

NON-INFLAMMATORY BENIGN BREAST DISEASES (NIBBD): CONFUSING SURGICAL DISORDERS OF BREAST CANCER

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ABSTRACT

BACKGROUND

Benign Breast diseases are of unknown aetiology, they could be inflammatory or non-inflammatory disorders of breast disease. Among these, NIBBD is a most confusing surgical disorder, diagnosis should be made at least after three assessments.

AIM

- To evaluate the prevalence of NIBBD.
- Clinical analysis of NIBBD in women and reproductive age group between 20-40 years.
- To prevent radical breast surgery in NIBBD.
- To know about benign breast lesions in males excluding gynaecomastia.

MATERIALS AND METHODS

A clinicopathological study of NIBBD was taken in KIMS Hospital, Hubli, a tertiary care government hospital between June 2014 to June 2015. A total of 56 cases were selected of which 51 cases were submitted for clinicopathological study.

RESULTS

Increase incidents of fibroadenoma in females, in young age group, is noticed due to early menarche, early marriage, multiparity, fibrocystic diseases involvement at the age of 35 years, usually appear on either side of the breast. Moderate loss of glandular tissue is accelerated and replaced by connective tissue, hence fibrocystic diseases appear at late age group. Gynaecomastia is the only NIBBD, seen unilaterally in males.

CONCLUSION

NIBBD is more common in childbearing age group i.e. 15 to 45 years of age. Triple assessment is the choice of diagnosis, imaging modality being USG of the breast and mammography in suspected cases of malignancy. Most of the patients require surgical intervention and remodelling of the Breast, according to the volume loss of breast tissue.

KEYWORDS

Non-inflammatory Benign Breast Diseases, Triple Assessment, Core biopsy, Surgical intervention.

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INTRODUCTION: Breast is susceptible to wide number of benign and malignant diseases. Benign breast diseases could be inflammatory or non-inflammatory. Among these, non-inflammatory breast diseases are most confusing surgical disorder in these all are worried about malignancy.

Some of the benign diseases are problematic due to clinical resemblance to breast cancer. Another factor leading to confusion is the use of different forms to describe some disorders namely; fibroadenoma, hyperplastic cystic disease & hormonal mastopathy, chronic mastitis, etc., due to absence of pathological definitions and also confirmation regarding normal prevalence of development, physiological changes.

NIBBD is mostly non-neoplastic and abnormal in hormonal level. Understanding of aetiology of NIBBD requires endocrine analysis, hormonal estimation with radioimmune assay may help. Ultrasonography of breast, core biopsy mammography are the diagnostic modalities to rule out breast cancer.

MATERIALS AND METHODS: A clinicopathological study of NIBBD was undertaken in KIMS Hospital, Hubli, Karnataka between June 2014 to June 2015.

A total of 56 cases were selectively collected and CPS conducted only for 51 NIBBD cases.

Inclusion Criteria: All male and female patients in the reproductive age group, 15 to 54 with history suggestive of benign breast conditions were included.

Exclusion Criteria: Postmenopausal women with symptoms and signs suggestive of breast cancer & inflammatory disorders like chronic mastitis were excluded.

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Out of 56, 5 were excluded because of chronic mastitis and malignant lesion of breast.

Classification of NIBBD:

Group "A":

1. Mammary dysplasia - fibrocystic diseases;
 - i. Fibrosis of Breast.
 - ii. Cystic diseases.
 - iii. Adenosis.
2. Benign Neoplasm of Breast;
 - i. Epithelial Duct papilloma
 Adenoma
 - ii. Connective tissue Neurofibroma
 Lipoma
 Adenoplasia
 - iii. Mixed Fibroadenoma
 Cystosarcoma Phyllodes
3. Mammary duct adenoma and periductal mammary abscesses

Group "B": Benign Breast Disease in male - Gynaecomastia.

The breast cysts are most commonly seen in last decade of reproductive life due to involution of stroma and epithelium. They are often multiple, may be bilateral and sometimes they mimic malignancy. Diagnosis is confirmed by core biopsy and ultrasonography.

Solitary and small cysts can be aspirated and if they resolve completely and if they are not bloody then no further treatment is required. But if they recur and are bloody, then complete excision and biopsy report is needed to exclude underlying malignancy.

Duct papillomas are present at epithelium of subareolar region. Lesions are at periphery and they are multiple. These lesions may harbour typical hyperplasia and ductal carcinoma in situ. These lesions are present in the age group between 36 to 50 years. These patients present with bloody nipple discharge. When double cell layer of epithelium without atypia is seen, lesions are labelled as carcinoma in situ. Treatment modality is removal of papilloma and involved duct, microdochoectomy or cone excision of the major ducts can be done.^(1,2,3 & 4)

Fibroadenoma usually arises in fully developed breast during 18-25 years age and rarely seen in older age group. They arise from hyperplasia of single lobule and grow up to 2-3 cm size. The other variant is giant Fibroadenoma occurring during puberty of >5 cm size. It has capsule and can be enucleated from the breast easily.

