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# Comparison between Fibroadenoma as a Clinical Presentation in Females under 30 and Post 30 Years Old

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## ABSTRACT

**Background:** The most common benign tumor of the breast in young females is fibroadenoma. It is a biphasic tumor, which has a stromal and an epithelial component. It usually presents as a painless, mobile, well-defined mass.

**Aim of the study:** We tried to address the percentage of occurrence of fibroadenomas in various ages in female breast. **Patients and Methods:** 60 female patients coming to breast outpatient clinic with breast complaints between 15 and 60 years old, we separated studied cases into two groups according to age; group A below 30 years old and group B above 30 years old. We excluded from our study patients who had no breast lesion by clinical examination, and patients refused to participate in our study. The studied cases were subjected to clinical examination, US and (or) mammography and tru-cut biopsy.

**Results:** We found that occurrence of fibroadenomas in all age groups was 39/60 [65%], below age of 30 was 24/39 [61.53%] while its occurrence above age of 30 was 15/39 [38.46%]. The peak incidence of fibroadenoma was between 20 and 30 years old (56.4%). while incidence after age of 40 years old was 7.69%. Most lesions were in upper outer quadrant (56.41%). Lumps size ranged from about 0.5 cm to 4.5 cm in greatest dimension, most lumps [79.48%] not exceed 1 cm, 25.64% of patients had breast lesions bilaterally, 35.89% had a right-side lesion and 38.46% had left side lesion. **Conclusion:** Fibroadenoma is the most common breast lesion and its occurrence differ greatly in various age groups with peak incidence between ages of 20-30 years old, and less common after age of 40 years old.

**Keywords:** Fibroadenoma; Breast; Lump; Clinical examination; Ultrasonography.

## INTRODUCTION

The most common benign tumor of the breast in young females is fibroadenoma. Histologically, it is a biphasic tumor, which has a stromal and an epithelial component [1]. In fibroadenoma, there is a proliferation of the stromal and the epithelial components of terminal ductal units [2]. It typically manifests as a well-defined, painless lump that is movable [3].

It can present at any age but are usually discovered among twenty and thirty years old. After the 4$^{th}$ decade, it has a low incidence [4]. It may enlarge slowly with no pain or changes in skin and nipple, but the presence of a lump in a teenager may cause worry and anxiety[5].

The most of fibroadenomas reduce in size with time, and lose cellularity. Ten to forty percent of fibroadenomas in adolescents may regress spontaneously [5,6]. The pathogenesis of fibroadenoma is not clear, but it may be an association with the baseline levels of hormones, the rate of changes in the hormone levels, family history and obesity [7,8]. Fibroadenoma may be diagnosed by clinical examination, ultrasonography and fine-needle aspirate cytology [9]. Breast ultrasonography is accurate in diagnosis of fibroadenomas [10]. Most cases of fibroadenomas do not need surgical excision, they need only conservation. They only need excision if they become symptomatic or large [11].

## PATIENTS AND METHODS

This prospective study was conducted within one year from March 2019 to March 2020 from follow up of 60 female patients coming to hospital outpatient clinic with breast complaints between 15 and 60 years old. We separated studied cases into two groups according to age; group A below 30 years old and group B above 30 years old.

Random Selection Process: Patients were randomly selected from those presenting to the breast outpatient clinic with breast complaints. A simple random sampling method was employed, where each eligible patient was assigned a unique identifier, and a random number generator was used to select 60 participants from the pool of eligible patients to ensure an unbiased representation of the population. Inclusion criteria in our study were; female cases between ages of 15 and 60 years old, had a breast complaint. We excluded from our study; patients below 15 years old, or above 60 years old, or had no breast lesion by clinical examination, and patients refused to participate.

***At the first visit:*** We took a detailed history from the patient. We examined the patient clinically: general and local examinations. We examined the breast and axilla bilaterally and then cervical and supraclavicular lymph nodes. We did ultrasonography and soft tissue mammography for patients above 35 years old, and US alone for patients below age of 35. We did an US-guided tru-cut biopsies after informed consent. Under aseptic technique, we used local anaesthesia [2% lignocaine], and through a very small skin incision the biopsy specimens were obtained, the cores of tissue were fixed in neutral buffered formalin [10%] for



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twenty-four hours, cores were dehydrated, and cleared in xylene, and then embedded in paraffin, stained with hematoxylin and eosin and examination was done under a light microscope. Visits schedule was given to all participants.

