

# Study of Breast Lumps in Females up to 40 Years of Age at Government Medical College, Nagpur

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## ABSTRACT

### BACKGROUND

Breast diseases have been known to mankind since ancient times. However, earlier it was a matter of taboo and embarrassment that meant detection and diagnosis were rare. But the involvement of more women and actively bringing out the disease into open is a recent phenomenon. Various types of lesions from inflammation to carcinoma can affect the breast. Lump in breast is the commonest complaint which the patient presents to the surgeon. Different aetiologies of breast lump need different lines of management. We wanted to study the clinical profile of patients up to 40 years presenting with a discrete breast lump, diagnose different pathological conditions causing them and also study different investigations used for diagnosis.

### METHODS

The study was done from October 2013 to December 2015 on a total of 305 consenting patients attending surgery outpatient department and those patients admitted in wards at government medical college, Nagpur were up to 40 years of age with a complaint of a breast lump. Clinical profiles of patients up to 40 years of age presenting with breast lumps were studied along with different investigations for diagnosis and different treatment modalities.

### RESULTS

The highest incidence noted was fibroadenoma (178) in 58.36 % of cases and the lowest incidence was of duct ectasia (3) in 0.98 % of cases. The incidence of fibroadenoma in married women was 46.06 % and in unmarried was 53.93 %. The lowest number of breast lump cases was found in the 10-20 yrs (59) age group and a maximum number of breast lump cases was found in the 21-30 yrs age group (140). Total 74 patients diagnosed with malignancy were the most commonly affected patients in the age group of 31 – 40 yrs. Out of 305 patients with a history of self detected lump 87 i.e. 28.52 % had mastalgia and 16 patients presented with nipple discharge. Ultrasound showed only their benign breast disease characteristic and the definitive diagnosis was not possible in them.

### CONCLUSIONS

Rate of benign pathologies is comparatively much higher than malignant ones in young females; however, increasing trends of malignancy in this age group cannot be neglected. With the global trend towards an increase in the incidence of breast malignancy, for every patient with a breast lump, cytological / tissue diagnosis by an expert pathologist must be established, before a further line of treatment can be planned.

### KEY WORDS

Fibroadenoma, Malignancy (CA Breast), OPD (Outpatient Department), Trucut Biopsy.

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## BACKGROUND

Lump in the breast is the commonest complaint of patients with breast diseases.<sup>1</sup> Overall benign pathologies are much more common than malignancy. Fibroadenoma of the breast is a common cause of benign breast lump in premenopausal women,<sup>2</sup> accounting to breast biopsies performed today. Till now it was thought that breast lumps in females presenting at a younger age are mostly benign but current statistics suggest that pattern is changing. The incidence of breast cancer in women up to 40 years is low but more aggressive. There are certain benign breast conditions like chronic granulomatous mastitis and traumatic fat necrosis which closely mimic carcinoma and need differentiation.<sup>3</sup>

Early presentation and prompt diagnosis are essential to relieve the anxiety of non-neoplastic conditions and in case of carcinoma, it can save the patient from metastasis. Triple assessment is an accepted investigation that is carried out on outpatient department (OPD) basis.

### Objectives

- To study the clinical profile of patients up to 40 years presenting with a discrete breast lump.
- To diagnose different pathological conditions causing discrete breast lumps.
- To study different investigations used for diagnosis.

## METHODS

This cross-sectional, observational study was done with the permission of ethical committee IEC 203 from October 2013 to December 2015 on all consenting patients attending surgery outpatient department (OPD) and those admitted in wards at Government medical college, Nagpur up to 40 years of age with a complaint of the breast lump. On presentation, a detailed history was taken & on examination, a definite lump was found and fine-needle aspiration cytology was done. If a fine needle aspiration cytology report confirmed the diagnosis further treatment was given. In addition, Trucut biopsy was done in every patient suspected to have malignancy, phyllodes tumour on clinical examination & in the patients whom fine needle aspiration turned inconclusive.

### Inclusion Criteria

All consenting female patients up to 40 years of age with discrete breast lumps.

### Exclusion Criteria

1. Non consenting female patients.
2. Females above 40 years of age.
3. Patients with ill-defined/ nodular lump.
4. Patients clinically diagnosed with acute inflammatory conditions of the breast.

### Statistical Analysis

It was done using the chi-square test. A P-value of < 0.05 was considered statistically significant.

## RESULTS

The highest incidence noted was fibroadenoma (178) i.e. 58.36 % of cases and the lowest incidence of duct ectasia (3) in 0.98 % cases. (Table 1).

