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Original Research Article

Spectrum of Benign Breast Diseases in the Hilly Areas of Garhwal, Uttarakhand, India

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Abstract

Objectives: This present study was aimed to evaluate the spectrum of benign breast diseases in terms of age, type, size and area of involvement in the women of hilly areas of Garhwal, Uttarakhand, India.

Methods: A total of 500 cases of benign breast diseases irrespective of age were enrolled in the study. A detail assessment, clinical examination and relevant investigations like ultrasonography or X-Ray mammography or FNAC (when needed) were performed in all women.

Results: Fibroadenoma was found to be the most common benign breast disease with 51.2% incidence, followed by abscess 11.6% and mastalgia 10.4%. Out of 500 cases, most of the benign breast disease cases 257(51.4%) were in age group of 25-40 years. 130(26%) cases were found to be in the age group of >40 years and 113(22.6%) cases were found in the age group of <25 years. Out of 256 cases of fibroadenomas, right breast was involved in 142 cases, left breast was involved in 109 cases and bilateral breast involvement was seen in 5 cases. Upper and outer quadrant was involved in most of the cases. The average size of fibroadenoma was 2 cm, with minimum of 0.5 cm and maximum of 10 cm.

Conclusions: Benign breast diseases has a preponderance in the middle aged women and fibroadenoma is the most common benign breast disease in the women of the hilly areas of Garhwal, Uttarakhand.

Keywords: Benign Breast Disorder, Age Group, Fibroadenoma.

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Introduction

The breast or mammary gland is a modified sweat gland which is covered by skin and subcutaneous tissue and rests on the pectoralis muscle, from which it is separated by pectoral fascia. The morpho functional unit of the organ is the single gland, a complex branching structure that is topographically arranged into lobes and which is made up of two major components: the terminal duct–lobular unit

(TDLU) and the large duct system [1]. The lobule, together with its terminal duct, has been called as the terminal duct lobular unit (TDLU). It connects with the subsegmental duct, which in turn leads to a segmental duct, and this to a collecting (lactiferous or galactophorous) duct, which empties into the nipple [1]. A fusiform dilation located beneath the nipple between the collecting and the segmental duct is known as the lactiferous sinus. The acini are surrounded by loose fibrovascular intralobular stroma, which contrasts with the denser and less cellular interlobular stroma [1].

Breast diseases range from self-limiting inflammatory diseases and mastalgia to life threatening invasive carcinomas [2]. Benign breast lesions are more common than malignant ones [3,4]. Benign breast disease formed the majority of the cases [5]. Benign breast diseases are more common in females of reproductive age especially in the second decade. The peak is attained in the fourth or fifth decade of life [6].

Globally, BBDs account for approximately 90% of all clinical case presentations related to the breast. Fibroadenomas, fibrocystic diseases and breast abscesses account for a good majority. The benign lesions outnumber the malignant ones by a factor of ten [7].

Some benign breast lesions can be a predisposing risk factor for developing malignancy in the later part of life [7,8]. So it is essential to recognize and study these lesions in detail which will help to segregate the high-risk group of patients from whom a regular surveillance is needed for an appropriate management. The objective of this study was to evaluate the spectrum of benign breast diseases in the hilly areas of Garhwal, Uttarakhand, India.

Material & Methods

This present study was conducted in the department of Surgery, Veer Chandra Singh Garhwali Government Institute of Medical Sciences and Research (VCSGGIMS&R), Srinagar, Garhwal, Uttarakhand, India during a period from January 2017 to January 2022. All the subjects signed an informed consent approved by the institutional ethical committee, VCSGGIMS&R, Uttarakhand. A total of 500 cases of benign breast disorders irrespective of age who visited the outdoor or were admitted in the surgical wards of VCSGGIMS&R were included in the study. The patients had undergone complete clinical examination of the breast along with ultrasonography/ X-Ray mammography and FNAC (when required).

Statistical Analysis

Data was analysed by using simple statistical methods with the help of MS-Office software. All the data was tabulated and percentages were calculated.

