above 50 years of age.

Table 7 shows frequency of tuberculous mastitis in different age group. It was most commonly seen in thirties (36.36 %) followed by in twenties.

Table 8 shows frequency of gynaecomastia in different age group. Gynaecomastia was seen about 80.00 % in age group of 10 to 30 years of life.

Table 9 shows frequency of Cystosarcoma Phylloides in different age group. 100 % of cystosarcoma phylloides were found in age group of 30 to 50 years of life.

Table 10 shows frequency of Galactocele in different age group. It is most common in twenties (57.14 %) followed by in thirties and in teens respectively in decreasing order.

Table 11 shows frequency of duct ectasia in different age group. 83.33 % of the cases were seen in thirties followed by in forties respectively in decreasing order of frequency.

Table 12 shows frequency of lipoma of breast in different age group. 100 % of cases of lipoma were seen in age group of 20 to 40 years of life. Table 13 shows frequency of malignant disease of breast among different age group and among different sex. It is commonest above 50 years of life. Nearly about 55.56 % of cases were seen above the age of 50 years followed by in forties (37.04 %). Malignant breast disease was also more common in females as compared to males. Incidence of breast cancer is rarest in younger age group.

Table 14 shows sensitivity of clinical diagnosis in correlation with FNAC or Histopathological or Surgical Confirmation. Clinical diagnosis was 100 % accurate in cystosarcoma phylloides, galactocele and Gynaecomastia. Sensitivity of clinical diagnosis for ANDI, Breast Abscess, Duct Ectasia, Carcinoma of breast and Fibroadenoma was in decreasing order of accuracy respectively. Sensitivity of Clinical diagnosis for tuberculous mastitis was found to be least.

Table 15 shows sensitivity of FNAC of breast diseases in correlation with Histopathological or surgical confirmation. FNAC was 100 % sensitive in diagnosing breast diseases like Fibroadenoma, ANDI, Galactocele, Duct ectasia and Lipoma. Carcinoma of breast was 88.89 % accurately diagnosed by FNAC. FNAC was found to be of least importance in diagnosis of Cystosarcoma Phylloides.

DISCUSSION

The breast is a dynamic structure that undergoes changes throughout a women's reproductive life and, superimposed upon this, cyclical changes throughout the menstrual cycle. It is a highly modified sudoriferous gland. It is an organ of pride and affection for women. The protuberant part of the human breast is generally described as overlying the second to the sixth ribs and extending from the lateral border of the sternum to the anterior axillary line. Actually, a thin layer of mammary tissue extends considerably further, from the clavicle above to the seventh or eighth ribs below and from the midline to the edge to the latissimus dorsi posteriorly.⁵

The overall incidence of breast diseases in different population groups in India is still incompletely documented and has different pattern of presentation.⁶ There is wide variation seen in the incidence of various breast diseases throughout the world. Benign Breast Diseases were the commonest types of breast lesions in the present study, which accounts approximately 88.61 % of all cases seeking medical advice for breast problems. This result is in contrast to western countries where it accounts only 79% of the breast lesions.⁵ Clinical estimates of benign breast disorders may be inaccurate due to subjectiveness of patient evaluation and variation of clinical observations. The incidence of benign breast disorders is estimated to be 1.5 / 1000 total hospital admissions.⁷ The peak incidence in patients 21 – 30 years of age for mastalgia, 20 - 40 years for fibroadenoma, 31 – 40 years for mastitis, duct ectasia and 40 years of age and above for carcinoma of breast, which was one decade younger than in western country patients.⁸⁻¹² The breast lesions were equally distributed in patients in rural and urban populations. This is in contrast to a lower incidence of benign breast disorders reported in rural Africans, first generation Chinese immigrants and American Indians.¹³

