

## RISK FACTOR ASSESSMENT AND CLINICOPATHOLOGICAL ANALYSIS OF BREAST DISEASES IN A TERTIARY CENTER- A PROSPECTIVE STUDY

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### ABSTRACT

#### BACKGROUND

Breast is modified sebaceous gland. It is an organ of female beauty and pride. From puberty to death, the breast is subjected to constant physical and physiological alterations that are related to menses, pregnancy and menopause. The breast problem could be as simple as breast abscess to as ominous as cancer. Both benign and malignant diseases occur in men and women of all ages but benign lesion tend to occur more commonly at younger age than cancer. Benign breast diseases (BBD) are common with estimate of over half of the female population at some times in life seeking medical advice for breast problem. This prospective study was done on patients attending OPD for breast complaints in 1 year period, to do the risk factors assessment & clinical analysis of patients presented with breast complaints.

#### MATERIALS AND METHODS

Total 200 patients who have attended OPD with breast related complaints and given consent for study, were studied in a period of 1 year duration from at Nehru Hospital, B.R.D Medical College, Gorakhpur.

#### RESULTS

Benign breast diseases are more common in the population than malignant one, Fibroadenoma, Breast abscesses and Fibrocystic disease and ANDI are the most common cause of mass seen in middle ages. Malignant lesion of the breast is major concern and the second most commonly diagnosed cancer in our region as seen in study. Incidence is high in western industrialized countries and relatively low in developing countries in Asia and other parts of the world, predisposing factors for BBD are age, sex, race, inverted nipple, retracted nipple, cracked nipple, improper feeding due to lack of knowledge about breast-feeding and endogenous hormonal factors.

#### CONCLUSION

BBD is the most frequent type of lesion found in the present study in surgery OPD in BRD medical college, Gorakhpur. Among BBD, fibroadenoma was the commonest, followed by breast abscess, ANDI and gynecomastia. In this study, breast abscess was second most frequent disease of the breast. Majority of these patients were lactating mothers. This may be because of lack of hygiene or improper breast-feeding. Breast carcinoma is the second commonest cancer among females of Gorakhpur. They reach to the specialist doctor very late because of lack of awareness and illiteracy and social stigma.

#### KEYWORDS

Benign Breast Diseases, Breast Carcinoma, Fibroadenoma, Breast Abscess, ANDI.

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#### BACKGROUND

The mammary gland is a unique organ in that it is not fully formed at birth, undergoes cyclical changes during reproductive life. Some of the breast diseases occur during reproductive life while some occur during menopausal period

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indicating relation of these diseases to hormonal stimulation as a causative factor. Most of the benign epithelial lesions are labeled by many pathologists with variety of terminologies such as cystic disease, fibrocystic disease, cystic mastitis, cystic mastopathy, epithelial hyperplasia, mammary dysplasia, benign breast disease.<sup>1</sup> Besides Fine needle aspiration cytology (FNAC) of breast, biopsies and mastectomy specimens are frequently sent for histopathological examination.<sup>2</sup> Many of the breast lesions are clinically suspected as malignant lesions but diagnosed as benign after Histopathological examination.<sup>3</sup> The varied pattern of benign breast lesions attracted our attention to study them in detail with the help of available clinical and radiological and histopathological data.<sup>4</sup>

Most breast complaints are benign in nature. They have been known to affect both males and females. Unlike breast cancer, benign breast diseases have often been difficult to understand in part due to variety of names that have been used to describe the various conditions.

There are many types of benign breast problems, these can be classified according to the predominant symptoms – pain, lumps, nipple discharge and infections.

Breast is a dynamic structure, which undergoes changes throughout women’s reproductive life, and superimposed on this cyclical changes throughout menstrual cycle. The pathogenesis involves disturbance in breast physiology extending from an normality to well defined disease process.<sup>5</sup>

The main problem from female patients of view is fear that such a lump may be cancer. The clinician must therefore provide a degree of diagnostic accuracy while at same time ensuring that an excessive biopsy rate is prevented. It is now easier to exclude cancer with the development of diagnostic aids such as mammography, ultrasonography and aspiration cytology.<sup>6</sup>

The incidence of benign breast lesions begins to rise during the second decade of life and peaks in the fourth and fifth decades, as opposed to malignant diseases, for which the incidence continues to increase after menopause, although at a less rapid pace. Benign Breast disease constitute a spectrum of lesions ranging from developmental abnormalities, inflammatory lesions, epithelial and stromal proliferations to various neoplasms. Some of the women with benign breast disease especially those with proliferative lesions have been reported to be at increased risk for development of subsequent breast cancer.

