Original Research Article

A clinico pathological study of fibroadenoma of the breast

Hebsur N.I.[1], Mulkipatil S.Y.[2], Narayanaswamy R.R.[3]

[1]Dr. Narayanchandra. I. Hebsur, Associate Professor, [2]Dr. Shivanagouda.Y. Mulkipatil, Assistant Professor, [3]Dr. Narayanaswamy R.R, Resident, all authors are affiliated with Department of Surgery, Karnataka Institute of Medical Sciences, Vidyanagar, Hubballi, Karnataka- 580022, India.

Corresponding Author: Dr S. Y. Mulkipatil, Assistant Professor, Department of Surgery, Karnataka Institute of Medical Sciences. Residential Address: Shivashri, No-17, Manoj Heights, Near Sukruti Public School, Vidyanagar, Hubli, Karnataka, India. Email; drsympatil@yahoo.com

Abstract

Introduction: Fibroadenoma of the breast is a common cause of a benign breast lump in premenopausal women. Though considered as a risk factor for developmentof breast cancer, its reporting has been overshadowed by that of breast cancer. **Objective:** Toanalyze the occurrence of fibroadenoma among different age groups, rural or urban background and among married and unmarried patients and to correlate clinical diagnosis with the histopathological diagnosis. **Materials and methods:** This study includes total of 40 cases during the period from November 2009 to October 2011 using the records maintained at KIMS (Karnataka Instituteof Medical Sciences) Hospital, Hubli. **Results:** From this study it is observed that the mean age of presentation was 25.55 years (range 15-48years). Itpresented as painless lump (75%), 80% of patients had the symptoms < 12 months (range 1 month -11 years). 24 cases (60%) had their fibroadenoma lump in their right. 32% of the patients had their fibroadenoma in upper lateral quadrant, slightly more compared to upper medial quadrant (30%). 28 patients (70%) had one lump, 45% of cases measuring less than 3 cm in size (range 1-11cms), 20% of cases had giant fibroadenoma. Tissue diagnosis was performed in 37 patients. 4 recurrent fibroadenoma cases operated in this study among which recurrence of 1 case occurred during the study period. **Conclusion:** Fibroadenoma is a source of anxiety in teenage group and it should be dealt by surgical excision.

Key wards: Benign; Breast Disease, Fibroadenoma.

Introduction

Benign breast diseases are a common problem presenting in a day to day surgical practice. Fibroadenoma of the breast is a common cause of a benign breast lump in premenopausal women. These lumps are painless, usually solitary, but rarely may be multiple and bilateral, varies in size and grows slowly.

Although it is tempting to dismiss fibroadenomata as relatively unimportant lesions because they rarely cause serious clinical problems, they cannot be regarded too lightly. They are extremely common, and in an age of increasing breast awareness, since they invariably present as a palpable mass, may cause considerable anxiety in patients until the correct diagnosis of benignity is established. They may pose diagnostic problems in assessment of fine needle aspiration cytology (FNAC) and those lesions which have not presented clinically may be detected in mammographic screening, where carcinoma is an important differential diagnosis[1].

There is a wide spectrum of benign breast disorders in India but its reporting has been overshadowed by that of breast cancer. Benign breast disorders have an incidence of 1.5/1000 of total hospital admissions, 6.4/1000 of surgical admissions and 8.1 /1000 of adult female admissions. A recent pathological review shows fibro-adenoma as the most common lesion followed by cysto-sarcoma phylloides and fibrocystic diseases of breast[2].

Rangabashyam et al in clinical study also showed fibro-adenoma as the most common breast lesion but it was followed by inflammatory lesions and fibro-adenosis[3]. Fibroadenomas present as firm, nontender, clearly demarcated masses usually 2 to 3 cm in size, though they may range from < 1 cm to greater than 10. They are most commonly found in the upper-outer quadrant of

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the breast. These benign masses may enlarge slowly without associated pain or nipple and skin changes, but fluctuations in size may occur with the menstrual cycle; when symptoms are present, they last an average of 5 months.Patients may also have associated breast asymmetry. Multiple fibroadenomas occur in 10 to 25% of cases[4]. Fibroadenoma is a biphasic tumor, i.e. it is composed of an epithelial and a stromal component. The epithelial component of fibroadenoma can display aberrations similar to those of the epithelial component of the normal breast[5].

Fibroadenoma can be diagnosed through a combination of clinical examinations, imaging and non surgical tissue biopsy (the triple test). A clinical diagnosis of fibroadenoma alone is unreliable and does not exclude malignancy even in younger women. Fine needle aspiration is the most accurate means of establishing the diagnosis. Symptomatic fibroadenomas were treated by surgical excision and this option should always be offered. There is increasing evidence that conservative approach is safe and acceptable, provided the result of an adequate triple test is both negative for cancer and consistent with fibroadenoma. In older age group particular attention must be given to its associated carcinoma. In this context, the aim of the present study is to analyze the occurrence of fibroadenoma among different age groups, rural or urban background and among married and unmarried patients and to correlate clinical diagnosis with the histopathological diagnosis and to ascertain the management of fibroadenoma.