Diagnosis of Fibroadenoma can be established by FNAC. In younger patients to observe, and in older patients more than 35 years excision is better to exclude carcinoma.^(5,6)

The effective treatment is surgical excision. The role of hormonal therapy is not well established.

Phyllodes tumour is known as benign serocystic disease of Brodie or cystosarcoma phyllodes usually occur in females over 40 years of age. Microscopically, a cyst formation results into leaf like appearance, so labelled as "Phyllodes". Clinically, these lesions give bosselated surface occasionally ulceration of the skin occurs due to pressure necrosis.

Diagnosis is confirmed by FNAC which will tell us whether benign or malignant.^(5,7)

The treatment is enucleation or wide local excision in younger patients while in older patients and recurrent tumours, mastectomy is the treatment of choice and further followup.^(3,8)

A study was done by Hothause, Smith, Naution in Western Australia from 1983 to 1994. 40 women were diagnosed and treated for cystosarcoma Phyllodes. Followup done for 26 patients. Out of these, one had recurrence as malignancy and 3 had benign recurrence. There were no recurrences in patients with lesion of 2 cm. Conclusion is breast conserving surgery is useful in 96.2% of patients.⁽⁷⁾

Lipomas are the commonest benign neoplasms, also found in the breast, but these are very rare. These lesions can sometimes be confused with cystosarcoma Phyllodes and are best treated by local excision.

Duct ectasia is clinically present as lump in the breast beneath areola. Segmental ducts are involved and nipple discharge is a common feature. The pathogenesis begins as periductal inflammation leading to periductal fibrosis and ectasia. This condition is common in premenopausal age group. Localised scar formations give the picture of fixed lumps and are labelled as "Comedo Mastitis". These are treated by circumareolar incision and biopsy followup.⁽⁹⁾

These are the BBD's that occur in females. Gynaecomastia is a common benign breast condition in male. In this study, total 6 cases have been taken, out of which 3 patients had unilateral breast enlargement, another 3 cases had bilateral breast swelling.

Young patients approach surgeon for unilateral breast enlargement, which is most of the time physiological. Reassurance and convincing is required. Surgery is not usually advisable, but in persistent gynaecomastia unilaterally with huge mass requires excision, subareolar mastectomy. Cases with bilateral breast swelling usually have drug history, testicular atrophy, liver diseases. Subareolar mastectomy specimen biopsy confirms the diagnosis.

OBSERVATION:

Name of disease	Number of cases	(%)
Fibroadenoma	24	47.8
Fibroadenosis	5	10.2
Fibrocystic Diseases	8	15.4
Cystosarcoma Phyllodes	6	11.5
Duct Ectasia	1	1.8
Lipoma	1	1.8
Gynaecomastia	6	11.5

Table 1: Prevalence and NIBBD Disease

Fibroadenoma, hyperplastic cystic and fibrocystic disease are the second line of BBD, 13 cases were seen. i.e 25.5% present with painful lump. Size varies from 4X4 cms to 6X6 cms. FNAC results in Macrocyst and fibrosis, management is done with excision completely.^(1,2,3)

Cystosarcoma phyllodes of cases forming 11.5% presented with huge lump occupying almost whole of the breast histologically most of them showed intracanalicular

fibroadenoma with mixed stroma with atypical form. Simple mastectomy done for 5 cases. Premenopausal- Out of 6 cases 5 cases. As age these patients is premenopausal. Out of 6 cases, 5 cases were near menopausal age group suggestive of 4th and 5th decades of life. The incidents of malignancy in these lesions being 1 out of 4. So, followup is mandatory.⁸

Age Group in Years	Number of case
<10 Years	-
10-20 Years	14
21-30 Years	24
31-40 Years	9
<41 Years	4

Table 2: Age wise NIBBD clinically

In NIBBD, the most common age group involvement is 22-30 years of age. Early menarche, early marriage, multiparity could be the cause of fibroadenoma of the breast, due to lot of hormonal changes in the body. Cystosarcoma phyllodes appears in later age group. In the later age group, the changes in the breast tissue, loss of glandular tissue is replaced by fibrosis and cystic formation.⁴

NIBBD	Final Diagnosis	FNAC
FA	24	21
FAS & FC	163	09
CP	06	04

Table 3: Clinical diagnosis Vs. Tissue diagnosis

24 patients of fibroadenoma were submitted for FNAC of which 21 cases are proved by tissue diagnosis as fibroadenoma. This is about 85% fibrocystic disease and fibroadenosis is 13% of the patients. All of them are submitted for FNAC, 9 of them were proved and about 60-70%. Out of 6 cases of cystosarcoma phyllodes submitted to FNAC, 4 of them were diagnosed.