**Aims and Objectives** - To characterise the risk factors, clinicopathological features and pattern of presentation of benign and malignant breast disease.

**MATERIALS AND METHODS**

Total 200 patients who have attended OPD with breast related complaints and given consent for study, were studied in a period of 1 year duration from January 2015 to December 2015 at Nehru Hospital, BRD Medical College, Gorakhpur.

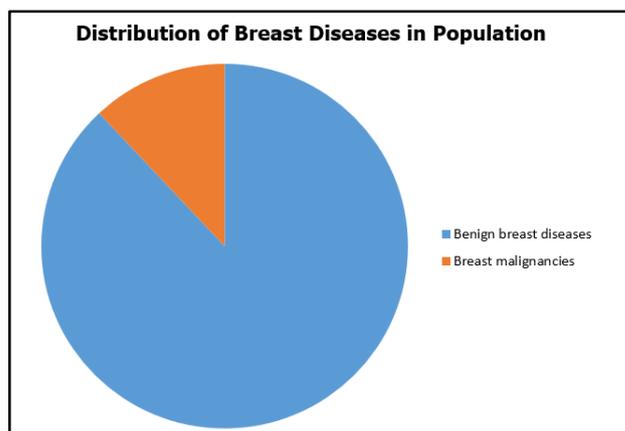
**RESULTS**

200 cases of breast disease were studied. This includes 194 female and 6 male patients. The ratio between benign and malignant lesions was 7.3:1. The benign breast diseases (BBD) were the commonest lesions of the breast found in this study (88%) whereas malignant lesion was infrequent (12%). Among BBD, the commonest lesion was fibroadenoma (35%) followed by breast abscess (14%), Aberration of Normal Development and Involution (ANDI) which was 16.55% and gynecomastia (4%). 24 cases (12%) were of malignant lesion. This includes all female cases. The common ages for BBD were, 10-30 years for fibroadenoma, 15-29 years for breast abscess, 18-50 years for ANDI and 15-25 yrs. for gynecomastia. Whereas carcinoma breast was common in the age group of forties and fifties.

Name of the Disease	Number	Percentage
<b>Benign Lesions</b>		
Fibroadenoma	70	35%
Breast Abscess	28	14%
ANDI		
Cyclic mastalgia	21	10.5%
Noncyclic mastalgia	13	6.5%
Gynecomastia	8	4%
Accessory breast	1	0.05%
Galactocoele	6	3%
Inversion of nipple	2	1%
Papilloma of nipple	1	0.05%
Discharge of nipple	22	11%
Eczema of nipple	4	2%
<b>Malignant Lesion</b>		
Carcinoma breast	24	12%
<b>Total</b>	<b>200</b>	<b>100%</b>

**Table 1. Illustrates Distribution of Various Breast Diseases**

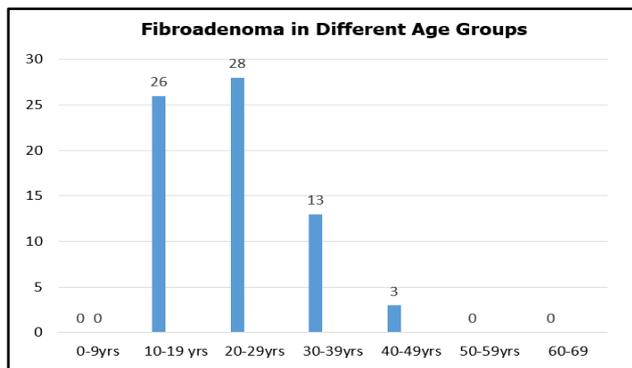
BBD were the commonest (88%) whereas the malignant breast disease was less frequent (12%). Among BBD fibroadenoma was commonest (35%) followed by breast abscess (14%). ANDI and gynecomastia ranked third and fourth respectively.