Materials and Methods

The study is a cross-sectional study conducted byDepartment of Surgery, Karnataka Institute of Medical Sciences, Hubballi. This study includescases of fibroadenoma admitted during the period from November 2009 to Oct 2011 consisting of five cases in 2009, 13 cases in 2010 and 22 cases in 2011 obtained using the records maintained at KIMS Hospital. A total of 40 cases were obtained, among these 37 patient sunderwent surgery and 3 patients received conservative management.

Only those cases whose diagnosis of fibroadenoma had been confirmed from biopsy were included. Those patients in whom FNAC shows features suggestive of fibroadenoma but HPR report inconclusive of fibroadenoma are not taken as a part of the study group.

The profile of patients were recorded in the proforma which include age, marital status, rural or urban background duration of symptoms, premenstrual and post menstrual symptoms, number of lumps, size and location of lumps. Enquiry was also made regarding use of contraceptives and h/o previous surgery for fibroadenoma. In addition to this, the routine investigation including FNAC was done on all cases.

The data was entered into Microsoft excel and analyzed using SPSS ver 20 to compute the frequency and percentages.

Results

In the present study, 40 cases were examined and all the cases were diagnosed as fibroadenoma, of which 8 were Giant fibroadenomas.72.5% had fibroadenoma in the age group of 16-30 years and only 22.5% had between 31-45 years of

Table- 1: Demographic characteristics of confirmed cases of fibroadenoma.

Patient characteristic	Diagnosis	Number of cases	Percentage
Age group (years)	0-15	1	2.5
	16-30	29	72.5
	31-45	9	22.5
	46-60	1	2.5
Background	Rural	24	60.00
	Urban	16	40.00
Marital status	Married	30	75. 00
	Unmarried	10	25.00
	Unmarried	10	25
Parity	(a)Nullipara	11	27.5
	(b)Para-1	4	10
	(c)Para-2	8	20
	(d)Para-3	5	12.5
	(e)Para-4	2	5

Table-2: Clinicalpresentation of subjects.

Patient characteristic	Diagnosis	Number of cases	Percentage
Frequency of symptoms	Painless lump	27	67.5
	Painful lump	13	32.5
	Nipple discharge	1	2.5
	Premenstrual mastalgia	3	7.5
Duration of symptoms, among patients (in months)	0-12	32	80.00
	13-24	2	5.00
	25-36	1	2.5
	37-48	0	0.00
	49-60	1	2.5
	61-72	1	2.5
	>72	3	7.5

The main complaint of the patients was lump in the breast. The duration varied from 1 month to many years. Out of 40 cases, 13 cases complained pain in the breast. More than three-fourth of them had symptoms between one month to one year and only 2.5% of the patients had symptoms between 5-6 years. Out of 40 patients, 24 cases were distributed in the right and 11 in left breast and 5 patients had bilateral lesion.

Table-3: Examination findings of confirmed cases of fibroadenoma.

Patient characteristic	Diagnosis	Number of cases	Percentage
Number of lumps per case	One	28	70.00
	Two	9	22.50
	More than two	3	7.50
Location of lumps	Right Breast	24	60.00
	Left Breast	11	27.50
	Bilateral	5	12.50
Quadrant wise distributions	Upper Lateral	16	32.00
	Upper Medial	15	30.00
	Lower Lateral	10	20.00
	Lower Medial	3	6.00
	Central	3	6.00
	Multiple	3	6.00
Lumps Size in cm	Up to 3	18	45.00
	>3 up to 5	14	35.00
	>5 up to 10	7	17.5
	>10 up to 20	1	2.5%

Out of the 40 patients studied the main complaint among these is lump in the breast and 13 patients complained pain in the lump. But only 3 did complain of pain during premenstrual period but there was no increase or decrease in size during the menstrual cycle or period. The quadrant wise distribution of lumps showed that 32% of the patients had their lumps in their upper lateral quadrant of the breast a little more than upper medial quadrant (30%). 20% in lower lateral, 6% in lower medial quadrant and 6% had centrally. Out of 40 cases 28 patients (70%) had solitary lump in the breast, 9 patients (22.5 %) had 2 lumps and 3 patients (7.5%) had more than two lumps (multiple). 45% of the cases had lump size of <3cm, 35% between 3 to 5 cm, 17.5% between 5 to 10 cm and 1 patient (2.5%) between 10-20 cm.. The largest was measuring about 11x11cm and smallest being lxl cm.

Table-4: Clinicopathological diagnosis of confirmed cases of fibroadenoma.

Patient characteristic	Diagnosis	Number of cases	Percentage
Diagnosis	Fibroadenoma total cases	40	100.
	Giant Fibroadenoma	8	20
HPR features	Without complex features	31	83.7
	With foci of fibrocystic changes	4	10.8
	With foci of duct papilloma and fibrocystic changes	1	2.7
	With foci of squamous metaplasia	1	2.7

Out of 40 cases, FNAC was done for all patients and there were no false negatives. Excision was done in 92.5% of patients; quadrantectomy was done for one patient. This implies surgical excision was the preferred treatment and 3 patients were treated conservatively. Thirty-seven patients, who were treated surgically, wound healed well within seven days and 2 patients had delayed would healing due to wound infection and 5 patients did not came for follow up.

