

Original Research Article

Clinical study on fibroadenoma of the breast

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ABSTRACT

Background: It is a benign encapsulated tumour occurring commonly in young females of 15 -25 years of age. Presently it is considered as hyperplasia of a single lobule of the breast (classified under ANDI). Fibro-adenomas are one of the main benign diseases of breast. Though considered as a risk factor for development of breast cancer its reporting has been overshadowed by that of breast cancer.

Methods: The study was undertaken during the period August 2014 to August 2016, patients who attended surgical outpatient as well as in patient of ESIC medical college hospital formed part of the study.

Results: During the study period a total of 80 cases were confirmed as fibro-adenoma. The ages of cases ranged from 10-60yrs maximum number of cases 50 (62.5%) was in age group 16-30 years followed by 31 - 45 years with mean age of presentation 27 years. Majority of cases 60 (75.0%) belonged to urban background. It was found that 55 (68.75%) of the cases were married.

Conclusions: Fibro-adenomas which is small, single, age <30 years can be left alone with regular follow - up with USG at 6 monthly interval. But anxiousness of patient and parents find difficult for this conservative approach.

Keywords: Benign breast disease, Breast cancer, Mastalgia, Fibro-adenosis, Fibro-adenoma

INTRODUCTION

It is the most common benign tumour of the breast below 30 years of age in females. It shows similar hormonal activities of normal breast like lactation, perimenopausal involution. Incidence is 15% of palpable breast lumps. It is bilateral in 20% of cases, 20% are multiple. Juvenile fibro-adenoma occurs in adolescent girls. But it does not turn into phylloides tumour or carcinoma. Complex fibro-adenoma is a condition having typical fibro-adenoma with fibrocystic changes like apocrine metaplasia, cyst formation, sclerosing adenosis. 15% of proven fibro-adenomas are complexed. It occurs in older age groups; vocationally it may turn into malignancy unlike usual fibro-adenomas. Core-biopsy is needed to confirm the condition. 10-15% will increase in size progressively. It does not occur after menopause. Unless women are on hormones.

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. 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.¹ We have studied the clinic-pathological features of fibro-adenoma in a prospective study of patients attending surgical outpatient as well as in patient department at ESIC medical college and hospital, Coimbatore in south India.

METHODS

The study was undertaken during the period August 2014 to August 2016, patients who attended surgical outpatient as well as in patient of ESIC medical college hospital formed part of the study. Patients presenting with breast pain or breast lump were examined and evaluated. The profile of patients were recorded in proforma which included age, marital status, rural or urban background, duration of symptoms, pre-menstrual and post menstrual symptoms, number of lumps, size and location of lumps. All cases underwent fine needle aspiration cytology (FNAC) or specimens were sent for histopathological examination after excision. All cases which were proven fibro-adenoma were included in the study. A total of 80 selected cases were studied fully and is presented here.

RESULTS

Table 1: Clinicopathological features of confirmed cases of fibroadenoma.

Patient characteristic	Diagnosis	Number of cases	Percentage
Age group (years)	0-15	2	2.5
	16-30	50	62.5
	31-45	18	22.5
	46-60	10	12.5
Background	Rural	20	25
	Urban	60	75
Marital status	Unmarried	25	31.25
	Married	55	68.75
Symptoms duration (months)	1-12	40	50
	13-24	12	15
	25-36	4	5
	37-48	14	17.5
	49-60	3	3.75
	61-72	7	8.75
Location	Left breast	30	37.5
	Right breast	40	50
	Bilateral	10	12.5
Quadrant	Upper lateral	22	27.5
	Upper medial	08	10
	Lower lateral	28	35
	Lower medial	04	5
	Central	08	10
	multiple	10	12.5
	Size (cms)	<2	12
3-5		43	53.75
6-10		15	18.75
10-20		10	12.5
Treatment	Conservative	12	15
	Excision	68	85

During the study period a total of 80 cases were confirmed as fibro-adenoma. The ages of cases ranged from 10-60 years maximum number of cases 50 (62.5%)

was in age group 16-30yrs followed by 31-45 years with mean age of presentation 27 years. Majority of cases 60 (75.0%) belonged to urban background. It was found that 55 (68.75%) of the cases were married. The duration of symptoms varied for months to 3 years with maximum 40 (50%) of them presenting within a year of symptoms which was mainly lump in the breast. None of the cases were on oral contraceptives. Most of the fibro-adenoma was found in right breast (50%) with 10 (12.50%) cases presenting bilaterally. Lower lateral quadrant was the main location of lumps 28 (35.0%) followed by upper lateral 22 (27.5%), 10 (12.5%) cases presented with multiple lumps in breast. The size of tumours varied from 1 to 20 cms with 43 (53.75%) cases between 3-5 cms. Giant fibro-adenoma >5 cms were found in 15 (18.75%). Diagnosis was based of FNAC in 80% of the cases and rest confirmed by excision biopsy. A total of 12(15.0%) of the cases were managed conservatively and 68(85.0%) underwent excision with no major complication. Only 80% of the cases were available for follow up at 6 months period and none of them presented with recurrence.

