Clinico- Radiological -Pathological Study of Benign Breast Diseases

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ABSTRACT

Introduction: Benign breast diseases (BBDs) are the group of non-cancerous condition which include a variety of diseases. The patient commonly presents with pain, lump or nipple discharge. The aim of this study is to study the patterns of BBDs and to correlate the clinical diagnosis with radiological and pathological findings.

Material and Methods: Three hundred patients were included in the study who attended the OPD of General Surgery Department at Military Hospital, Dehradun from October 2017 to October 2018. All the patients underwent detailed history recording and clinical examination. Subsequently based on assessment they underwent Ultrasound or Mammography of Breast. After that they underwent FNAC or Excision Biopsy with Histopathological (HPE) examination. In the end clinical examination was correlated with radiological and pathological findings.

Result: Out of 300 patients, the most common presentation was breast Lump (264 patient), followed by breast pain (112 patients) and nipple discharge (26 patients). The most common age of presentation was 21-30 years with Right side of the breast more commonly involved than left side. The most common clinical diagnosis was Fibroadenoma (42%), followed by fibroadenosis (16%) and Breast abscess (13%). Overall clinical diagnosis of BBDs was corroborated with radiological and pathological findings in 98.6% cases.

Conclusion: Benign breast diseases are common in female patients and fibroadenoma is the commonest of them all. Triple assessment provided a quick diagnosis and it alleviated unnecessary anxiety from the patients about breast cancer

Keywords: Benign Breast Diseases (BBDs), Histopathological Examination (HPE), Fine Needle Aspiration Cytology (FNAC), Fibroadenoma, Breast Lump, Breast Pain, Nipple Discharge

INTRODUCTION

Mammary glands or breasts are a distinguishing and unique feature of mammals.[1] Its development and growth are under the control of various hormones and various physiological status like lactation, pregnancy. It also undergoes several cyclical changes during the reproductive life and is influenced by the hormones during puberty, menstruation, puberty and menopause.

Benign breast diseases (BBDs) is a group of disorder which comprises of non-cancerous condition. It includes cyclical mastalgia, physiological swelling, palpable lumps, nipple discharge, infection or inflammation. It is the most common cause of breast problems in females and is more frequent than the malignant diseases.[2-7] The incidence of BBDs is almost ten times than the breast cancer in west.[8] Approximately 30-40 percent of the women suffering from BBDs require

treatment at some time in their life.[9]

Until recently benign disorders were given very less importance and the terminology is also confusing sometimes, inadequate classification and poor correlation between clinical, radiological and pathological features.[10] The popular classification of BBDs is according to the Aberration of the Normal Development and Involution (ANDI). A new scoring system has been devised by Love S et al.[11] also called as Nashville classification. Clinically BBDs can be classified as (i) Physiological swelling and tenderness (ii) breast pain (iii) palpable lump (iv) nipple discharge (v) infection or inflammation. Although BBDs is not life threatening, clinicians require a thorough knowledge so that clear explanations can be given to patients and appropriate treatment can be instituted, and unnecessary long term follow up can be avoided.[12] Various studies had shown that there is a relationship between BBDs and breast cancer. Risk of cancer varies according to the histological grading of the BBDs.[13-16]

In this study we profile the incidence of BBDs, the relative frequency of different types and their clinical features. Also, we attempted at correlating the clinical and radiological and pathological findings.

Study objectives were to study the natural history and different modes of clinical presentation of BBDs, to study the different types of pathological and radiological presentations and to correlate the clinical diagnosis with radiological and histopathological diagnosis in order to know the accuracy of clinical diagnosis.

MATERIAL AND METHODS

The study was conducted in the Department of General Surgery at Military Hospital,

Dehradun, from October 2017 to October 2018. Initial 300 patients who attended the department were included in this study. The study was mainly meant for studying the age distribution, to evaluate the different types of benign

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diseases of the breast and their mode of presentation and the correlation of clinical features with radiological and pathological findings were required.

Female patients with any of the benign disease or disorders of the breast with no obvious malignant diseases were included in the study. Patients with obvious malignant disease on clinical examination and those patients which had BIRADS 4 or more on USG/Mammography were excluded from the study. However, any patient who was diagnosed with carcinoma or proliferative disease on pathological criteria after she was clinically diagnosed to be benign were included in this study.

All female patient who attended the OPD underwent detailed history taking and clinical examination and a clinical diagnosis was made. Subsequently, if required patient underwent Ultrasound breast or Mammography. Subsequently they underwent Fine Needle Aspiration Cytology (FNAC) or excision biopsy which was sent for Histopathological Examination (HPE). The FNAC smears were divided into Non-Proliferative or proliferative without atypia/atypical proliferative lesion/frank carcinoma. Based on these findings appropriate treatment was done. The clinical diagnosis of BBDs was compared with the cytological or histological findings and the accuracy of the clinical diagnosis was evaluated.
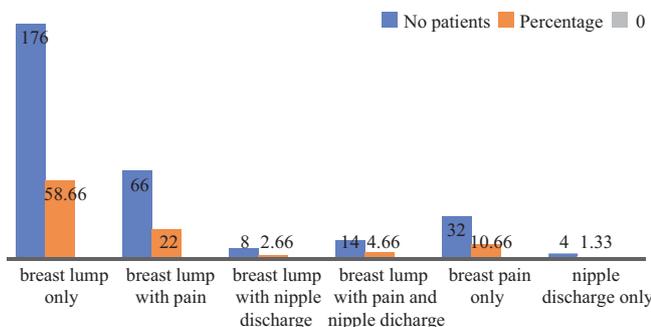
RESULT

A total of 300 patients who attended the department of general surgery were included in the study.

