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Original Research Article

The epidemiological and clinicopathological study of benign breast disease with special reference to treatment regimen

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ABSTRACT

Background: Benign breast disease can be defined to include all those breast diseases which are not malignant. The diagnostic dilemma is for the disease like atypical ductal hyperplasia, mammary intra epithelial neoplasia, ductal carcinoma in situ and lobular carcinoma in situ.
Methods: An epidemiological study of 78 patients of benign breast diseases who attend the surgery OPD or admitted as indoor patients in the department of general surgery, B.R.D. Medical College Gorakhpur during a period of one year.
Results: Benign breast diseases were most common in third decade (51.28%) following fourth decade (23.07%) of life. Most of the patients belongs to middle (37.1%) and higher (32.5%) socioeconomic status. Fibroadenosis (34.61%) was found to be commonest lesion followed by fibroadenoma (26.92%) and mastitis (24.35%).
Conclusions: In our study of benign breast disease, breast pain was the commonest presenting symptom (64.01%) followed by lump in the breast (42.3%). The final diagnosis of benign breast lesion in descending order was fibroadenosis (34.6%), fibroadenoma (26.9%), mastitis (24.4%), duct ectasia (3.8%) and dermatitis of nipple, gynaecomastia 2.56% each. Only one case each (1.2%) of cystosarcoma phyllode, duct papilloma, tuberculosis and galactocele was seen.

Keywords: Duct ectasia, Duct papilloma, Fibroadenosis, Fibroadenoma, Gynaecomastia

INTRODUCTION

Many clinicians have broadly divided diseases of the breast as cancer and benign breast diseases (BBD). Despite a high incidence of BBD-Devitt JE et al, estimates that at least 36 percent of female population has BBD and that benign lesions of the breast are about 6 times as numerous as malignant tumors.[1]

Oestrogen together with prolactin, hydrocortisone, grouth hormone and insulin cause extension of ducts. Progesterone probably causes development of the terminal ductal complex. During pregnancy, little change occurs in the first trimester, but in the second trimester much more florid epithelial proliferation is seen, with development of true functional acini from terminal ductules Hughes et al.[2]

Fibroadenoma is seen predominantly in the 15 to 20 years period of intense lobular development, that cyst formation is seen in the premenopausal phase of involution when lobular units are undergoing regression, and the both are rare after menopause. Duct ectesia, papillomas and epithelial hyperplasia are seen throughout the period of breast activity, and may all persist into the postmenopausal period, for the larger ductal structures do not disappear at this time Hugh and Mansel.[3]

The objective of this study was to compare occurrence of benign breast diseases according to age group, marital status and parity. To study the clinical presentation and pathological changes of various benign breast diseases. To compare various treatment regimens and it's outcome.

METHODS

The material for this study were collected from 78 patients with the clinical diagnosis of benign breast diseases, seen in OPD of surgery department or admitted as indoor patient in the department of surgery, B.R.D. Medical College Gorakhpur during a period of one year from December 2015 to December 2016.

Inclusion criteria

All the adult patients of both sex with clinical suspicion of benign breast diseases between 11 to 50 years of age seen in the OPD of surgery department or admitted in the department of surgery, B.R.D. Medical College Gorakhpur.

Exclusion criteria

- Pregnant female
- Patients with previous history of breast surgery
- Children
- Histologically proven case of carcinoma breast.

RESULTS

Age distribution of 78 cases

The age of patients in the study ranged from 14 years to 57 years, the mean age being 28.56 years. The majority of the patients were in the age group 21-30 years i.e. 40 out of 78 patients (51.28%) followed by 18 cases (23.07%) in age group 31-40 years, 11 cases (14.10%) in 11-20-year age group and 7 cases (8.97%) in age group of 41-50 years and 2 cases (2.56%) in more than 50 years age group.

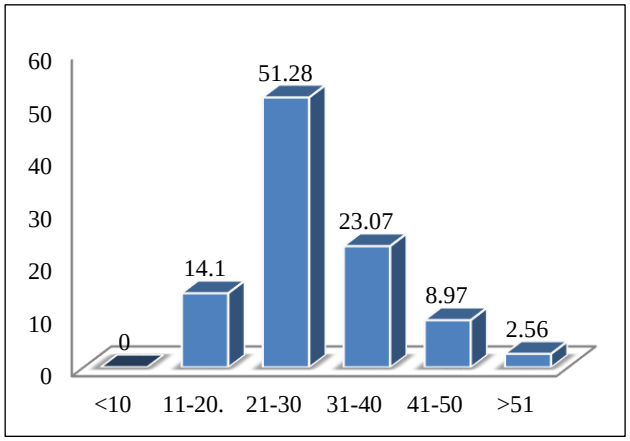

Figure 1: Age distribution of 78 cases.