Observations & Discussions

Table 1: Percentage of various types of benign breast diseases

Type	No. of cases	%age
Fibroadenoma	256	51.2
Abscess	58	11.6
Mastalgia	53	10.6
Fibrocystic disease	41	8.2
Duct ectasia	33	6.6
Duct papilloma	19	3.8
Cellulitis	16	3.2
Antibioma	9	1.8
Phylloides tumor	7	1.4
Galactocele	5	1
Accessory breast	3	0.6
Total	500	100

According to the study, fibroadenoma was found to be the most common benign breast disease with 51.2% incidence, followed by abscess 11.6% and mastalgia 10.4%.

These cases have been reclassified according to ANDI (Aberration of Normal Development and Involution, 1987).

In this study, the youngest patient was 14 years old and the oldest was 70 years old. Majority of the patients were between 25 to 40 years age group.

Table. 2: Age-wise distribution of 500 cases of benign breast diseases

Age(years)	No of cases
<25	113(22.6%)
25-40	257(51.4%)
>40	130(26%)
Total	500(100%)

Out of 256 cases of fibroadenomas, 129 cases were of 25-40 years age group, 85 cases were below 25 years of age and 42 cases were above 40 years of age. All the age groups were almost uniformly involved in breast abscesses. In mastalgia, 29 out of 53 cases were of the 25-40 years of age group.

Table 3: Distribution of various benign diseases according to age group.

	Age group			Total
	<25	25-40	>40	
Fibroadenoma	85(33.20%)	129(50.4%)	42(16.41%)	256(51.2%)
Abscess	18(31.03%)	20(34.49%)	20(34.49%)	58((11.6%)
Mastalgia	6(11.32%)	29(54.72%)	18(34%)	53(10.6%)
Fibrocystic disease	2(4.87%)	24(58.54%)	15(36.58%)	41(8.2%)
Duct ectasia	2(6.06%)	21(63.64%)	10(30.30%)	33(6.6%)
Duct papilloma	0	10(52.63%)	9(47.37%)	19(3.8%)
Cellulitis	0	12(75%)	4(25%)	16(3.2%)
Antibioma	0	5(55.55%)	4(44.44%)	9(1.8%)
Phylloides tumor	0	2(28.57%)	5(71.43%)	7(1.4%)
Galactocele	0	5(100%)	0	5(1%)
Accessory breast	0	0	3(100%)	3(0.6%)
Total	113(22.6%)	257(51.4%)	130(26%)	500(100%)

Out of 500 cases, most of the benign breast disease cases 257(51.4%) were in the age group of 25-40 years, 130(26%) cases were found in age group of >40 years and 113(22.6%) cases were found in the age group of <25 years respectively.

Duration of disease

The duration of benign breast diseases in most of the cases 257(45.4%) had been 1-6 months.

Table 4: Distribution of cases according to duration of disease

Duration (months)	No. of cases
<1	124(2.4%)
1-6	227(45.4%)
7-12	86(17.2%)
13-24	56(11.2%)
25-60	7(1.4%)
Total	500(100%)

Most of the fibroadenoma cases had duration of symptoms less than 6 months.

Clinical features

The main clinical presentation of the benign breast diseases was a lump. Lump was found in 79% of the cases and pain in 52% of the cases including 54 cases of abscess presenting with both lump and pain. Nipple discharge was present in a total of 54 cases including 34 cases of duct ectasia, 19 cases of duct papilloma and 4 case of galactocele respectively.

Site

In most of the cases of benign breast diseases upper and outer quadrant of the breast was involved with 35% of symptoms found in this area. Out of the total 256 cases of fibroadenomas, in 132 cases, the lump was found in the upper and outer quadrant.

Side

Right breast was involved in 46% of the cases, left breast in 39.2% of the cases and bilateral breasts in the remaining 14.8% of the cases respectively.

