A SYSTEMATIC STUDY ON FIBROADENOMA OF THE BREAST

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Abstract

Background: Fibroadenomas 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. Early diagnosis and treatment can relieve anxiety associated with non malignant conditions of breast. Analysis of pattern and prevalence should provide a valuable guideline for clinicians in India for comparison with other countries.

Methods: A prospective study was undertaken during 6 year period and all cases with breast lesion underwent FNAC or excision biopsy. Confirmed cases of fibroadenoma were studied for clinicopathological features. A total of 210 cases were analyzed.

Results: Of the 210 cases of fibroadenoma most were married urban women of age group 16-30(66.1%) with average 12 months of symptoms (80%). Majority of fibroadenomas (51.9%) were 3-5 centimeters located in upper outer quadrant (43.8%). Most of the cases (78.1%) underwent excision and none presented with recurrence or carcinoma within the lesion.

Conclusion: Fibroadenoma are the most common benign lesions of the breast with average age of presentation 27yrs. Excision is the best treatment for women over 35yrs to exclude malignancy.

Keywords: fibroadenoma, breast cancer,

1. Introduction

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 fibroadenoma as the most common lesion followed by cystosarcoma phylloides and fibrocystic diseases of breast. Rangabashyam1 and colleagues in clinical study also showed fibroadenoma as the most common breast lesion but it was followed by inflammatory lesions and fibroadenosis. We have studied the clinicopathological features of fibroadenoma in a prospective study of patients attending surgical outpatient department at Bangalore Medical College and Research Institute, Bangalore in south India.

2. Materials and Methods

The study was undertaken during the period November 2003 to May 2010, patients who attended surgical outpatient department of Victoria hospital attached to Bangalore Medical College and Research Institute formed part of the study. Patients presenting with mastalgia or breast lump were examined and evaluated. The profile of patients were recorded in Perfora 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 fibroadenoma were included in the study. A total of 210 unselected cases were studied fully and is presented here.

3. Results

During the study period a total of 210 cases were confirmed as fibroadenoma. The ages of cases ranged from 11-72yrs maximum number of cases 139(66.1%) was in age group 16-30yrs followed by 32-45yrs with mean age of presentation 27yrs. Majority of cases 135(64.2%) belonged to urban background. It was found that 130(61.9%) of the cases were married. The duration of symptoms varied for months to 3 years with maximum 168(80%) 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 fibroadenoma were found in right breast (49%) with 9(5.4%) cases presenting bilaterally. Upper lateral quadrant was the main location of tumors 92(43.8%) followed by lower medial 37(17.6%) 10 (4.9%) cases presented with multiple lumps in breast. The size of tumors varied from 1 to 18 centimeters with 109(51.9%) cases between 3-5 cms. Giant fibroadenoma >5cms were found in 68(32.4%).
Diagnosis was based of FNAC in 68% of the cases and rest confirmed by excision biopsy. A total of 46(21.9%) of the cases were managed conservatively and 164(78.1%) underwent excision with no major complication. Only 40% of the cases were available for followup at 1 year period and none of them presented with recurrence.

| Sl. No | Diagnosis | No. of cases | Percentage (%) |
|-------|-----------|--------------|----------------|
| 1. Age group (in years) | | | |
| 0-15 | 9 | 4.2 |
| 16-30 | 139 | 66.1 |
| 31-45 | 49 | 23.3 |
| 46-60 | 13 | 6.1 |
| 2. Background | | | |
| Rural | 75 | 35.8 |
| Urban | 135 | 64.2 |
| 3. Marital status | | | |
| Unmarried | 80 | 38.1 |
| Married | 130 | 61.9 |
| 4. Symptoms-Duration in months | | | |
| 1-12 | 168 | 80.0 |
| 13-24 | 16 | 7.6 |
| 25-36 | 17 | 8.0 |
| 37-48 | 0 | 0 |
| 49-60 | 4 | 1.9 |
| 61-72 | 5 | 2.5 |
| 5. Location | | | |
| Left breast | 98 | 46.6 |
| Right breast | 103 | 49.0 |
| Bilateral | 9 | 5.4 |
| Upper lateral | 92 | 43.8 |
| Upper medial | 33 | 15.7 |
| Lower lateral | 29 | 13.8 |
| Lower medial | 37 | 17.6 |
| Central | 9 | 4.2 |
| Multiple | 10 | 4.9 |
| 6. Quadrant | | | |
| <2 | 33 | 15.7 |
| 3-5 | 109 | 51.9 |
| 6-10 | 45 | 21.4 |
| 7. Size in cms | | | |
| 10-20 Conservative | 23 | 11.0 |
| Excision | 164 | 78.1 |

4. Discussion

The rate of occurrence of fibroadenoma in women who were examined in breast clinics was 7% to 13%, while it was 9% in another study of autopsies. Majority (66%) of cases diagnosed fibroadenoma belonged to second and third decade (16-30yrs) 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. Added to this giant fibroadenoma is common on puberty. These finding were consistent with that of Hanna and Ashebu(2002), Gogo Abite(2005). Further the mean age of incidence of fibroadenoma among teenagers in India is as reported in literature is 14 years viz -a –viz 11 years in German Stehr et al (2004). This implies the occurrence of fibroadenoma seems to be more common among teenagers. Fibroadenoma was found to be more common in urban background compared to rural background. Fibroadenoma tends to occur more frequently among married woman than unmarried women. 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 and fibroadenoma. None of the cases were using oral contraceptives. Hence no definitive opinion regarding the association can be made.