Among Benign Breast Diseases, ANDI was commonest (29.11 %) followed by fibroadenoma (25.31 %), which was in contrast with previous studies conducted in India which showed fibroadenoma as the commonest benign breast disorder.^{14,15} ANDI may occur because breast is a dynamic structure, which undergoes physical and physiological changes throughout the women's reproductive life. Increased incidence of ANDI is most probably due to stress induced hormonal imbalance as well as high consumption of bakery food as well as non-vegetarian food as it was a common findings seen in our study. These patients usually present as lumpiness and / or breast pain (mastalgia).⁹ Mastalgia could be cyclical or noncyclical. Cyclical mastalgia is always associated with breast disease while as noncyclical mastalgia may be associated with ANDI or referred musculoskeletal disorder. In this study 69 cases of ANDI were diagnosed. 52 cases were of cyclical mastalgia whereas 17 cases were of noncyclical mastalgia. These cases account 29.11 % of total breast lesions which is in similarity with the western countries where it accounts 30%.

Fibroadenoma usually arises in the fully developed breast during 18- 25 years of age period. Although, it may also occur in much older women. Blacks have a greater propensity than white to develop fibroadenomas and at younger age.¹⁰ The lesion invariably has a relationship to estrogen sensitivity and it occurs predominantly in second and third decade of life.

In the present study also, the common age of fibroadenoma was second and third decade which is comparable to the above report. A higher incidence of fibroadenoma and a lesser frequency of

fibrocystic disease in Indian women in previous studies was explained on the basis of early menarche, early marriage and multiparity which has seen a change in our recent study which may reflect the impact of globalization and effect of literacy and awareness among the people which has resulted in growth of female education and women empowerment in various services which indirectly have reduced the incidence of early marriage and multiparity to a great extent even in the rural population. A direct association has been noted between oral contraceptive use before age 20 and the risk of fibroadenoma.¹⁶ The Epstein-Barr virus might play a causative role in the development of this tumor in immunosuppressed patients.¹⁷

Approximately 50% of fibroadenomas contain other proliferative changes of breast, such as sclerosing adenosis, adenosis, and duct epithelial hyperplasia. Fibroadenomas that contain these elements are called complex fibroadenomas. Simple fibroadenomas are not associated with any increased risk for subsequent breast cancer. However, women with complex fibroadenomas may have a slightly higher risk for subsequent cancer.¹⁸ The presence of atypia (either ductal or lobular) confined to a fibroadenoma does not lead to a greater risk for long-term breast carcinoma compared with fibroadenomas in general. Fibroadenomas in older women or in women with a family history of breast cancer have a higher incidence of associated carcinoma.¹⁹ Two studies, which were considered to provide strong evidence of reliability according to El-Wakeel et al.²⁰ shows that the relative risk of developing breast cancer in patients who had surgically excised fibroadenomas increases, in the presence of complex features within the fibroadenomas, ductal hyperplasias, or a family history of breast carcinoma (in a first-degree relative). Progressive somatic genetic alterations that are associated with the development of breast cancer have been studied in fibroadenomas. No genetic instabilities, manifested as loss of heterozygosity or microsatellite instability, have been found in any fibroadenoma components regardless of their association with breast cancer or their histologic complexity.²¹

The current management of patients with clinically or radiologically suspected fibroadenoma varies. Some physicians prefer excision for tissue diagnosis, but conservative management will likely replace surgical treatment in the near future, on the basis of the young age of the patient, findings of benign imaging and clinical characteristics, and benign findings on either FNA biopsy or needle core biopsy.^{18,22,23} Minimally invasive techniques, such as ultrasound-guided cryoablation, seem to be an excellent treatment option for fibroadenoma in women who wish to avoid surgery, or else the lesion may simply be treated with observation and followed up periodically.²⁴

Breast abscess are often related to lactation and typically occurs within five weeks of breast-feeding. J. Dod also reported in his study that it might occur in women who do not lactate.⁵ In our study breast abscess was the third most common benign breast disease, which accounts for 14.35 % of the cases. Approx. 70 % of the breast abscess cases were between the age of 20 - 39 years and majority of them were lactating mothers.