Distribution of cases according to sex

Out of 78 cases there were 2 males (2.56%) in the age group of 20-30 years and, rest 76 cases (97.4%) were females.

Distribution of cases according to their inhabitance

Out of 78 cases 27 (34.6%) were from rural background and 51 (65.4%) were from urban background.

When the cases were divided according to socio economic status, it was found that 30.76% patients belonged to low socio-economic status, 37.17% patients belonged to middle, and 32.5% belonged to high socio-economic status.

Distribution of cases according to age at menarche

When age at menarche was noted in patients with B.B.D. it was noted that majority (55.26%) had attained menarche by 13 years. There were only 15.79% patients who attained menarche after 16 years.

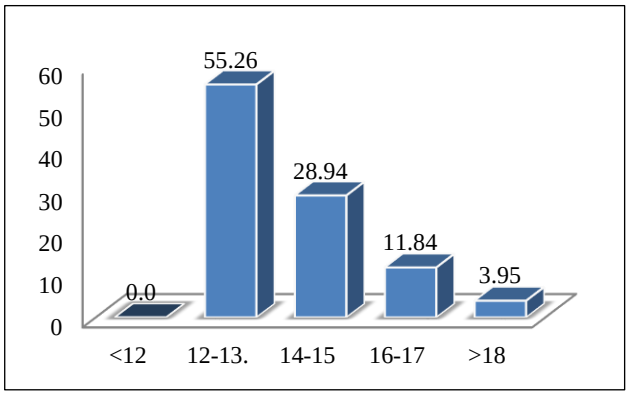

Figure 2: Distribution of cases according to age at menarche.

Distribution of cases according to parity

Out of 60 married females in our study 8.3% were nullipara, 71.6% had 3 children or less and only 19.99% patients had 4 or more children.

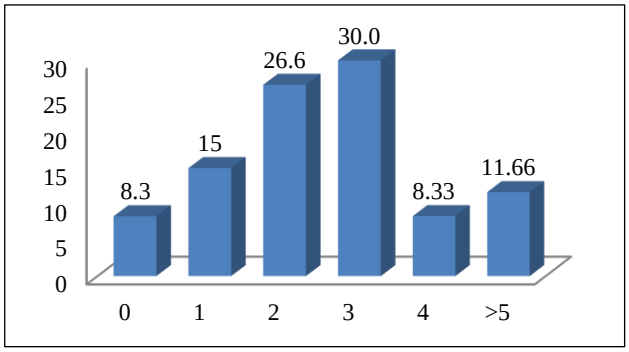

Figure 3: Distribution of cases according to parity.

Distribution of cases according to age at first pregnancy

Out of 60 married females 55 had conceived. Out of these 55 females 4 (7.27%) had first childbirth before 18 years of age. Earliest pregnancy was reported in 17 years old females. Majority of patients had first childbirth between 21-23 years of age. Only 3.63% patients had their pregnancy after 27 year. Maximum age at first pregnancy was reported at 36 years

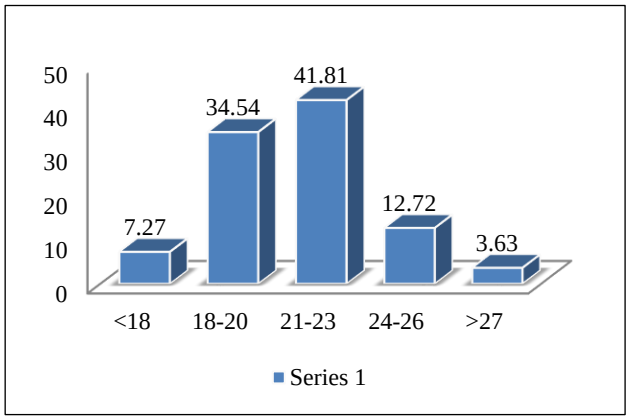

Figure 4: Distribution of cases according to age at first pregnancy.

Distribution of cases according to duration of breast feeding

Out of 55 females who had born children 5.45% females did not breast feed their children. 7.27% breast fed for only 6 month and 78.16% breast fed their children for more than 1 year.