The lowest number of cases was found in 10-20 years age group (59) & a maximum number of cases in 21-30 years age group (140) followed by 31 - 40 year age group (Table 2). Fibroadenoma showed maximum incidence in 21-30 years. Malignancy occurred most frequently in the 31 - 40 year age group (Table 2).

The mean age of patients and mean duration of presentation after the onset of 1<sup>st</sup> symptom was 27 years of age and 3 months respectively. The age of cases for fibroadenoma ranged from 14 to 39 years and those for malignancy ranged from 23 to 40 years (Table 3).

Out of 305 patients with a history of self detected lump, 87 i.e. 28.52 % had mastalgia and 16 patients presented with nipple discharge (Table 4).

80.33 % of patients with fibroadenoma did not have pain. 17 patients had cyclical and 18 patients had non-cyclical pain. 18 patients with menstrual irregularities were found (10.42 %). The incidence of fibroadenoma in married women was 46.06 % and in unmarried women was 53.93 %. (Table 5)

The unilateral fibroadenoma was present in 164 patients whereas 09 had bilateral disease. The right breast was affected in 83 patients (46.62 %) and the left breast in 86 patients (48.31 %). Total no. of cases of multiple fibroadenomas were 36 (20.22 %) (Table 6).

Most fibroadenomas were 2-3 cm in diameter that is approximately 70 % and those more than 3 cm in size constituted approximately 15 % of total fibroadenoma cases. Those patients with age < 20 years and with lump size < 3 cm were counselled and priority was given for conservative management.

Out of 178 patients, 151 underwent excision, 27 patients were counselled and conservative management was considered in them. (Table 6)

Fibroadenoma most commonly involved the upper outer quadrant of the breast whereas the central quadrant and axilla were less involved. (Table 6)

Menstrual irregularities were present in 20.27 % of patients with malignancies.

Sr. No.	Disease	No. of Patients	Percentage
1	Fibroadenoma	178	58.36
2	Malignancy	74	24.26
3	Antibioma	16	05.24
4	Phyllodes tumor	15	04.91
5	Galactocele	09	02.95
6	Chronic granulomatous mastitis	10	03.27
7	Duct Ectasia	03	0.98
<b>Total</b>		<b>305</b>	<b>100</b>

**Table 1. Different Pathologies Causing Discrete Breast Lumps**

Sr. No.	Diseases	10-20 Years	21-30 Years	31-40 Years
1	Fibroadenoma	54	103	21
2	Malignancy	0	10	64
3	Antibioma	1	12	3
4	Phyllodes tumour	4	5	6
5	Galactocele	0	7	2
6	Chronic granulomatous mastitis	0	7	3
7	Duct papilloma	0	1	2
<b>Total</b>		<b>59</b>	<b>140</b>	<b>101</b>

**Table 2. Age Distribution of Different Discrete Breast Lumps**

Sr.	Diseases	Minimum Age (Yrs.)	Maximum Age (Yrs.)	Mean Age (Yrs.)	Average Duration Before Presentation (Months)
1	Fibroadenoma	14	39	24	2
2	Malignancy	23	40	34	5
3	Antibioma	20	34	27	3
4	Phyllodes tumor	16	40	29	5
5	Galactocele	26	32	28	4
6	Chronic Granulomatous mastitis	22	40	30	3
7	Duct papilloma	27	36	32	3
<b>Mean</b>		<b>21</b>	<b>37</b>	<b>27</b>	<b>3</b>

**Table 3. Mean Age of Patients and Mean Duration of Presentation to Consult after the Onset of 1<sup>st</sup> Symptom**

Complaints	No. of Patients	Percentage
Self detected lump	305	100%
Pain	87	28.52%
Nipple discharge	16	5.33%

**Table 4. Presenting Complaints of Women of 40 Years and Younger with Breast Lump**

Parameter		Fibroadenoma	Percentage
Pain	No pain	143	80.33%
	Cyclical pain	17	09.55%
	Non-cyclical pain	18	10.11%
Menstrual irregularities	Present	18	10.42%
	Absent	160	89.88%
Obstetric History	Nullipara	95	53.37%
	Para 1	32	17.97%
	Para 2	24	13.48%
	Para 3 & above	27	15.16%
Marital status	Married	82	46.06%
	Unmarried	96	53.93%
Family history	Positive	05	02.80%
	negative	173	97.19%

**Table 5. Symptomatology in Patients with Fibroadenoma**

Parameter		Number of Patients	Percentage
Laterality	Right	83	46.62%
	Left	86	48.31%
	Bilateral	09	05.05%
Number	Single	142	79.77%
	2 in one breast	28	15.73%
	> in one breast	08	04.49%
Size	Maximum Diameter (cm)		
	Up to 1 cm	10	5.87%
	1-2 cm	16	9.24%
	2-3 cm	126	69.94%
	3-5 cm	09	5.21%
	5 & more	17	9.82%
Location	Upper outer quadrant		
	Lower outer quadrant	132	74.15%
	Lower inner quadrant	10	12.82%
	Upper inner quadrant	17	09.55%
	Central	9	05.05%
	Upper inner quadrant	6	03.37%
	Central Axillary tail	4	02.24%