Acute mastitis usually occurs during the first 3 months postpartum as a result of breast feeding. Also known as puerperal or lactation mastitis. This disorder is a cellulitis of the interlobular connective tissue within the mammary gland, which can result in abscess formation and septicemia. It is diagnosed based on clinical

symptoms and signs indicating inflammation. Risk factors fall into two general categories: one is improper nursing technique, leading to milk stasis and cracks or fissures of the nipple, which may facilitate entrance of microorganisms through the skin; and other is stress and sleep deprivation, which both lower the mother's immune status and inhibit milk flow, thus causing engorgement and leads to abscess formation.^{25,26}

Early diagnosis and early management of mastitis is of value. However, there is little consensus on the type or duration of antibiotic therapy and when to begin antibiotics. As lactation mastitis is a process of subcutaneous cellulitis, detection of pathogens in breast milk may not always be possible, so breast emptying with frequent nursing or manual pumping and beginning empiric antibiotic therapy seems to be the most appropriate approach.^{27,28} When puerperal mastitis associated abscess occurs, incision and drainage are usually recommended; however, suitable patients assessed by repeated ultrasonography can also be treated by needle aspiration and antibiotics with excellent cosmesis.²⁷

Granulomatous reactions resulting from an infectious etiology, foreign material, or systemic autoimmune diseases such as sarcoidosis and Wegener's granulomatosis can involve the breast. Identification of the etiology requires microbiologic and immunologic testing in addition to histopathologic evaluation. Many different types of organisms can cause granulomatous mastitis.^{29,30}

Tuberculosis of the breast is a very rare disease. However, both clinical and radiological features of tuberculous mastitis are not diagnostic and easily can be confused with either breast cancer or pyogenic breast abscess by clinicians. Remembering the fact that traveling from one place to another in this global world has been increasing and that the prognosis for complete cure with appropriate anti tuberculous drug therapy is excellent, this disease entity can easily be dealt with. Definitive diagnosis of the disease is based on identification of typical histological features under microscopy or detection of the tubercle bacilli with mycobacterial culture.^{31,32} In our study the incidence of tuberculosis of breast was found to be 4.64 % of all cases. The high incidence of tuberculosis of breast in Indian women is due to prevalence of tuberculosis in India. The highest incidence i.e 63.64 % of all cases of tuberculosis of breast was found in the age group of 20 – 40 years of age which was similar to that of patients with the highest incidence of tuberculosis in the female population in general in India and across the world.

Gynecomastia implies the presence of female type mammary gland in male. Most of gynecomastia should not be considered a disease because enlargement of breast is common. Whatever may be the etiology, the ultimate mechanism for breast development in male is due to increase in ratio of levels of oestrogen to androgens. Microscopic features show early stages of duct development. If long standing fibrous tissue replaces most of the breast tissue. Physiologic gynecomastia occurs during three phases of life, neonatal, adolescence and old age (senescence). In the present study the gynecomastia account 4.22 % of all breast diseases.

Galactocele, which is rare, usually presents as a solitary, subareolar cyst and always dates from lactation. It contains milk and in longstanding cases its walls tend to calcify.⁵ Pathogenesis of galactocele is unclear. It occurs usually due to accumulation of

milk and amorphous epidermal debris due to blockage of main duct in patients who have just ceased lactation. In present study galactocele accounts 5.91 % of all breast diseases and all cases were seen in age group of 10 – 40 years of life mostly in post-partum phase during lactation.

Phyllodes tumor is a fibroepithelial tumor of the breast with a spectrum of changes. These benign tumours, previously sometimes known as serocystic disease of brodie or cystosarcoma phylloides, usually occur in women over the age of 40 years but can appear in younger women. Benign phyllodes tumor is usually difficult to differentiate from fibroadenoma. It show wide spectrum of activity varying from almost benign condition to locally aggressive and sometimes metastatic tumor. On gross examination it is a well circumscribed with irregular surface projections. Cut surface is soft brown in color and may show cysts, necrosis or hemorrhagic areas. Hypercellular stroma with cytologic atypia, increased mitoses, and infiltrative margins of the lesion are the most reliable discriminators to separate lesions with recurrence and malignant behavior. Despite their size they remain mobile on the chest wall.