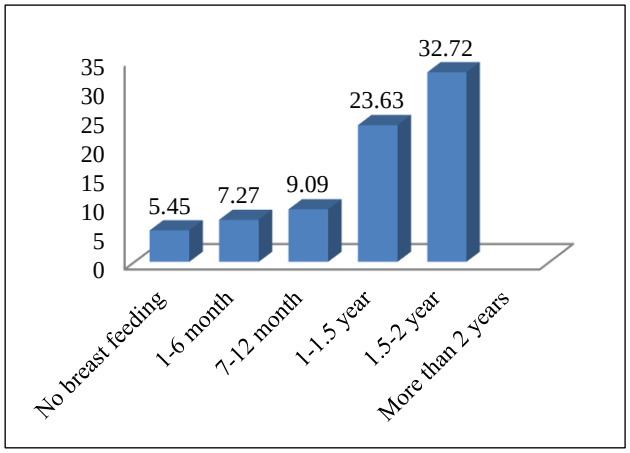

Figure 5: Distribution of cases according to duration of breast feeding.

Distribution of cases according to family history of benign breast disease

Out of 78 patients only 6.5% cases had positive family history of BBD.

The commonest presenting symptom was pain in breast 64.1% followed by lump in breast 42.3%, swelling in breast 38.46%. Nipple discharge was present in 6.41% cases and itching of nipple in 3.84% cases.

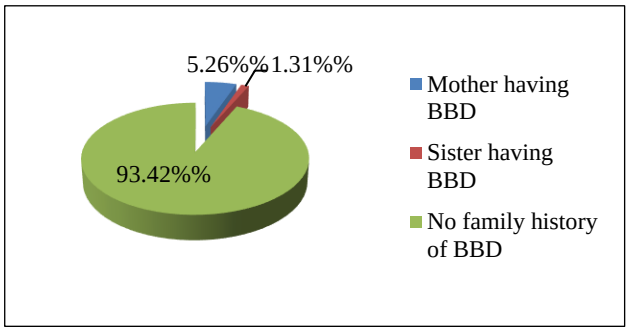

Figure 6: Distribution of cases according to family history of benign breast disease.

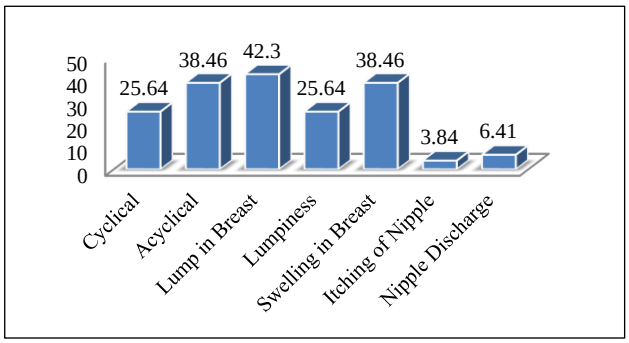

Figure 7: Symptoms of patients of benign breast disease.

Clinical signs in patients of benign breast disease

The commonest finding was presence of a lump or swelling in the breast in 53 cases (67.79%) followed by 46 cases (58.97%) having tenderness. In 20 cases (25.64%) nodularity was felt, in 11 cases (14.10%) there was rise in temperature. Nipple retraction was present in 3 cases (3.84%), nipple cracking in 2 cases (2.56%) and skin ulceration in 1 case (1.28%).

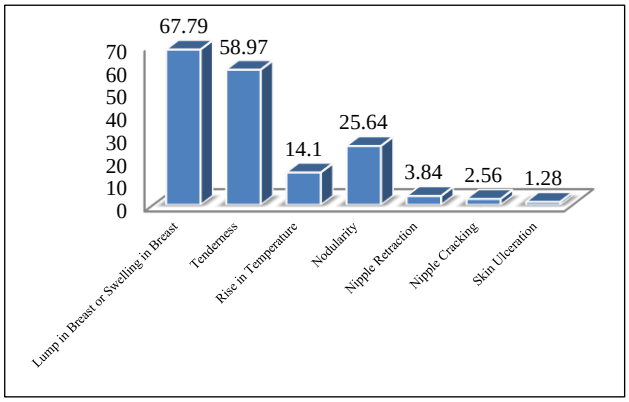

Figure 8: Clinical signs in patients of benign breast disease.

Distribution of patients according to their diagnosis

In this study of 78 patients the commonest lesion found was fibroadenosis 34.61% followed by 26.92% cases of fibroadenoma and 24.35% case of mastitis. Duct Ectasia was found in 3.84% cases.

There were 2 cases each (2.56%) of dermatitis of nipple and gynaecomastia. There was 1 case each of duct papilloma, tuberculosis, cystosarcoma phylloides, galactocele.