**Table 6. Clinical Examination of Fibroadenoma**

Parameters Related to Ca Breast		Number of Patients	Percentage
Age	10-20	0	0
	21-30	21	28.37%
	31-40	53	71.62%
Menstrual irregularities	Present	15	20.27%
	Absent	59	79.72%
Obstetric history	Nullipara	08	10.81%
	Para 1	18	24.32%
	Para 2	33	44.59%
	Para 3 & above	15	20.27%
Stage wise cases	I	3	4.05%
	II A	10	13.51%
	II B	21	28.37%
	III A	17	22.97%
	III B	18	24.32%
Clinical staging	IV	05	8.75%
	Operable CA breast	34	45.94%
	Large operable	17	22.97%
	Locally advanced	18	24.32%
Metastasis	5	6.75%	

**Table 7. Discrete Breast Lump and Malignancy**

Pathology	Number of Patients Detected on USG Consistent with Final Diagnosis	Total Patients	Diagnostic Accuracy (%)
Fibroadenoma	158	178	88.76
Malignancy	64	74	86.48
Antibioma	NCWFD		
Phyllodes tumour	NCWFD		
Galactocele	09	9	100
Chronic Granulomatous mastitis	NCWFD		
Duct ectasia	1	3	33.33

**Table 8. Diagnostic Accuracy of Ultrasound in the Detection of Breast Lumps**

## DISCUSSION

A total of 305 consenting patients presenting with discrete breast lumps were studied.

The different conditions causing a lump in the breast in this age group in order of frequency were as follows:

1. Commonest was fibroadenoma 178 cases (58.36%)
2. 2<sup>nd</sup> was malignancy 74 cases (24.26%)
3. 3<sup>rd</sup> was antibioma 16 cases
4. Phyllodes tumor 15 cases.
5. Other conditions causing the same were chronic granulomatous mastitis (10), galactocoele (9), duct ectasia (3).

Tibor de Cholnoky (1943)<sup>4</sup> stated that cancer of the breast in patients under 30 years of age constituted 2 % of all the breast cancers. In the present study, incidence of cancer of the breast in patients under 30 years was 10 out of 74 i.e. 13.51 %.

Stone AM, Shankar RI & McCarthy K (1977)<sup>5</sup> studied cases of breast lumps in adolescence & found fibroadenoma to be commonest i.e. 70 %. In our study, total no of cases of fibroadenoma was found to be 178 out of 305 i.e. 58.36 %.

Glacomelli (1935)<sup>6</sup> reported the mean age for fibroadenoma as 21 years whereas Haagensen CD<sup>7</sup> (1971) reported it as 25 years. Gheschikter<sup>8</sup> (1945) found the highest no. of patients with fibroadenoma in the age group of 21-25 years, whereas Oliver Major<sup>9</sup> (1945) reported the highest no. in the age group of 20-24 years. Goldberg VE<sup>10</sup>

(1968) stated that fibroadenoma is the commonest condition causing breast lump between 15-35 years. Abhishek Vijaykumar et al.<sup>11</sup> (2012) found the incidence of fibroadenoma as the commonest in the age group of 16-20 years i.e. 66.1 % with the mean age being 27 years and 43.8 % incidence in the upper outer quadrant. In the present series, the age group having a maximum number of patients was 21-30 years and the mean age for fibroadenoma presentation was 24 years and also it occurred most frequently in the outer upper quadrant 127 (73.41 %).

D. N. Ader et al. (1999)<sup>12</sup> found the incidence of mastalgia to be 16 %. In our study, 87 patients (29 %) were found to have mastalgia.

William Donegan<sup>13</sup> stated incidence of 17.5 % cases of multiple fibroadenomas of which 88 % were bilateral & 8.2 % were unilateral. In the present study, the incidence of multiple fibroadenomas was 20.78 % of which 9 were bilateral.

Abhishek Vijaykumar et al. (2012)<sup>11</sup> found a ratio of incidence of fibroadenoma in unmarried to married patients as 38.1% to 61.9 %. In our study, this ratio was 53.93 % to 47.07 %.

Wilson Onuigbo (2000)<sup>14</sup> found the percentage of fibroadenoma in right breast as 15 %, in left breast as 48.7 % & both 10.9 cases and 3 cm size fibroadenoma is most common. In our study, out of 178 fibroadenomas, 83 cases were on the right side, 86 on the left side & 9 bilateral and commonest size 2-3 cm i.e. 126 (70.78 %).