DISCUSSION

The rate of occurrence of fibro-adenoma in women who were examined in breast clinics was 7% to 13%, while it was 9% in another study of autopsies.² Majority (66%) of case diagnosed fibro-adenoma belonged to second and third decade (16-30 years) possibly, the reason may be due to hormonal dependency, participation in lactation and involution at menopause which is a possible contribution to lump formation and evolution.⁵ Added to this giant fibro-adenoma is common on puberty. These finding were consistent with that of Hanna and Ashebu, Gogo.⁴ Further the mean age of incidence of fibro-adenoma among teenagers in India is as reported in literature is 14 years and 11 years in German Stehr et al.⁵

This implies the occurrence of fibro-adenoma seems to be more common among teenagers Brinton et al.⁶ Fibro adenoma was found to be more common in urban background compared to rural background. This trend may be due to more literacy and exposure to mass media sources which increase the awareness about breast cancer screening. Fibro-adenoma is more frequent among women in higher socioeconomic classes Soini et al.⁷ Fibro-adenoma tends to occur more frequently among married woman Yu et al than unmarried women.⁸ The possible reason may be due to early marriage and parity. The age of menarche, the age of menopause, and hormonal therapy, including oral contraceptives were shown not to alter the risk of these lesions. Though there is mention of association between oral contraceptives Ravnihar et al and fibro-adenoma.⁹ None of the cases were using oral contraceptives. Hence no definitive opinion regarding the association can be made. It's interesting to note that the duration of symptoms varies from one month to six years, may be due to slow growing tumour and painless condition of fibro-adenoma. Fibro-

adenoma were almost equally distributed in right and left breast in contrast to Rimsten's observation Canny et al that incidence of breast lesions is higher in the left breast than in the right.¹⁰ Besides upper lateral quadrant forms the most common location of fibro-adenoma which is accordance to findings of Foster O et al.¹¹ A fibro-adenoma is most often detected incidentally during a medical examination or during self-examination, usually as a discrete solitary breast mass of 1 to 2 cm. Fibro-adenoma vary in size from one centimetre to gaint forms that are 18 cms in diameter. This finding seeks support of Amshel and Sibley.¹² Fibro-adenoma larger than 5 cm (about 4% of the total) are commonly defined as being giant fibro-adenomas; however, this terminology is not universally accepted. Giant fibro-adenoma is usually encountered in pregnant or lactating women. When found in an adolescent girl, the term juvenile fibro-adenoma is more appropriate. These lesions in young women constitute 0.5% to 2% of all fibro-adenoma, and are rapidly growing masses that cause asymmetry of the breast, distortion of the overlying skin, and stretching of the nipple.

Histologically, they appear to be more cellular Oluwole and have less lobular components than do simple fibro-adenoma.¹³ However, giant fibro-adenoma are benign lesions that do not undergo transformation into malignancy. None of the cases reported a change in size or pain during pre and post menstrual period or pregnancy. Post menstrual changes may result in regression, calcification or both. Fibro-adenoma presented with solitary lumps to multiple multi centric and multi focal lumps Amshel and Sibley.¹² From 10% to 16% of patients with multiple fibro-adenoma have two to four in a single breast, which may present initially or be discovered over several years. Unlike women with a single fibro-adenoma, most of the patients with multiple fibro-adenoma have a strong family history of these tumours Pike and Oberman.¹⁴ A possible connection between multiple fibro-adenoma and oral contraceptives was proposed but has not yet been substantiated. FNAC was used as an investigation tool for management of fibro-adenoma this is due to reliability simplicity and less time consuming. FNAC is preliminary investigation used to distinguish fibro-adenoma from other benign breast diseases. Fibro-adenoma comprise about 50% of all breast biopsies Williamson et al, and this rate rises to 75% for biopsies Schuerch et al in women under the age of 20 years.^{8,15}