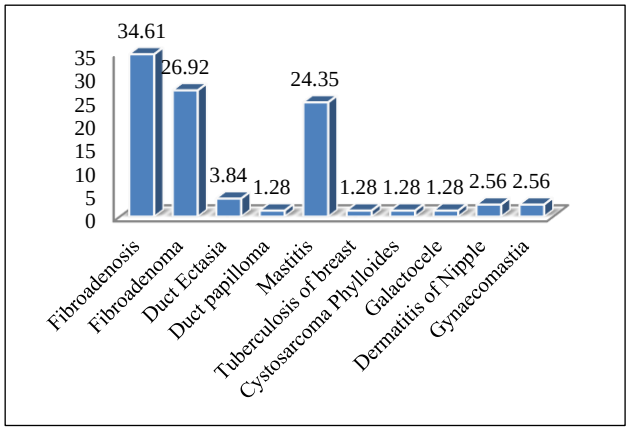

Figure 9: Distribution of patients according to their diagnosis.

Age distribution of 27 cases of fibroadenosis

There were 3.7% cases in age group 11-20 years. Majority of cases presented in age group of 21-30 years (59.25%). 25.92% cases presented in age group of 31-40 years and 7.4% cases in age group of 41-50 years. The youngest case was a girl aged 18 years and oldest case reported was 57 years of age.

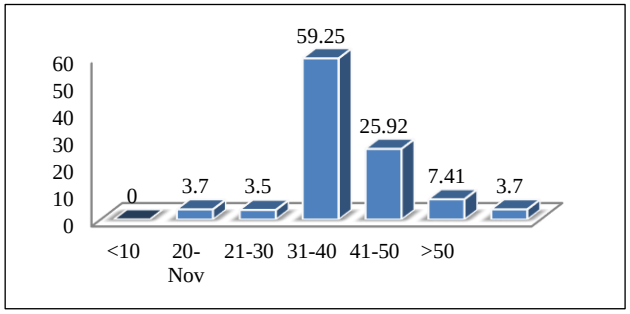

Figure 10: Age distribution of 27 cases of fibroadenosis.

Clinical presentation in 27 cases of fibroadenosis

Breast pain was found in 58.18% cases and was the commonest presentation. Sensation of lumpiness was there in 74.07% cases. 81.48% patients had tenderness in their breast. 74.07% cases had modularity and 18.51% had a lump in the breast.

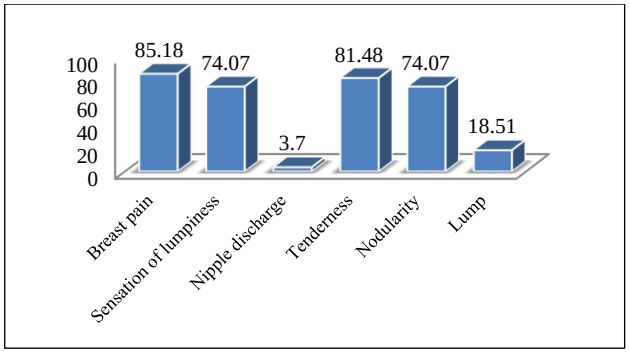

Figure 11: Clinical presentation in 27 cases of fibroadenosis.

Age distribution in 21 cases of fibroadenoma

Majority of cases (57.14%) were in age group of 21-30 years followed by 28.57% cases in 11-20 years age group and 14.28% cases in 31-40 years of age group.

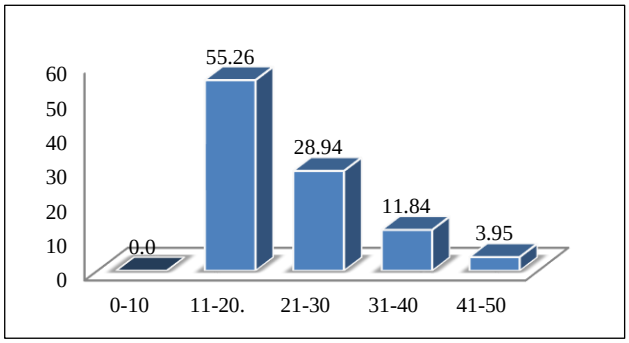

Figure 12: Age distribution in 21 cases of fibroadenoma.

Clinical presentation of 21 cases of fibroadenoma

In this study of 21 cases of fibroadenoma, all (100%) presented with lump in breast. Only 1 case (4.76%) presented with pain and tenderness.

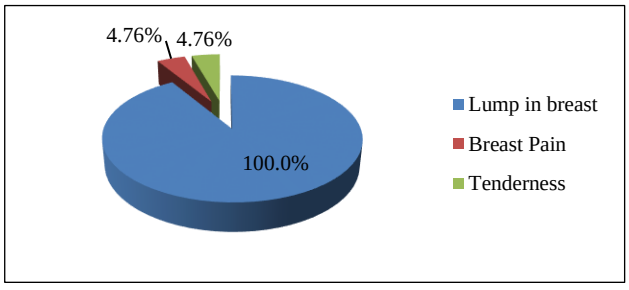

Figure 13: Clinical presentation of 21 cases of fibroadenoma.