None of the cases was seen on oral contraceptive use and have not reported changes in size of lump during pre and post menstrual period.

Discussion

Fibroadenoma is present in younger age to older age and it is operated more often. 72.5% of the cases diagnosed were belong to 16-30 years and 22.5% were belong to 31-45 years possibly, the reason may be due to hormonal dependency, which is a possible contribution to lump formation and evolution. Added to this, Giant fibroadenomaiscommon during puberty. Similar findings were observed by Other authors [6-10].

The fibroadenoma is found to be more in rural background compared to urban background. This trend may be due to the fact that rural population is more in the catchment area besides exposure to mass media sources and awareness by field health workers.

This study indicates fibroadenoma was more among married women compared to unmarried women, possible reason may be due to early menarche and early marriage. Similar findings were observed byZakiaCoriaty Nelson. He also observed that there is decreasing risk of fibroadenoma with increasing number of live births[9]

It is interesting to note that the duration varies from few months to many years, may be due to slow growing tumor and painless condition of fibroadenoma. When proper care is not taken there could be a fear of malignancy[7].

In our study fibroadenoma is more common in right breast. This finding similar with some authors[6] and contradictory to G.C.Raju et al[7], N.J.Carty et al[10] besides, upper lateral quadrant (32%) involvement slightly more compared to upper medial quadrant (30%) which is in consistent to N.J.Carty et al[10]. Bilateral involvementfound in 5 cases, this finding is in line with similar studies [6-10].

None of the cases were reported regarding the change in size of the lump during the pre and post menstrual cycle and during pregnancy. Post menstrual changes may result in regression, calcification or both.None of patients in this study has family history of breast cancer and therefore no definite relationship has been made with regard to occurrence of fibroadenoma.

No significant trends in risks with ages at first live births or menarche, duration of breast feeding, number of children breastfed were observed. As none of the cases studied had the history abortions, miscarriage, or stillbirth and hence no association has been made in relation to fibroadenoma.

None of the patients in this study had past history of benign breast lesions and hence no association has been made in relation to fibroadenoma.

FNAC was used as an investigation tool for the management of fibroadenoma. This could be due to reliability, simple, easier and less time consuming. Hence, FNAC was used as one of the investigation to distinguish fibroadenoma from other breast diseases. Diagnosis was discussed with the patient and the choice of excision or follow up offered. In this study it is to be

noted that surgical excision was the preferred treatment, simple excision was done to the majority of cases and quadrantectomy for one recurrent giant fibroadenoma case was performedbesides 3 patients whose size of the lump was <3 cm agreed for conservative management. Further, there is increasing evidence that conservative approach is safe and acceptable, provided the result of an adequate triple test is both negative for cancer and consistence with fibroadenoma, as reported by other studies[10-14]and without the availability of FNAC of fibroadenomas, diagnosed clinically should not be treated conservatively.

Malignant transformations in the epithelial componentsof fibroadenomas are generally conside-redrare. The incidence of a carcinoma evolving within afibroadenoma was reported to be 0.002-0.0125%. About 50% of these tumors were lobular carcinoma insitu (LCIS), 20% were infiltrating lobular carcinoma, 20% were ductal carcinoma in situ (DCIS), and theremaining 10% were infiltrating ductal carcinoma. The clinical, sonographic and mammographicfindings are usually similar to those of benignfibroadenomas, and the malignant changes are oftennoted only when the fibroadenoma is excised. Hence, surgery is advocated in all questionable caseswhere biopsy or FNAC is inconclusive[15].

Conclusion

Fibroadenoma is present in younger age to older age and it is operated more often. This study indicates most of the patients are married women, painless lump is the commonest presentation, incidence decreases with increase in number of live births, usually solitary, grows slowly, upper lateral quadrant commonly involved, incidence increases with history of premenstrual mastalgia. In some of the cases noticed in both right and left breasts, and the number of lumps in each case was varied, beside size.

FNAC plays an important role as a valuable tool in diagnosis of fibroadenoma and FNAC is essential to exclude malignancy if conservative treatment is considered and helpful in identifying benign lesion. By and large fibroadenoma is a source of anxiety in teenage group and it should be dealt by surgical excision. An early surgical excision is effective with regard to the best possible cosmetic outcome.

Further co-existence of fibroadenoma and breast cancer is relatively rear but it should not be ignored by breast surgeons and patient should be informed properly.

Contribution from authors

- Dr Narayan Hebsur- The objectives and study design were formulated.
- Dr S.Y Mulkipatil- Contributed to the preparation of the manuscript and Data analysis.
- DrNarayanswamy- helped in data collection.

What this study adds to existing knowledge?

This study indicates most of the patients of fibroadenoma are married women, painless lump is the commonest presentation, incidence decreases with increase in number of live births.It is usually solitary, grows slowly, upper lateral quadrant commonly involved, incidence increases with history of premenstrual mastalgia.

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