**Figure 1. Distribution of Breast Diseases in Population**

Age	Number	Percentage
0-9	Nil	Nil
10-19	26	37.14%
20-29	28	40%
30-39	13	18.57%
40-49	3	4.28%
50-59	Nil	Nil
60-69	Nil	Nil
<b>Total</b>	<b>70</b>	<b>100%</b>

**Table 3. Frequency of Fibroadenoma in Population was as Follows**



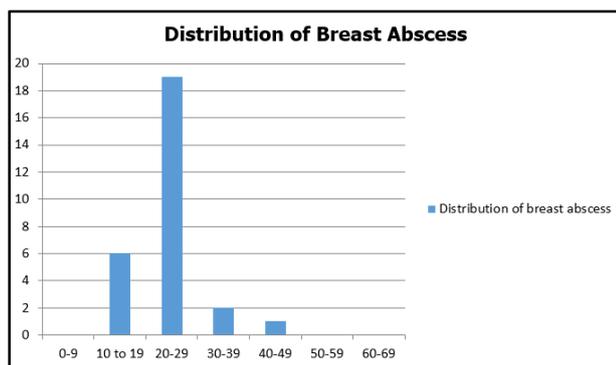
**Figure 2. Fibroadenoma in Different Age Groups**

Bar graph shows frequency of breast fibroadenoma. Fibroadenoma is most common in twenties followed by thirties.

Age	Number	Percentage
0-9	Nil	Nil
10-19	6	21.4%
20-29	19	67.8%
30-39	2	7.1%
40-49	1	3.01%
50-59	Nil	Nil
60-69	Nil	Nil
<b>Total</b>	<b>28</b>	<b>100%</b>

**Table 3. Breast Abscesses in Different Age Group**

Breast abscess was most frequent in twenties (67%) followed by in age group of 10-19 yrs. Only 2 cases (7.1%) diagnosed in thirties.



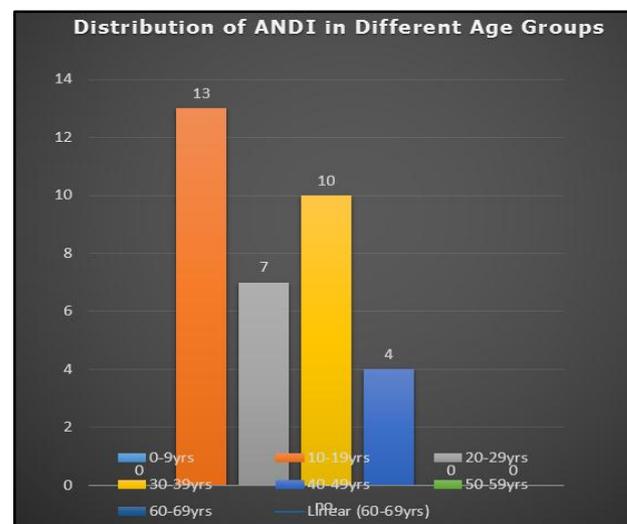
**Figure 3. Distribution of Breast Abscess**

ANDI is also quite common in population, It was most frequent in age group 10-19 yrs. with 13 out of 34 cases were present, while in 30-39 yrs. 10 cases were found. Distribution of ANDI was as follows-

Age	Number	Percentage
0-9	Nil	Nil
10-19	13	38.23%
20-29	7	20.58%
30-39	10	29.41%
40-49	4	11.76%
50-59	Nil	Nil

60-69	Nil	Nil
<b>Total</b>	<b>34</b>	<b>100%</b>

**Table 4. Distribution of ANDI in Population**



**Figure 4. Distribution of ANDI in Different Age Groups**

Bar graph illustration of ANDI cases in different age groups. It was most frequent in age group 10-19 yrs.

Age	Number	Percentage
0-9	nil	nil
10-19	4	66.6%
20-29	2	33.4
30-39	nil	Nil
40-49	Nil	nil
50-59	nil	Nil
60-69	Nil	nil
<b>Total</b>	<b>06</b>	<b>100%</b>

**Table 5. Show Distribution of Gynecomastia in Different Age Groups**

It is more common in age group 10-19 yrs. (66.6%).

Age	Number	Percentage
0-9	Nil	Nil
10-19	Nil	Nil
20-29	Nil	Nil
30-39	6	25%
40-49	10	41.6%
50-59	8	33.3%
60-69	Nil	Nil
<b>Total</b>	<b>24</b>	<b>100%</b>

**Table 6. Describes the Distribution of Breast Carcinoma in Different Age Groups**

Breast carcinoma was most common in forties (41.6%) followed by fifties (33.3%).