Clinical presentation of 3 cases of duct ectasia

2 out of 3 patients (66.67%) of duct ectasia presented with lump in breast while 1 patient (33.33%) had

discharging sinus at periareolar region discharging pus. One patient (33.33%) had straw coloured nipple discharge and one (33.33%) had nipple retraction, erythema of the nipple and areola and tenderness at the involved part of breast. Left breast was involved in 66.67% cases while right in only 33.33% cases.

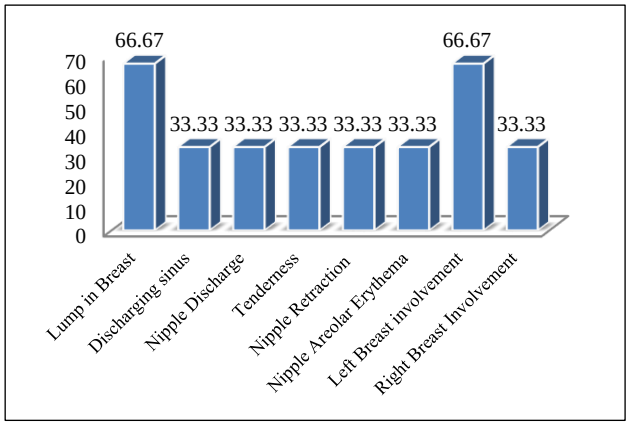

Figure 14: Clinical presentation of 3 cases of duct ectasia.

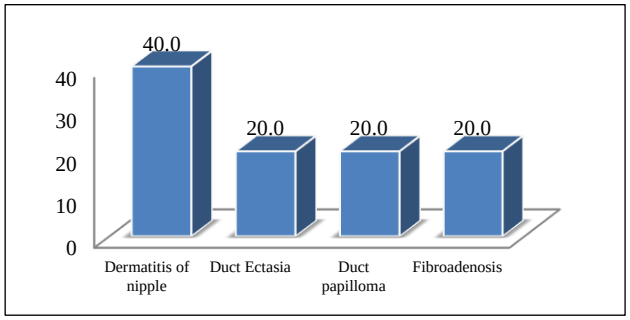

Figure 15: Type of discharge in 5 cases of nipple discharge with their diagnosis.

In this study were 5 cases of nipple discharge. 3 (60%) cases had serous discharge and 2 (40%) had serosanguinous discharge. In serous discharge 2 cases (40%) were of dermatitis nipple and 1 case (20%) of duct ectasia.

In serosanguinous discharge 1 case (20%) each was of duct papilloma and fibroadenosis.

Age distribution of 19 cases of mastitis

In the present study majority of cases 73.68% were in their third decade of life and15.79% cases in 4th decade, while 5.27% each in 2nd and 5th decade of life.

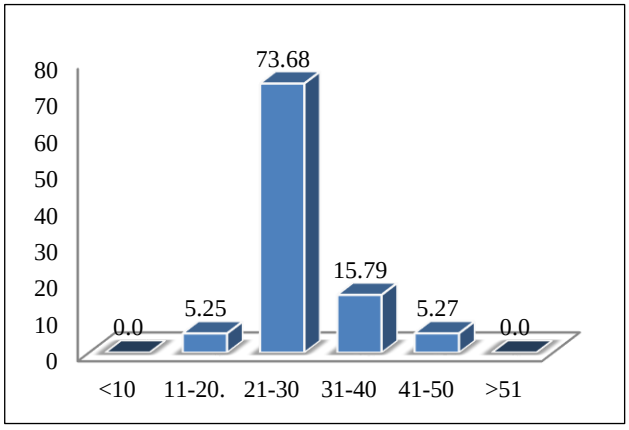

Figure 16: Age distribution of 19 cases of mastitis.

Distribution of cases according to lactational status

63.15 cases were lactating and 36.85 cases were non-lactating. In other words, puerperial mastitis was commoner then non-puerperial mastitis.

Table 1: Summary of patients in whom repeat FNAC showed malignancy.

Pt. no.	Age	Clinical presentation	Initial FNAC finding	Mammogram abnormality	Repeat FNAC finding
1	50	Diffuse nodularity	Benign breast tissue	Asymmetric density	DCIS
2	48	Diffuse nodularity	Fibrocystic changes	Micro-calcification	DCIS
3	37	Irregular firm lump	Sclerosing adenosis	Micro-calcification	Infiltrating ductal Ca
4	38	Irregular firm lump	Fibrocystic changes	Asymmetric density/ micro-calcination	DCIS

DCIS - ductal carcinoma in situ; Ca.- carcinoma

However due to limitations of clinical assessment and FNAC there were some patients in whom initially either a diagnosis of BBD was made or results of initial work-up were inconclusive, on repeat biopsy or on excision biopsy, done on the basis of strong clinical suspicion and suspicious findings on mammography, these patients were found to be harboring malignancy.