Table.5. Distribution of benign breast diseases according to side involved

	Side involved			Total
	Bilateral	Left	Right	
Fibroadenoma	5	109	142	256
Abscess	0	15	43	58
Mastalgia	51	0	2	53
Fibrocystic disease	6	28	7	41
Duct ectasia	9	20	4	33
Duct papilloma	0	3	16	19
Cellulitis	0	5	11	16
Antibioma	0	9	0	9
Phylloides tumor	0	7	0	7
Galactocele	0	0	5	5
Accessory breast	3	0	0	3
Total	74(14.8%)	196(39.2%)	230(46%)	500(100%)

Fibroadenoma

It is the most common cause of breast lump in the age group of 15-25 years and is a benign neoplasm. It is commonly known as a breast mouse because of its free mobility. In the ANDI classification its classified as aberration in normal development of a single lobule. Pathologically it has two components, fibrous component (neoplastic) and adenomatous component (non-neoplastic) .It increases in size during pregnancy and tends to regress as the age of the patient increases. Grossly, the usual fibroadenoma is a sharply demarcated, capsulated and firm mass. The cut surface is solid, grayish white, and bulging, with a whorl like pattern and slit-like spaces. Necrosis is absent [1]. Microscopically, it consists of a proliferation of epithelial and mesenchymal elements. The stroma proliferates around tubular glands (pericanalicular growth) or compressed cleft-like ducts (intracanalicular growth). Often both the types of growth are seen in the same lesion. If the tumor assumes massive proportions (>5 cm), more commonly observed in female adolescents, it is called as a Giant fibroadenoma [1].

In this present study, fibroadenoma was the most common benign tumor of the breast. Out of a total of 500 cases, 256 cases were of fibroadenomas. The youngest patient was 14 year old and the oldest one was 60 years. Majority of the patients were in the second and third decade of life. Right breast was involved in 142 cases and left breast was involved in 109 cases with bilateral breast involvement in 5 cases respectively. Upper and outer quadrant was involved in most of the cases. The average size of

fibroadenoma was 2 cm, with a minimum of 0.5 cm and maximum of 10 cm as shown in the table.

Fibroadenoma of the breast is a frequently occuring tumor. In the present study , the incidence of fibroadenomas was 51.2 % similar to the study done by Khanna et al (60%) [9]. Majority of the cases in the present study belonged to the 3rd decade of life similar to the studies by Samir et al, Olu-eddo et al and others [10,11].

Table 6: Distribution of cases of fibroadenoma according to size of lump

Size of fibroadenoma (cms)	No. of cases
<1	11
1-3	192
3-5	50
>5	03
Total	256

Clinical features

In all the cases of fibroadenomas, the presenting symptom was a discrete lump. It was freely mobile, not adherent to the skin or underlying structures. No case was reported with nipple discharge and axillary lymphadenopathy.

Siddiqui et al [14] showed decreased incidence of fibroadenomas (17%). His study was based on histopathological analysis and he studied 3279 cases at a tertiary care hospital. Similar results were obtained by Chiedoziet al in 2003 (27.5%), Rajendra K. et al [12] in 2010 (21.8%) and Nasser Ahmad et al [13] in 2012 (32.6%). In all the above-mentioned series, fibroadenomas were found to be the most common benign breast diseases. Thus, our study is in concordance with the studies available in the literature however causes of this increased frequency are not clear.

Mastalgia

It is the common condition found in the reproductive age group and most of the times it occurs in pre-menstrual phase in both the breasts. It may be unilateral or bilateral. It constitutes 10.6% of the total benign breast diseases. This condition is common in young age group, the youngest patient being 21 years old and the oldest one being 50 years old respectively. Out of the total 53 cases of mastalgia, bilaterality was seen in 51 cases and in 2 cases the disease was unilateral and on right side. The main clinical feature was pain and tenderness in the breast. No mass was palpable, only diffuse nodularity was present. No nipple discharge was present.

Benign duct papilloma

Only 19 (3.8%) cases of intraductal papilloma were detected, youngest patient was 26 years old and the oldest one was 70 years old respectively. Right side was involved in 16 cases whereas left side was involved in 3 cases. Nipple discharge was the predominant presenting feature in all the cases.

Breast abscess

58 cases of breast abscess were reported. All the age groups were found to be equally involved. Right breast was involved in 43 cases and left breast in 15 cases. All the cases presented with the complaints of a lump and pain in the breast. The lump size ranged from 3cm to 6cm. It was a tender lump and soft to firm in consistency. Overlying skin was shiny, red and oedematous. There was no axillary lymphadenopathy. In all the cases, spiky fever was present.