Carey K Anders et al. (2009)<sup>15</sup> mentions incidence of breast cancer in females up to 40 years as 7 %. Marcus et al.<sup>16</sup> found an increased incidence of ductal cancer & medullary cancer. Sariego et al.<sup>17</sup> (1995) found that 93 % of patients had infiltrate ductal carcinoma below 35 years. In our study, 75 had malignancy of which 72 were having infiltrating duct carcinoma, 1 was having lobular carcinoma, 1 with comedocarcinoma. Razif SM, Sulaiman S (2011)<sup>18</sup> shared their view with Anderson & Badzioch (1985)<sup>19</sup> mentioning a strong relationship between family history & early-onset breast cancer. In our study, 5 cases had a family history, and the rest patients were not having a family history which could possibly be due to the increasing prevalence of sporadic breast cancer. Kenfield, Haagensen & Cooley<sup>20</sup> found the average size of tumour size as 3.9 cm and lymph nodes were palpable in 8 patients. In our study, 51 patients had clinically positive lymph nodes.

Ashish K Shukla et al. (2015)<sup>21</sup> found that the overall sensitivity of ultrasound was 81.67 %, fibroadenoma had the highest diagnostic accuracy of 85.71 % followed by carcinoma (81.25 %). Sareen M et al. (2014)<sup>22</sup> found the overall sensitivity for ultrasound as 84 %, accuracy in detection of carcinoma was 84.61 %. In our study, diagnostic accuracy was 93.825 %, for carcinoma it was 86.48 % & that for galactocoele it was 100 % whereas for duct ectasia it was 33.33 %.

### Summary

305 cases of discrete breast lumps occurring in women up to 40 years were studied during the study period. The commonest cause of lump was fibroadenoma comprising 58.36 % followed by malignancy (24.26 %), antiobioma (5.24

%), phyllodes tumour (4.91 %), chronic granulomatous mastitis (3.27 %) and duct ectasia (0.98 %).

Fibroadenoma was most common in the age group 21-30 years (57.86 %) with a mean age of 24 years. The commonest size of fibroadenoma found was 2-3 cm (67.97 %) and the upper outer was the commonest quadrant (74.15 %). Out of 178 cases, 17 were of size more than 5 cm, 16 cases with size 1-2 cm, 10 cases of size up to 1 cm, rest 9 were of size 3-5 cm. 10.40 % of cases had menstrual irregularities. 83 fibroadenoma cases were involving the right side (46.20 %), 86 cases (48.31 %) on the left side and 9 (5.05 %) were bilateral.

Malignancy was most common in the age group 31-40 years with the mean age being 34 years, comprising 71.62 % of total patients. 97.29 % of patients were of ductal carcinoma, 1 infiltrating lobular carcinoma, another was comedocarcinoma. 8 cases (10.81) were nulliparous with 3 presenting with advanced breast carcinoma. 5 cases (2.89 %) had a family history of breast cancer. The average duration of the lump for presentation to a clinician in case of malignancy was 5 months. The increasing duration of the lump was associated with advanced lesions. There were 34 cases of early invasive breast cancer i.e., stage I, IIA, IIB, contributing 45.94 % of patients. The highest number was found in stage IIB 21(28.37 %) followed by stage IIIB 18 ( 24.32 %), stage IIIA 17, stage IIA 10, stage IV 5 and stage I 3 cases. 5 patients had distant metastasis and were given palliative therapy. Thus 6.75 % were inoperable. 51(68.91 %) cases had clinically positive lymph nodes.

Ultrasound showed a diagnostic accuracy of 88.76 %, 86.48 %, 100 % & 33 % for fibroadenoma, malignancy, galactocoele and duct ectasia respectively.

### CONCLUSIONS

Breast lump occurring in women up to 40 years of age is a common presentation. The evaluation in these patients becomes difficult due to continuous dynamic changes occurring in the breast. This difficulty further increase, as the incidence of benign pathologies, is overwhelmingly high and that of malignancy is low. Further malignancy occurring in this age group is supposed to be highly aggressive. Thus, study shows that rates of benign pathologies are comparatively much higher than malignancy in young females. However, increasing trends of malignancy in this age group cannot be neglected. So high index of suspicion should be kept for malignancy, even when the incidence of same in this age is low as compared to the older age group (> 40 years). With the global trend towards an increase in the incidence of breast malignancy, for every patient with a breast lump, cytological / tissue diagnosis by an expert pathologist must be established, before a further line of treatment can be planned.

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