In all 4 patients repeat FNAC was dine due to suspicious findings on mammography. Patients no. 1 and 2 presented with non-tender, asymmetrical diffuse nodularity that persisted after 2 menstrual cycles. Initial FNAC pathology in first patients was benign breast tissue and fibrocystic change in second patient. Repeat FNAC showed DCIS in both.

Patient no. 3 and 4 presented with irregular firm lump with initial FNAC pathology showing sclerosing adenosis and fibrocystic changes respectively. Repeat biopsy showed infiltrating ductal carcinoma in one patient and DCIS in other.

Table 2: Summary of patients showing malignancy on excision biopsy.

Pt. no.	Age	Clinical presentation	Initial FNAC / pathology	Excision biopsy finding
5	49	Lump	Ductal epithelial hyperplasia with mild pleomorphism	IInvasive breast carcinoma
6	46	Lump	Mild atypia with cystic changes and epithelial hyperplasia	Ductal carcinoma
7	45	Lump	Fibroadenoma	Lobular carcinoma
8	34	Cystic Lump	Clear cystic fluid (with residual lump)	Ductal Ca
9	47	Cystic Lump	Bloody cystic fluid	Intra cystic papillary neoplasm
10	34	Subareiolar lump with nipple retraction	Duct ectasia	Invasive breast carcinoma
11	45	Subareolar lump with bloody nipple discharge	Indraductal papillomatosis	Ductal carcinoma in situ

Patients no. 5 and 6 presented with hard lump in breast and initial FNAC findings showed epithelial hyperplasia, atypia or nuclear pleomorphism. Excision biopsy showed invasive breast carcinoma and DCIS in patient no 5 and 6 respectively.

Patient no. 7 presented with a lump. FNAC finding showed fibroadenoma. However, on excision biopsy patient was found to be harboring lobular carcinoma.

Patient no. 8 and 9 presented with cystic lump. In one patient, there was a residual lump after aspiration of cyst, for which excision biopsy was done and ductal carcinoma was found. The other patient had bloody cystic fluid and on excision biopsy was found to be having intracystic papillary neoplasm.

Patient no. 10 had a subareolar lump with nipple retraction and initial diagnosis was duct ectasia during subsequent follow-up there was recurrence of lump and patient was found to be having invasive carcinoma of breast. Patient no. 11 had a subareolar lump with bloody nipple discharge. Initial diagnosis was intraductal papillomatosis and excision biopsy patient was found to be having DCIS.

The clinical diagnosis of all the above lesions were confirmed by

- Fine needle aspiration biopsy cytology
- Histopathology and when required, complemented with
- Mammography, and ultrasonomammography.

DISCUSSION

In the present study, a total of 76 female and 2 male cases of BBD were reported who attended the out-patient department or were admitted as indoor patients in the department of surgery, B.R.D. Medical College Gorakhpur Uttar Pradesh from December 2015 to December 2016.

In the present study, 40% (51.28%) were in age group of 21 to 30 years and 18 patients (23.07%) were in the age group of 31 to 40 years. The mean age was 28.56 year. All cases were female except two cases of gynaecomastia. The result of the present study is in conformity with Nayak and Kulkarni who also found the commonest age group between 15 to 35 years with an average of 27 years.[4]

In the present study, the commonest lesion of fibroadenosis (34.6%) followed by fibroadenoma (26.9%) and mastitis (24.35%). With the present understanding that fibrocystic disease constitutes the lobular and ductal involuational changes Hughes Mansel, The reported incidence of apocrine and cystic changes in recent series has been as high as 50% Welling and Alpers.[5] Compared with this the incidence of fibroadenosis is low in our country and this may be due to early marriage, early and frequent child birth and higher incidence of breast felling.