Its interesting to note that the duration of symptoms varies from one month to six years, may be due to slow growing tumor and painless condition of fibroadenoma. Fibroadenoma were almost equally distributed in right and left breast in contrast to Rimsten's observation that incidence of breast lesions is higher in the left breast than in the right. Besides upper lateral quadrant forms the most common location of fibroadenoma which is accordance to findings of Oluwole G. Ajao. A fibroadenoma 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. Fibroadenoma vary in size from one centimeter to giant forms that are 18 cms in diameter. This finding seeks support of Amshel and Sibley(2001). A fibroadenoma larger than 5 cm (about 4% of the total) are commonly defined as being giant fibroadenomas; however, this terminology is not universally accepted. Giant fibroadenoma are usually encountered in pregnant or lactating women. When found in an adolescent girl, the term juvenile fibroadenoma is more appropriate. These lesions in young women constitute 0.5% to 2% of all fibroadenoma, 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 and have less lobular components than do simple fibroadenoma. However, giant fibroadenoma are benign lesions that do not undergo transformation into malignancy16.

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. Fibroadenoma presented with solitary lumps to multiple multici centric and multi focal lumps. From 10% to 16% of patients with multiple fibroadenoma have two to four in a single breast, which may present initially or be discovered over several years.

Unlike women with a single fibroadenoma, most of the patients with multiple fibroadenoma have a strong family history of these tumors17. A possible connection between multiple fibroadenoma and oral contraceptives was proposed but has not yet been substantiated.

FNAC was used as an investigation tool for management of fibroadenoma this is due to reliability simplicity and less time consuming. FNAC is preliminary investigation used to distinguish fibroadenoma from other benign breast diseases18. Fibroadenoma comprise about 50% of all breast biopsies, and this rate rises to 75% for biopsies in women under the age of 20 years.19

Age bases algorithms that allow for conservative management and that limit excision to patients in whom fibroadenoma fail to regress are presented. This finding is in line with that of Greenberg et al(1998)20. Conservative therapy has been attempted medically with progesterone and danazol, since the most prevalent theory on the etiology of Fibroadenoma attributes them to excessive estrogen influence or response. Unfortunately, Fibroadenoma fail to respond to these antiestrogen medications21. In the era of modern radiology and nonsurgical tissue biopsies, conservative treatment of fibroadenoma is often considered safe and acceptable after adequate triple testing (clinical examination, radiology, and biopsy). 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 change22. Approximately 1/3 of fibroadenoma 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 curative22-24.

Surgical excision was preferred treatment simple excision was done in majority of cases studied during the period and simple mastectomy for giant fibroadenoma. This implies surgical excision is best option for treating the fibroadenoma.

The Fibroadenoma Excision Through Periareolar Incision(FETPI) technique offers the advantage of an incision in an aesthetically acceptable area25. The scar can be camouflaged by the dark color of the areolar skin and the roughness of the areolar glands. The periareolar scar is esthetically superior to the overlying scar. The FETPI technique is indicated for patients with the following characteristics: an areola diameter greater than 3.5 - 5.0 centimeters (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 Fibroadenomas ≤ 3.0 cm, and age ≤ 35 years.

Though none of our cases presented with recurrence or carcinoma within fibroadenoma specimen. Breast cancer risk for fibroadenoma has been estimated at 3.1 annual incidence per 1000, person-year rate, and the relative cancer risk estimated at 7.026-27.

A more recent study designed to delineate the possible correlation between the histologic features of the fibroadenoma and the risk for subsequent breast cancer used the term “complex fibroadenoma.”28 This term applies to fibroadenoma having the histologic characteristic of being more than 3 mm in diameter, or with elements of sclerosing adenosis, epithelial calcifications, or papillary apocrine metaplasia, which were associated with a 3.1 elevated risk of breast cancer. Proliferative changes in the parenchyma adjacent to the fibroadenoma 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 fibroadenoma was 3.72, compared with control women with a family history of breast cancer without fibroadenoma. In these studies, women with noncomplex fibroadenoma 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 fibroadenomas as diagnosed by physical examination, sonography, and FNA is 1 in 229 to 1 in 700.29 This risk remains very low in women under the age of 35 years30. 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 years31.

Malignant transformations in the epithelial components of fibroadenoma are generally
considered rare. The incidence of a carcinoma evolving within a fibroadenoma was reported to be 0.002% to 0.0125%. About 50% of these tumors 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 fibroadenomas, and the malignant changes are often noted only when the fibroadenoma is excised. Hence surgery is advocated in all doubtful cases where sinology or FNAC is inconclusive.

Conclusion

Fibroadenomas 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 >35yrs 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 tumors and patients older than 35yrs to avoid missing an occult malignancy within the fibroadenoma.

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