In terms of surgical treatment of these tumors, it is important to recognize phyllodes tumor because it should be excised completely with clear margins to obviate any chance of local recurrence. In cases of recurrent disease, mastectomy is often performed.^{33,34} The Indian reports shows a wide variation in the incidence of cystosarcoma phylloides. It varies from 0.63 % to 13.8 %.¹⁴ The western countries give an incidence of less than 1%.³⁵ In present study, it accounts 1.27 % of total breast disease. All the cases were found in age group of 35 – 45 years of life.

Mammary duct ectasia, also called periductal mastitis is a distinctive clinical entity that can mimic invasive carcinoma clinically. It is a disease of primarily middle-aged to elderly parous women, who usually present with nipple discharge, a palpable subareolar mass, noncyclical mastalgia, or nipple inversion or retraction. Dilatations of some large ducts behind areola which may extend retrograde into segmental and smaller peripheral ducts. Usually 3-4 ducts are involved. The pathogenesis and the etiology of the disease are still being debated. Smoking has been implicated as an etiologic factor in mammary duct ectasia.^{36,37} This association appears to be more important in young women who smoke.³⁸ Mammary duct ectasia is usually an asymptomatic lesion and is detected mammographically because of microcalcifications. The most important histologic feature of this disorder is the dilatation of major ducts in the subareolar region. These ducts contain eosinophilic, granular secretions and foamy histiocytes both within the duct epithelium and the lumen. The inspissated luminal secretions may undergo calcifications that may be the presenting sign in many patients.³⁹ Filled with debris and fatty material and lining epithelium atrophies- ultimately leads to periductal inflammation and sclerosis. May cause recurrent abscesses & fistula formation. Mammary duct ectasia generally does not require surgery and should be managed conservatively.⁴⁰ There is no evidence in the literature indicating that mammary duct ectasia is associated with an increased risk for breast cancer. In some patients, clinical presentation and mammographic findings may suggest malignancy, and biopsy may be required to exclude malignancy. In present study duct ectasis accounts 2.53 % of all breast diseases and approx. 83.33 % of cases were seen in age group of 30 – 40 years of life.

Lipoma of the breast is a benign, usually solitary tumor composed of mature fat cells. It is occasionally difficult to distinguish lipoma from other conditions clinically, thus causing diagnostic and therapeutic challenges.⁴¹

Clinically, a lipoma presents as a well-circumscribed, smooth or lobulated mass that is soft and usually non tender. FNAC biopsy of these lesions reveals fat cells with or without normal epithelial cells. Usually both mammography and ultrasound scanning give negative results, unless the tumor is large.^{41,42} If the clinical diagnosis of lipoma is confirmed by either FNA biopsy or core biopsy, and the mammogram and the ultrasonogram show nothing suspicious for malignancy at the site, the patient is normally followed through palpation after 6 months. However, if the diagnosis is not certain or the lesion grows rapidly, the tumor should be surgically removed.^{41,42} In our study, it accounts 1.27 % of all cases of breast diseases.

Breast cancer is the most common cancer in women in most parts of the world, but there is a marked geographical variation in the incidence in different countries.⁴³ The incidence is highest in northern Europe and North America, intermediate in Mediterranean countries and South America, and lowest in Asia and Africa.⁴⁴