Cox et al, in their series of 753 patients of BBD, found fibroadenosis in 21%, cyst in 16% followed by fibroadenoma in 8% cases.[6] Rangabashyam et al, in their series of 213 cases of BBD, the commonest lesion found

to be fibroadenoma (57.28%) followed by fibroadenosis (16.43%) and chronic pyogenic abscess (7.51%).[7]

Fibroadenosis

In the present series, majority of patients of fibroadenosis were found to be in their third decade (59.25%) and fourth decade (25.92%) of life. Marcuse (1962)8 in his study of 794 patients of fibroadenosis found the highest incidence in fifth decade (298 patients) and forth decade (284 patients) of life. Haagensen reported its greatest frequency in the period between 35-50 years of age.[9]

Pattern of mastalgia in fibroadenosis in this study was found to be cyclical in 74.07% and acyclical in 25.93%. This is in accordance with reports of Wisbey et al and Webster JT.[10]

Based on recent etiological theories like water retention and dietary excess or deficiency of fatty acids Mansel, various modalities of treatment in form of reassurance, Vitamin E, Analgesics, diuretics and gonadotropins have been tried.[11]

Fibroadenoma

Although fibroadenoma was second most common (26.9) lesion in our series, it has been reported as the most common solid tumor by Page et al, but in his series women less than 30 years of age were included.[12]

In the present study majority of patients were in third decade of life (57.14%) followed by second (28.57%) and fourth (14.28%) decades of life.

Wilkinson and Forrest, in their study of 134 cases of fibroadenoma reported painless lump in 71% cases detected by patient, painful lump in 20% cases and in 9% cases the clinician detected the lump.[13]

Duct ectasia

In the present series incidence of duct ectasia was 3.84% and majority of patients were in their fifth decade. Nipple discharge was a feature in 33.33% cases, nipple retraction in 33.33% and nipple and areolar erythema in 33.33% cases of duct ectasia.

Sandison and Walker, in their series found a palpable mass in 63% cases, prominent nipple discharge in 48% cases, nipple retraction in 9% cases.[14]

Nipple discharge

In this study, the incidence of nipple discharge was 6.41% and mean age of patients 34.6% years. It constitutes the most distinct symptoms and occurs in 5-15% of women having breast problem Lewison and Chambers.[15] Copeland and Huggins found average age to be 38.91 years as against 49 years in patients having discharge with malignancy.[16]

In this study, serous discharge was there in 60% cases and sero sanguinous discharge in 40% cases. A palpable lump was present in 60% cases of nipple discharge. Rimsten et al, found serous discharge in 57.5%, blood stained discharge in 30% and purulent discharge in 12.5% of patients.[17]

Duct papilloma

There was a single case of duct papilloma in present series, aged 42-year female. Madalin et al found centrally situated duct papilloma in 58% of hundred patients of nipple discharge and cancer was present in 18 cases.[18] Rosai also stated that concurrent complex proliferations such as florid adenosis or papillomas could cause difficulty in identifying intraepithelial neoplasia of ANDI/DCIS spectrum.[19]

Mastitis

In the present study, the incidence of mastitis was 24.35%. The highest incidence was found in third decade of life (73.68%). Puerperial mastitis (63.15%) was commoner than non-puerperial mastitis (36.85%). Soltau and Hatcher gave the incidence of mastitis as 2.1% of total maternal ward admissions.[20]

Tuberculosis of breast

In this study, there was 1 case (1.28%) of tuberculosis of breast in a 30-year-old female.

Tuberculosis of breast is primarily a disease of women in the age group of 20-25 years Mukherjee et al, Dubey and Agarwal.[21] In the present series, patient had a painless lump in the breast and axillary lymphadenopathy was present.

Cystosarcoma phylloides

In the present study, there was a single case (1.28%) of Cystosarcoma phylloides, a lady aged 43 years. She presented with a painless lump of her left breast. Aerial reported the incidence of cystosarcoma phylloides as 0.3% of all breast tumours.[22]

Dermatitis of nipple

There were 2 cases (2.56%) of dermatitis of nipple in present series. All had itching of nipple and areola. Both cases responded well to conservative treatment.

Gynaecomastia

There were 2 cases of gynaecomastia (2.56%) in present series. No endocrindological abnormality was found and excision of enlarged breast was performed.

According to Karsner, gynaecomastia is the result of hormone imbalance, due to relative or absolute increase in oestrogen.[23]

CONCLUSION

From the present study, the conclusions derived are as follows:

- BBD are most common in third decade (51.28%) followed by fourth decade (23.07%) of life
- Most of the patients belonged to middle (37.17%) and higher (32.5%) socio economic status
- Early menarche, nulliparity, fewer offsprings and late first confinement were found to be associated with increased incidence of BBD
- Fibroadenosis (34.61%) was found to be the commonest lesion, followed by fibroadenoma (26.92%) and mastitis (24.35%)
- Majority of patients had pain (64.1%) and lump (42.3%) in breast as presenting symptom
- Mastitis was also common in third decade (73.68%) of life. Puerperial (64.15%) mastitis was more common than non-puerperial (36.85%) mastitis
- Incidence of duct ectasia in present series was 3.84% and majority of patients were in their fifth decade. Excision followed by antibiotic therapy was advocated as treatment
- There was 1 case of (1.28%) of Tuberculosis of breast. The incidence was in conformity with other reported series
- There was 1 case of (1.28%) of galactocele of breast which was aspirated and because of recurrence excision had to be performed after 1 week
- There was a single case of (1.28%) of cystosarcoma phylloides. Excision of lump with gross clear margin was performed
- There were 2 cases (2.56%) of dermatitis of nipple presenting with itching of nipple. Both responded to conservative treatment
- There was a single case (1.28%) of duct papilloma presenting with subareolar lump and bloody nipple discharge. Excision was performed
- There were 2 cases of gynaecomastia, without any endocrinological abnormality. Excision of enlarged breast was performed
- There were 11 cases with initial diagnosis of BBD, in whom repeat FNAC or excisional biopsy done because of inconclusive findings on initial FNAC, suspicious finding on mammography or on strong clinical suspicion, showed malignancy.