Age bases algorithms that allow for conservative management and that limit excision to patients in whom fibro-adenoma fail to regress are presented. This finding is in line with that of Greenberg et al. Conservative therapy has been attempted medically with progesterone and danazol, since the most prevalent theory on the etiology of Fibro-adenoma attributes them to excessive estrogen influence or response. Unfortunately, Fibro-adenoma fails to respond to these anti-estrogen medications. In the era of modern radiology and

nonsurgical tissue biopsies, conservative treatment of fibro-adenoma is often considered safe and acceptable after adequate triple testing Greenblatt et al (clinical examination, radiology, and biopsy).¹⁶ Patients who choose conservative management need to be informed of the limitation of triple testing and must be assessed promptly if there is symptomatic or clinical change. Approximately 1/3 of fibro-adenoma that have undergone long term periodic monitoring ultimately cause anxiety and discomfort for patients and difficulty for physicians. These masses will be excised, and only surgical resection is curative. Surgical excision was preferred treatment simple excision was done in majority of cases studied during the period and simple mastectomy for giant fibro-adenoma. This implies surgical excision is best option for treating the fibro-adenoma. The Fibro-adenoma Excision through Periareolar incision (FETPI) Ranieri et al technique offers the advantage of an incision in an aesthetically acceptable area.¹⁷ The scar can be camouflaged by the dark color of the areolar skin and the roughness of the areolar glands. The per areolar scar is esthetically superior to the overlying scar The FETPI technique is indicated for patients with the following characteristics Dixon et al an areola diameter greater than 3.5 - 5.0 cm, a distance from the outer margin of the mass to the nearest areola's edge ≤ 5.0 cm, the largest diameter of clinically diagnosed palpable Fibro-adenomas ≤ 3.0 cm, and age ≤ 35 years.¹⁸ Though none of our cases presented with recurrence or carcinoma within fibro-adenoma specimen. Breast cancer risk for fibro-adenoma has been estimated at 3.1 annual incidences per 1000, person-year rate, and the relative cancer risk estimated at 7.0. A more recent study designed to delineate the possible correlation between the histologic features of the fibro-adenoma and the risk for subsequent breast cancer used the term "complex fibro-adenoma Houssami et al.¹² This term applies to fibro-adenoma having the histologic characteristic of being more than 3 mm in diameter, or with elements of sclerosing-adenosis, epithelial calcifications, or papillary apocrine metaplasia Alle et al, which were associated with a 3.1 elevated risk of breast cancer.¹⁹ Proliferative changes in the parenchyma adjacent to the fibro-adenoma were related to a further increase of the risk to 3.88. The relative risk for women with a familial history of breast cancer and complex fibro-adenoma was 3.72, compared with control women with a family history of breast cancer without fibro-adenoma. In these studies, women with noncomplex fibro-adenoma and no family history of breast cancer were not at a greater risk of breast cancer. The risk of missing breast cancer in women under 25 years of age who have fibro-adenomas as diagnosed by physical examination, sonography, and FNAC is 1 in 229 to 1 in 700 Liu et al.²⁰ This risk remains very low in women under the age of 35 years. Therefore, it has been recommended that young patients should be observed with frequent clinical evaluations, and the lesions excised in women over the age of 35 years. Other investigators suggested that the cutoff age should be 25 years. Malignant transformations in the epithelial components

of fibro-adenoma are generally considered rare. The incidence of a carcinoma evolving within a fibro-adenoma was reported to be 0.002% to 0.0125%. About 50% of these tumours were lobular carcinoma in situ (LCIS), 20% were infiltrating lobular carcinoma, 20% were ductal carcinoma in situ (DCIS), and the remaining 10% were infiltrating ductal carcinoma. The clinical, sonographic and mammographic findings are usually similar to those of benign fibro-adenomas, and the malignant changes are often noted only when the fibro-adenoma is excised Ahmed et al.²¹ Hence surgery is advocated in all doubtful cases where FNAC is inconclusive.

CONCLUSION

Fibro-adenomas which is small, single, age <30 years can be left alone with regular follow - up with USG at 6 monthly interval. But anxiousness of patient and parents find difficult for this conservative approach. Indication for surgery are size more than 3 cms, multiple, giant type, recurrence, cosmesis and complex type. Fibro-adenomas are one of the most common benign diseases of breast. Predominantly found in urban women of age 16-45 with varying number and size in all quadrants of breast. Diagnosis by FNAC is reliable yet confirmation by biopsy is required in women >35 years and with unusual presentation. Though conservative management or observation can be followed in young women. Surgical excision by a circumareolar incision is preferred in large tumours and patients older than 35 years to avoid missing an occult malignancy within the fibro-adenoma.

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