Management	Number of Cases	Percentage
Medical	02	04
Surgical	49	96
Total	51	100

Table 4: Management of NIBBD in Female and Male

Surgical management is the choice of treatment in NIBBD, but reassurance and medical management is advisable in Fibroadenosis of breast. In gynaecomastia, 96% is the surgical treatment & management and 4% of the cases required medical management and reassurance.^(1,3,8)

DISCUSSION: In the present study, there are twenty four cases of fibroadenoma amounting to 47.8%. This is half of the total number of cases taken from study as the bulk of NIBBD. Fibroadenoma is a disease of younger age group because of hormonal changes, it is common among females with early menarche, early parity and multiple parity and

short interval between two pregnancies. Fibrocystic disease is next in line in NIBBD. In my study, there are 8 cases amounting to 15.4% this is commonly seen in elderly patient due to the replacement of fibrous tissue replaces glandular tissue. In my study, 6 cases of cystosarcoma phyllodes included, that is 11.5% seen in after the age of 50-60 with huge mass disfiguring the size and shape of the breast which requires wide excision and tissue confirmation. In my study, duct ectasia and lipoma, 1 each case included, which requires simple excision. There were 6 gynaecomastia cases included which required excision in unilateral cases and reassurance and hormone replacement as the condition required. Idiopathic and bilateral gynaecomastia have definite cause and that cause should be treated .

In the present study of 51 cases, most of the NIBBDs are seen in the age group of 21-30 years, 24 in number which makes half of the total cases included for the study. These are usually fibroadenomas. Next is the 10-20 years age group. These are mostly fibroadenoma and 14 in number. 9 cases are included in the age group of 31-40 years, these are fibrocystic disease cases due to the replacement of fibrous tissue, mainly in parous women as there are cyclic changes in the breast. 4 cases are seen more than 40 years group mainly fibrocystic disease and cystosarcoma phyllodes.

All the NIBBD patients are diagnosed clinically, all of them submitted for tissue diagnosis and it is essential for the surgical intervention and management even though clinicians are very sound with their clinical diagnosis. As FNAC is 85% sensitive, other modalities like core biopsy sometimes required.

NIBBDs in both male and female patients, 49 out of 51 taken for my study. 49 of them submitted for surgery which amounts to 96%. This clearly tells NIBBDs mostly require surgical intervention, medical management advice for 2 cases which amounts to 4%. These cases are of male and diagnosis being unilateral gynaecomastia.

CONCLUSION: NIBBD is the benign disorder of the breast and is a most confusing disorder of the breast, unless ruled out. Fibroadenoma is the major disorder among the NIBBDs. Highest prevalence of NIBBD in my study being fibroadenoma breast in young age group amounting to 47.8% fibrocystic disease of breast is 15.4% & cystosarcoma phylloids of breast is 15.5% respectively.⁴

Patients in the younger age group as compared to western women, early menarche and early marriage and multiparity is common in this country and also in this part of region. Patient presented mainly with lump in the breast, painless or painful and few of them had nipple discharge. All of them were clinically examined thoroughly and investigated. Ultrasonography of the breast was done and FNAC was also done in all these cases for tissue diagnosis and this helped for definitive surgical procedure and histopathological study of tissue helped to rule out malignancy.

Multiple pregnancies with shorter intervals between two child births are associated with persistent altered levels of estrogens and proliferation of terminal ductal and lobular units. Hyperplastic lesions may transfer of the lesions have malignant potential.

Male BBD study conducted by Adenij et al¹⁰ concluded that BBD in male is gynaecomastia & it is 10%. In my study, it is 11%. Patients who presented with bilateral gynaecomastia had bilateral testicular atrophy, hence low testosterone, and higher oestrogen level causes bilateral gynaecomastia. Most of the patients were submitted to surgical way of management which helps in definite tissue diagnosis, simple infections treated postoperatively and followup by short period. In my study, no other benign diseases noted other than gynaecomastia.

Self-breast examination (SBE) is the preferred modality for early presentation to the clinician to reduce breast disorders. Triple assessment is the current modality for breast diseases which includes clinical examination of the breast, imaging with ultrasonography, & mammography is the second assessment. Surgical intervention for tissue diagnosis is done and it is the third assessment.

Prevention of radical breast surgery in NIBBD is required nowadays for better management by aesthetic procedures like augmentation procedure.⁸

Volume loss of breast tissues especially in younger age patients requires reconstruction with multiple flaps and fat transfer from the abdomen to maintain breast shape and for symmetry with other breast and for cosmetic reasons.

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