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Conflict of interest: None declared
Ethical approval: The study was approved by the institutional ethics committee

REFERENCES

1. Devit JE. Fibrocystic disease of breast. Surg Gynaecol Obstet. 1972;134;803-6.
2. Hughes LE, Mansel RE. Benign breast disease. Recent advances in surgery. Churchill Livingstone. 1982;11:101-28.
3. Hughes LE, Mansel RE, Webster DJT. Abberations of normal development and involution (ANDI). A new perspective on pathogenesis and nomenclature on benign breast disorders. Lancet. 1987;2:1316-9.
4. Nayak KG, Kulkarni RM. Benign tumours of the breast. The Antiseptic. 1985;82(4):325-30.
5. Welling SR, Alpers CE. Apocrine cystic metaplasia. Hum path. 1987;18:381.
6. Cox PJ, Li MKW, Ellis H. Spectrum of breast disease in out patient surgical practice. J Roy Soc Med. 1982;75:857.
7. Rangabashyam N, Gynanaprakasam D, Krishnargy B, Manohar V. Spectrum of benign breast lesion in Madras. J Royal Coll Surg Edin. 1983;28(6):369-73.
8. Marcuse PM. Fibrocystic disease of breast; Correlation of morphological features with clinical course. Am J Surg. 1962;103:428-31.
9. Haagensen CD. Diseases of the breast. 2nd Edn Revised, WB Saunders and Col, Philadelphia; 1971.
10. Wisbey JR, Mansel RE, Pey JK, Kumar S, Hughes LE, Preece PL. Natural history of breast pain. Lancet. 1983;7:76-9.
11. Mansel RE Benign breast disease. Practitioner. 1992;236:830-7.
12. Page DL, Vander Z, Waag R, Rogers LW, Williams LT, Waler WE, et al. Relation between component parts of fibrocystic disease complex and breast cancer. JNCI. 1978;61:1055-63.
13. Wilkinson S, Anderson TJ, Rifkind E, Chetty U, Forrest APM, Fibroadenoma of the breast a follow up of conservative management. BR J Surg. 1989;76:390-1.
14. Sandison AT, Waler JC. Inflammatory mastitis, mammary duct ectasia, and mammary fistula. BR J Surg. 1962;50:57-64.
15. Lewison EF, Chambers RG. Clinical significance of the nipple discharge. JAMA. 1951;147:295-9.
16. Copeland NM, Higgins TG. Significance of discharge from nipple in nonpuerperial mammary conditions. Ann Surg. 1960;151:638-48.
17. Rimsten A, Skoog V, Stenkvist B. On the significance of nipple discharge in diagnosis of breast disease. Acta Chir Scand. 1976;142:513-8.
18. Madalin HS, Claeett OT, McDonal JR. Lesions of the breast associated with discharge from nipple. Ann Surg. 1957;146:751-63.
19. Rosai J, Borderline epithelial lesions of the breast. Am J Surg Pathol. 1991;15:209-22.
20. Soltau RK, Hatcher W. Some observations of the aetiology of breast abscess in peurperium. Br Med J. 1960;1:1603-7.
21. Mukherjee P, George M, Msheshwari HB, Rao CP. Tuberculosis of the breast. JIMA. 1974;62:410-2.

22. Ariel L. Skeletal metastasis in Cystosarcoma Phylloides. Arch Surg. 1961;2:275.
23. Karsner HT. Gynaecomastia. Am J Path. 1946;22:235.
24. Howell LP, Kline TS. Mc Ca. of breast: An unusual cytology finding in cyst fluid Aspirate. Cancer. 1990;65:277-82.
25. Fisher B, Redmond C. Benign disease of breast. N Eng J Med. 1997;312:672.
26. Kintanar EB, Raju V. An analysis of ANDI patterns associated with the intra ductal and invasive breast Ca. Lab Invest. 1991;64:12A.

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