In this study youngest patient to attend the department was 15 years of age and the eldest one was 73 years old. Maximum number of patients were in the age group of 21-30, followed
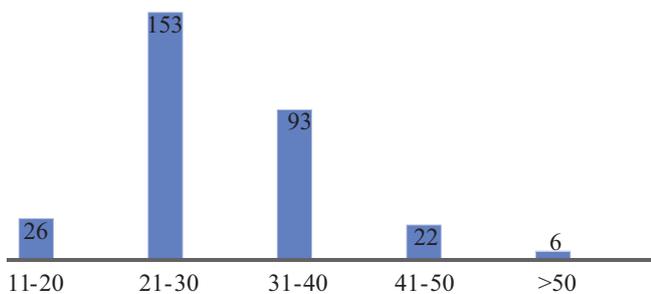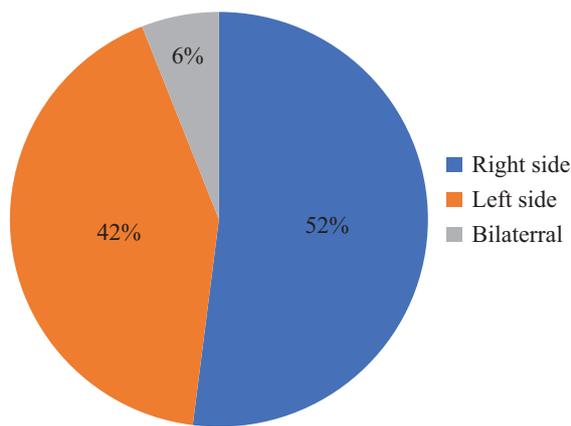

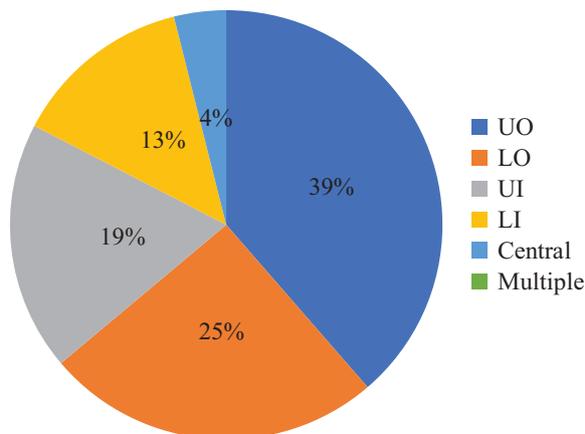**Table/Figure-1:** Age wise distribution of patients

Number of patients with breast lump - 264(88%)
Number of patients with breast pain - 112(37.33%)
Number of patients with nipple discharge - 26(8.67%)

Table/Figure-2: Different Types of presentation and their incidence

Table/Figure-3: Distribution of BBDs by side

Table/Figure-4: Quadrant wise distribution

Diagnosis	No of patients	Percentage
Fibroadenoma	126	42
Fibroadenosis	48	16
Abscess	39	13
Mastalgia	32	10.66
Nipple Discharge		8.66
Duct Ectasia	23	
Intraductal Papilloma	03	
Galactocele	12	4
Antibioma	8	2.66
Proliferative disease without atypia	6	2
Proliferative disease with florid hyperplasia	2	0.66
Invasive ductal Carcinoma	1	0.33

Table/ Figure-5: Incidence of different types of Benign Breast Disease

Disease	Clinical	USG/ Mammography and HPR
Fibroadenoma	121	126
Fibroadenosis	48	46
Duct Ectasia	23	23
Galactocele	12	12
Antibioma	8	8
Carcinoma Breast	0	1

Table/Figure-6: Comparison of clinical diagnosis with USG/ Mammography and HPR

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by 31-40. The mean age of presentation was 29.3 years. The age wise distribution of patients is given in Figure-1

The symptoms of patient were broadly divided into

a. Breast Lump
b. Breast pain
c. Nipple Discharge

Many of the patient presented combination of two or more symptoms. The commonest presentation was breast lump which compromised of 264 (88%). Out of these 176 (58.66%) presented with breast lump only, while rest 88 patient (29.33%) presented with breast lump with associated symptoms.

112 cases (37.33%) presented with breast pain out of which 32(10.66%) had only mastalgia, who were treated conservatively. The rest 80 patients (26.66%) had associated symptoms like lump or nipple discharge. The pain was cyclical in more than two third of patients.