The differences are attributed to differences in diet and lifestyle. In 2000, there were 1,050,346 cases of breast cancer reported worldwide, with 372,969 deaths. The average crude incidence rate was 94.93 per 100,000 in more developed countries, and 19.66 per 100,000 population in less developed countries as seen in table 16.⁴⁴ Breast cancer is the second most common cancer after cervical cancer in India. There are several clearly defined risk factors for breast cancer. Age at menarche has been inversely associated with risk of breast cancer; menarche at a relatively early age is associated with increased risk.⁴⁵ Because there is, prolonged exposure to estrogen in early menarche and at higher levels than for those with later menarche. Similarly, it has also been shown that earlier the age of natural menopause, the lower the risk of breast cancer.⁴⁶

However, in this study average age of menarche and menopause were 14 and 45 years respectively. Parity and age at first birth are also associated with risk of breast cancer because women of high parity are more likely to have had their first child at a relatively early age. One of the international case control study pointed out that women who first gave birth after the age of 35 had a risk of breast cancer which was three times that of women who had their first child before the age of 18, while the risk for nulliparous women was approximately the same as that for women who had full term pregnancy between the ages of 30 and 35 years.⁴⁷

In the present study all the cases of breast carcinoma were married, multiparous and gave birth of the first child at very early age. All these women also breast-fed their children. Also the most significant findings in our study was, all patients with carcinoma of breast presented at advanced stage of breast cancer. As our tertiary care center is in rural set up with basic facilities and has poor patient compliance, we tried to provide the best possible treatment and all patients were given treatment in form of modified radical mastectomy or toilet mastectomy followed by chemotherapy with drugs like cyclophosphamide, epirubicin and 5-flourouracil along with long term hormonal therapy in form of tamoxifen. Stage IV patients were referred to higher centers where radiotherapy facilities are available. All our patients with malignant breast disease were from poor or low socioeconomic status. In the present study carcinoma breast constitutes about 11.39 % of all breast diseases and was seen in age group above 35 years of life with female preponderance.

Table 17 & 18 shows relative incidence of benign breast diseases from different parts of India and from different parts world respectively. We have tried to compare our study with those studies conducted across the globe. Wide variations have been noticed in different pattern of presentation of breast diseases across the globe.

As per literature, triple assessment of breast symptoms has almost 99.9 % sensitivity in diagnosis of breast disorders as seen in Fig 1.⁵