Fibrocystic disease of the breast

Naseer Ahmed et al [13] from Jamshoro (10.3%), Siddiqui et al from Pakistan (13.9%) and Parajulis et al [15] from Nepal (18.4%) showed a higher incidence of fibrocystic diseases of the breast as

compared to that in our study. The real incidence of fibrocystic disease of breast is difficult to estimate and diagnosis depends on the individual, clinical and pathological acumen.

In the present study, a total of 41 cases of fibrocystic disease of breast were reported. The youngest patient was 28 years old and the oldest patient was 50 years old. The most commonly involved age group was found to be 25-40 years.

Side

Left breast was involved in 28 cases, right breast in 7 cases and bilateral involvement was seen in 6 cases respectively.

Site

Whole of the breast was involved in most of the cases. In one of the case, upper and outer quadrant was involved whereas in one case, lower and outer quadrant was involved.

Clinical features

Patients presented with pain and lump in the breast. Lump was ill defined, overlying skin was free with no deeper fixation, consistency was soft to firm and size was variable.

Galactocele

We found only 5 cases of galactocele in our study. It was found to be in the 25-40 years age group and in lactating females. There was a solitary lump in the right breast in the central zone in all cases. Nipple discharge was present which was thick and creamy.

Phylloides tumor

Phyllodes tumour can have a spectrum of changes from benign (<4mitosis/10 hpf) to borderline (4 -10 mitosis/10 hpf) to frankly malignant (>10mitosis/10 hpf). It is important to recognize stromal infiltration margins, cytologic atypia and increased mitotic activity to predict the recurrent and malignant behaviour of this pathology which is often treated by total mastectomy [16, 17].

In this present study, only 7 cases of phylloides tumor were reported. 2 cases were found to be in the 25-40 years age group whereas 5 cases were above 40 years age group. Left breast was involved in all the cases in our study. Patient presented with a painless lump in the breast. The lump was mobile, bosselated, not fixed to the skin and underlying structures, the overlying skin was shiny and had venous dilatations. Nipple and areola was normal and there was no axillary lymphadenopathy.

Antibioma

A total of 9 cases of antibiomas were reported in our study. 5 patients were of 25-40 years age group whereas 4 were of more than 40 years of age. Left breast was involved in all the cases. Patient presented with a lump in the breast along with pain.

Duration in all the cases was more than 12 months. Patients presented with the history of painful tender swelling at the start of symptoms for which antibiotics were taken without any drainage procedure. Axillary lymph nodes were not enlarged in any of the cases. Diagnosis was confirmed by X-Ray mammography/ultrasound and FNAC.

Cellulitis

Cellulitis was observed in a total of 16 cases in our study with the chief presentation of diffuse pain over the breast without a palpable lump. On examination, the overlying skin was shiny, red, oedematous and the breast was tender. History of localized trauma was there in one of the cases.

Accessory breast

Only 3 cases of accessory breast were reported in our study. All the patients were of more than 40 years age group. Patient presented with a painless lump in both right and left axillae. FNAC of lumps revealed normal breast tissue.

Granulomatous mastitis was first enunciated as a distinct histopathological entity by Kessler and Wolloch et al in 1972 [18]. They reported breast masses in five women with a florid, sometimes necrotising, granulomatous lobulitis that was not associated with trauma, specific infection, or exogenous material. Since then, Fletcher et al has furnished the medical community with the largest body of published work on the subject followed by a smaller series of individual cases reported by Koelmeyer and MacCormick et al, [19] Cohen et al [20] and Brown and Tang et al. [21] The present study had 5 cases of granulomatous mastitis with an incidence of 3.3% which is comparable to the study by Siddiqi et al. [22] The mean age of patients was 34.4 years and a majority of them fell in the 4th decade of life, which was similar to the finding of Boufettal et al in 2012 [23,24].

Conclusions

This present study concluded that there is a preponderance of benign breast diseases in the middle aged women and fibroadenoma is the most common type of benign breast disease found in the women of the hilly areas of Garhwal, Uttarakhand.

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