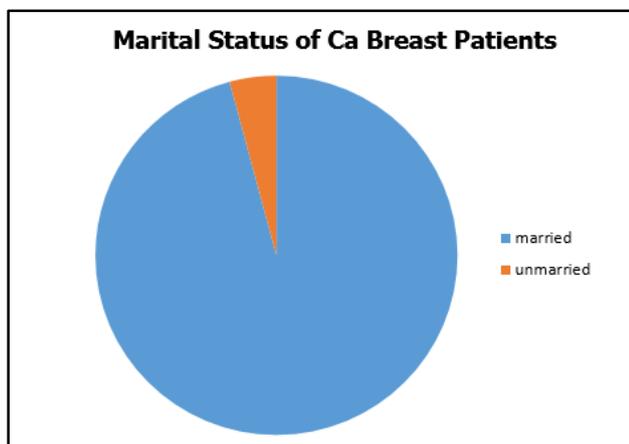


Figure 5. Marital Status of Ca Breast Patients

This pie chart showing association of ca breast with marital status. Only 4% of females who were unmarried having Ca breast & 96% married females having Ca breast.

Association of Ca breast with positive family history of malignancy.

Family History of Malignancy	Number of Females	Percentage
yes	4	16.6%
no	20	83.3%

Table 7. Showing Association of Ca Breast with Family History of Malignancy

Relation of age at menarche with Ca breast

Age at Menarche	Number of Females	Percentage
<13 yrs.	8	33.3%
>13 yrs.	16	66.6%

Table 8. Association of Ca Breast with Age of Menarche

Association of Ca breast and menopause.

Age at Menopause	Number of Females	Percentage
<45 yrs.	4	16.6%
45-49 yrs.	8	33.3%
>50 yrs.	12	50%

Table 9. Showing Association of Ca Breast with Age of Menopause

Relation of multiparity and nulliparity with Ca breast.

Number of Children	Number of Females	Percentage
nulliparous	1	4.16%
1-2	8	33.3%
2-3	15	62.54%

Table 10. Association of Ca Breast with Nulliparity and Multiparity

Pie Chart Showing Association of Ca Breast with Breast Feeding.

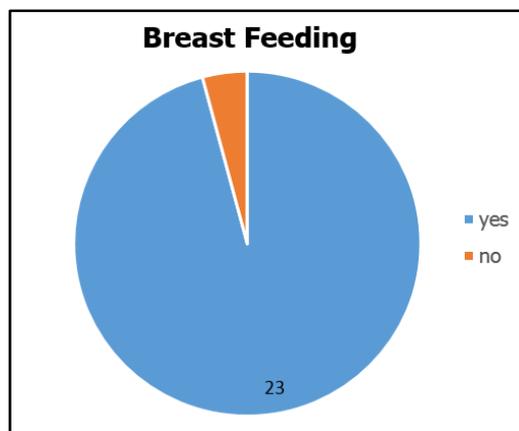


Figure 6. Breast Feeding

Bar graph showing association of Ca breast with age of first child birth.