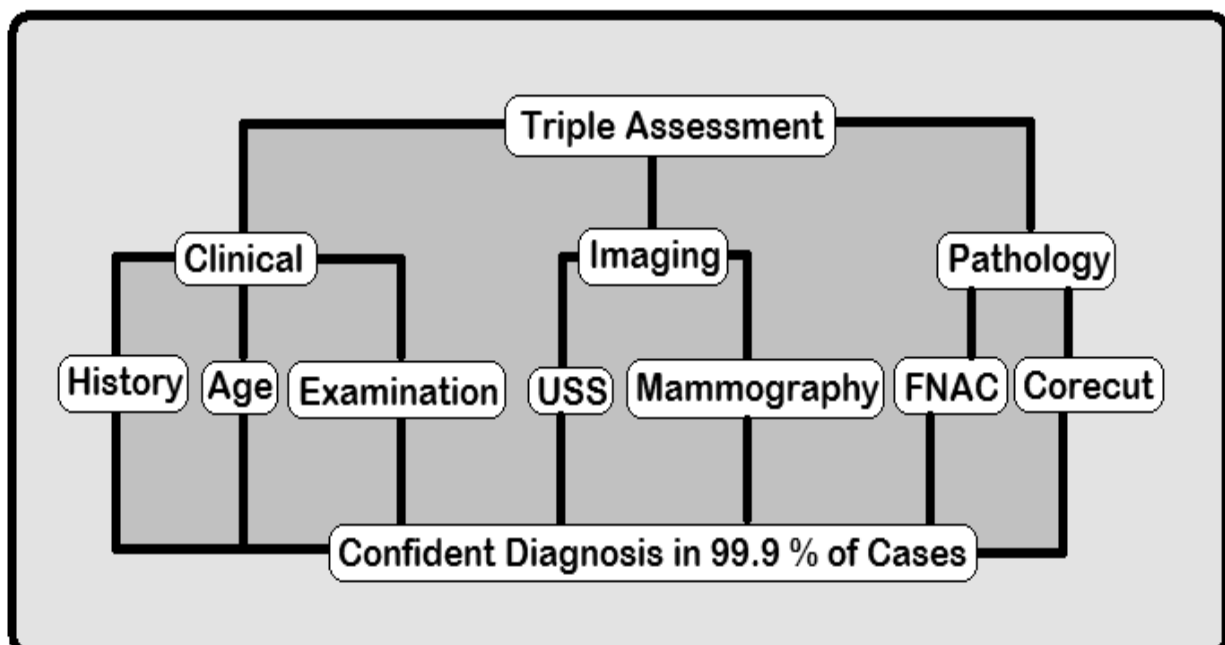


Fig 1: Sensitivity of Triple Assessment Examination

Table 17: Relative Incidence of Benign Breast Disease From Different Parts Of India (In Percentage)

Name of Diseases	Shukla series	Khanna et al.	Rangbhashyam et al.	Present Series
Fibroadenoma	42.1	40	56.7	28.57
Fibroadenosis		14.3	16.2	32.85
Cystosarcoma Phylloides	9.6	14.2	2.3	1.43
Ductal Papilloma	1.9	0.7	2.3	-
Sclerosing Adenosis	1.83	4.8	-	-
Cysts	9.8	-	-	-
Duct Ectasia	5.1	4.4	-	2.86
Breast Abscess	9.6	11.3	7.9	16.19
Tuberculous Mastitis	4.9	5.7	2.7	5.24
Galactocele	-	1.2	6.9	6.67
Lipoma	-	-	-	1.43

Table 18: Relative Incidence of Benign Breast Diseases in Various Reported Series (In Percentage)

Authors	Ethnic group	Fibroadenoma	Cystosarcoma Phylloides	Fibrocystic Disease	Sclerosing Adenosis	Infective	Others
Tong	White	8.6	-	65.1	-	-	26.3
Funderburk	Black	35.9	0.4	38.4	-	8.0	17.3
Sartwell	White	17.2	-	70.7	2.4	4.1	5.6
Devitt	White	9.6	-	86.6	-	-	3.8
Oluwole	Black	48.0	0.5	24.0	3.2	7.5	11.8
Rangabashyam	Indian	57.0	2.3	16.3	-	11.0	13.4
Present series	Indian	28.57	1.43	32.85	-	22.15	15.00

In our study, sensitivity of clinical diagnosis in correlation with FNAC, Histopathological or Surgical Confirmation was found to be 81.43 % i.e., out of total 237 cases, there was error in 44 cases in making correct diagnosis. Similarly, sensitivity of FNAC in correlation with Histopathological or surgical confirmation was found to be 90.71% i.e., by FNAC we were able to have correct diagnosis of 215 cases out of total 237 cases.

CONCLUSION

In our study we found out that females are more vulnerable to breast diseases as compared to males. Benign breast diseases are more common breast disorders which in turn, are overshadowed by carcinoma of breast. Among benign breast disorders, ANDI is the commonest followed by fibroadenoma & breast abscess respectively. Incidence of diseases like Galactocele, Tuberculosis of breast & Gynaecomastia are similar. Low socio economic status, poor hygiene, illiteracy, unawareness regarding the health etc. are major factors responsible for breast diseases in the community. FNAC still remains a gold standard investigation for diagnosis of breast diseases. Triple Assessment of breast symptoms should be given utmost importance as it can 99.9% correctly diagnose the disease. Breast cancers presents to the hospital in advanced stage which has resulted in increased morbidity and mortality. Self-examination of the breast should be taught to all females in rural society for early detection of breast cancers in order to reduce the morbidity and mortality from breast diseases. An awareness programme regarding breast diseases should be included in social and preventive medicine schedule at every level of national health care with a view to decrease the incidence of breast diseases in the community.

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