Total 26 patients (8.66%) presented with symptoms of nipple discharge, out of which 4 patients had only nipple discharge. Rest 22 cases (7.33%) presented with combination of symptoms. The discharge was bloody in 02 patients, yellow in 03 patients and serosanguinous in rest of them. On further investigations most of the patients with nipple discharge had duct ectasia as the cause, while only 3 patients had intraductal papilloma.

The different types of presentation and their incidence is shown in Table/Fig-2

Incidence of Benign Breast disease in the present study was found to be significantly higher on right side (52%), compared to left side (42%). In few cases (6%) disease was present on both sides.

The incidence of BBDs in this study was found to maximum in upper outer quadrant (109 patients), followed by lower outer quadrant (71 patients). Upper inner quadrant was involved in 53 patients while lower inner quadrant was involved in 38 patients. Central part was involved in 11 patients. In 18 patients the pathology was involving multiple quadrants.

In the present study most, common Benign Breast Disease diagnosed clinically and further correlated with radiological and pathological examination was Fibroadenoma (42%), followed by Fibro adenosis (16%) and Breast abscess (13%). 06(2%) patients had proliferative disease without atypia and 02 patients with florid hyperplasia. 01 patient had invasive ductal carcinoma which was missed on clinical examination and was reported on HPE. The incidence of various types BBDs is shown in Table/Fig-5

The sensitivity of clinical diagnosis in diagnosing different types of BBDs is as follows: -

DISCUSSION

Benign Breast diseases includes a various kind of conditions which ranges from normal, to aberrations in the physiology to frank diseases. The various presentations of BBDs include Breast lump, breast pain or nipple discharge. Many patients present with the combination of the symptoms. After detailed history taking, patient should undergo a triple assessment to make an early diagnosis.

In this study maximum number of patients who attended the general surgery department were in the age group of 21-30, followed by 31-40. The mean age of presentation was 29.3 years. The youngest patient to attend the department was 15 years of age and the eldest one was 73 years old. This is almost similar to the various studies conducted earlier.[17-19]

In a study conducted by Mima Maychet et al.[20], 87% of patient presented with the complaints of breast lump. In the study of Foncroft LM et al.[21], they found that 87.4% of the women who attended the Wesley Breast Clinic had presented with breast lumps, while in the series of Ratana Chaikanont T[22], a breast lump was the presenting symptom in 72.35% of the 331 benign breast patients. This was almost similar in this study where 88 percent of the patient presented with the complaints of breast lump.

The incidence of breast pain in our series was 37.3%, which was slightly higher to the breast pain series, which ranged from 12.8%- 30.3%.[19,22-27] Leis HP et al.,[28] reported that the incidence of breast discharge was only 9% of all the breast complaints in his study, which was almost equal to the 8.67% incidence which was found in this study.

In a study conducted by Mallikarjuna et al.[29], the most common quadrant involved is Upper outer, followed by lower outer and upper inner and lower inner quadrant. The incidence of BBDs in this study was found to maximum in upper outer quadrant (109 patients), followed by lower outer quadrant (71 patients). Upper inner quadrant was involved in 53 patients while lower inner quadrant was involved in 38 patients. Central part was involved in 11 patients. In 18 patients the pathology was involving multiple quadrants. This is almost similar to the studies done earlier.

The frequency of fibroadenoma ranged from 46.6%- 55.6% in most of the studies.[23-26] The peak incidence of fibroadenoma was from second to the third decade of life. In this study the incidence of fibroadenoma is 42% which is slightly less compared to the other studies.

Out of the 26 cases of nipple discharge, 03 were intraductal papilloma with nipple discharges and 23 were mammary duct ectasia. The treatment of the nipple discharge must be done first, to exclude carcinoma by occult blood test and cytology. A simple reassurance may then be sufficient, but if the discharge is proving to be intolerable, an operation must be done to remove the affected duct or ducts. A total excision of 2 cases of intraductal papilloma was done. Mammary duct ectasia generally does not require surgery and it should be managed conservatively.[30] We treated all cases of mammary duct ectasia by using a conservative management.

CONCLUSION

Benign breast diseases are a common problem in women. A lump in the breast is the commonest presentation. Breast pain and nipple discharge are the other symptoms. Many of the patients have more than one symptom. The commonest age group which is affected is the 21-30 years age group. Among the breast lumps, fibroadenoma is the commonest, followed by fibroadenosis and breast abscesses. The other

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lumps are relatively uncommon. Breast pain may occur alone or in association with a lump or a nipple discharge. The incidence of cyclical pain is more than two third amongst the patient presenting with breast pain. The nipple discharge, particularly if it is serous or greenish, is harmless. The clinical diagnoses of the benign breast lumps were accurate in 98.6% cases.

The risk factors for developing invasive carcinoma in the patients with proliferative lesions were also identified and the patients were advised follow-up. Since there is no consensus on the morphologic risk markers, in future, molecular genetic markers may help in the risk stratification, which will help in a better clinical management.

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