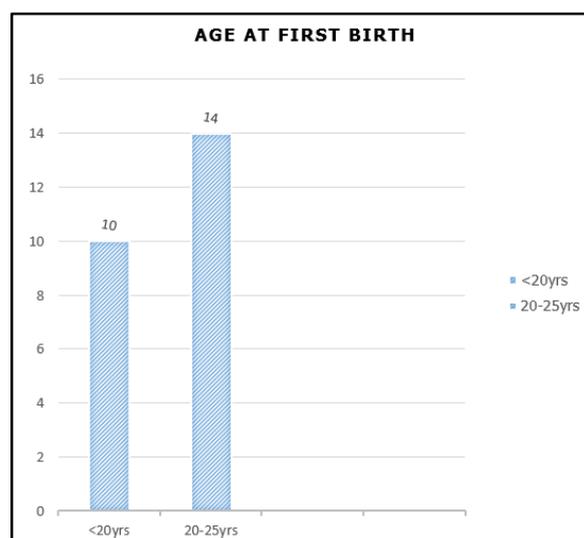


Figure 7. Age at First Birth

Other various risk factors associated with ca breast

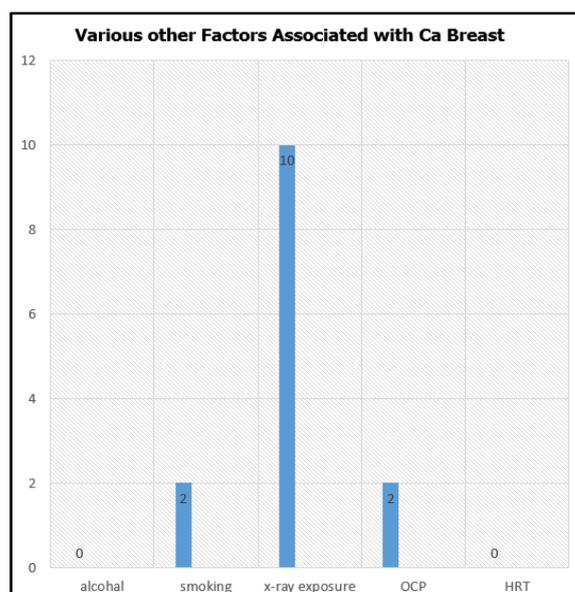


Figure 8. Various other Factors Associated with Ca Breast

## DISCUSSION

The overall incidence of breast diseases in different population groups in Gorakhpur is still incompletely documented. BBD were the commonest types of breast lesions in the present study, which accounts approximately 88% of all cases seeking medical advice for breast problem at BRD Medical College Gorakhpur. This result is in contrast to western countries where BBD accounts only 79% of the breast lesions<sup>9</sup>. Among BBD, fibroadenoma was the commonest (35%) which is comparable with previous studies.<sup>7</sup> 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. 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. Adolescent cellular fibroadenoma typically occurs in adolescence and bears some resemblance to benign phylloide tumour (Juvenile Adenofibroma, JAF). 5-10% of JAF occurs around the time of menarche. In the present series 7% of the cases were found below the age of 15 years. They may be included in JAF. 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.<sup>8</sup> In the present study breast abscess was the second most common BBD, which accounts for 14% of the cases. All the breast abscess cases were between the age of 10-39 years and majority of them were lactating mothers. 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. Physiologic gynecomastia occurs during three phases of life, neonatal, adolescence and old age (senescence). Adolescent gynecomastia is because of excessive estradiol relative to testosterone. With ageing the plasma testosterone level falls and senescent gynecomastia is caused by a relative hyperestronism. In the present study the gynecomastia is fourth common benign breast lesion, which account 3% of all breast diseases. ANDI may occur because breast is a dynamic structure, which undergoes changes throughout the women's reproductive life. These patients usually present as lumpiness and/or breast pain (mastalgia). Mastalgia could be cyclical or noncyclical. Cyclical mastalgia is associated with breast disease while as noncyclical mastalgia may be associated with ANDI or referred musculoskeletal disorder. In this study 44 cases of ANDI were diagnosed. 28 cases were of cyclical mastalgia whereas 16 cases were of noncyclical mastalgia. These cases account 16.55% of total breast lesions whereas in the western countries it accounts 30%. Breast cancer is the second most common cancer after cervical cancer in gorakhpur.<sup>9</sup> 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.<sup>10</sup>

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.<sup>9</sup> However, in this study average age of menarche and menopause were 15 and 50 years respectively, which is similar to normal females of Gorakhpur (15-50 years). 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.<sup>11</sup> 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.

## CONCLUSION

BBD is the most frequent type of lesion found in the present study in Gorakhpur BRD medical college surgery OPD. Among BBD, fibroadenoma was the commonest, followed by breast abscess, ANDI and gynecomastia. In this study, breast abscess was second most frequent disease of the breast. Majority of these patients were lactating mothers. This may be because of lack of hygiene or improper breast-feeding. Proper education of the mother about breast-feeding by doctors in hospital or by saheli or ANM at village level after delivery should be given. It will be an important step in preventing the above diseases. Breast carcinoma is the second commonest cancer among females of Gorakhpur. They reach to the specialist doctor very late because of lack of awareness and illiteracy and social stigma. An awareness program should be included in the social and preventive medicine schedule at every level of national health care, so that mortality and morbidity could be reduced.

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