***At follow up visits:*** at a regular interval for detection of the changes occurred in the size, consistency and the nature of the lesion, or appearance of a new breast lesion, and to manage the complications. Clinical examination was every 3 months. Breast US was every six months and mammography every 1 year [for studied cases above age of 35 years]. Histopathology re-evaluation was done if there were changes in the clinical/radiological findings.

**Ethical approval:**

**This work has been carried out in accordance with The Code of Ethics of the World Medical Association (Declaration of Helsinki) for studies involving humans. We gave a detailed information to all patients and a written consents were obtained from adult patients or from the caregivers of patients below 18 years. The study was approved by the Ethics Board of Ahmed Maher Teaching Hospital *(approval code: REC103/2020).***

***Data Analysis***

Version 25 of the Statistical Package for the Social Sciences [SPSS] was used to code and analyze the data. Data were presented as range, mean, frequency, and percentage.

**RESULTS**

The age of studied cases was from 15 to 60 years old with a mean age of 27.38 years. Occurrence of fibroadenomas in all age groups were 39/60 [65%], below age of 30 were 24/39 [61.53%] while its occurrence above age of 30 were 15/39 [38.46%].

**Table (1):** Age distribution of patients.

| Age distribution | Age in years | No. of cases | Percentage (%) |
|---|---|---|---|
| Group A: Below 30 | Below 20 | 2 | 5.1% |
| | 20-30 | 22 | 56.4% |
| Group B: Above 30 | 30-40 | 12 | 30.7% |
| | 40-60 | 3 | 7.69% |
| Total | | 39 | 100% |

From 39 fibroadenomas patients, 26 patients had solitary lump [66.67%] and 13 patients had multiple lumps [33.33%] of which 4 in more than one quadrant, while 9 patients in the same quadrant (Figures 1-3). All patients (100%) who presented with one lump only, had no pain and no nipple discharge. In this study; 10 patients (25.64%) had breast lesions bilaterally, 14 patients (35.89%) had a right-side lesion and 15 patients (38.46%) had left side lesion. Most lesions were in upper outer quadrant alone in 22 studied cases (56.41%), while 8 patients had the lesion in the lower outer quadrant (20.51%), 3 patients had a central (subareolar) lesion (7.69%), and 6 in more than one quadrant (15.38%).

Lumps size ranged from about 0.5 cm to 4.5 cm in greatest dimension, 31 lumps [79.48%] did not exceed 1 cm, 7 lumps [17.94%] ranged in size from 1 to 2 cm, while one lump [2.56%] was larger than 2 cm. Nipple, areola, and skin had a normal appearance in all cases (100%).

We did breast US for 60 patients (100%) and mammography for patients more than 35 years old (18 patients). All patients in this study (100%) were between BIRADS 1 and BIRADS 3. We did tru-cut biopsy for 30 cases and by pathological examination there was no evidence of atypia, metaplasia or dysplasia.

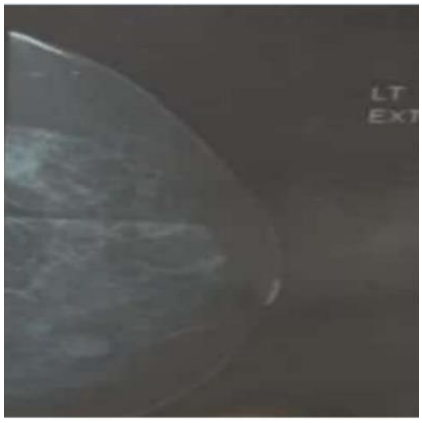

**Figure 1:** Mammography: left breast fibroadenoma.

**Figure 2:** Breast ultrasound; right breast large fibroadenoma.

**Figure 3:** Breast ultrasound; left breast multiple fibroadenoma.

## DISCUSSION

Fibroadenoma is still worthy of attention, as it has a high prevalence and it impacts on the quality of life and the mental health of the patient [9]. In this study, we tried to address the percentage of occurrence of fibroadenomas in various ages in female breast, so we included 60 female patients in various ages who were selected randomly from patients presented to breast outpatient clinic with breast lesions and we excluded patients had no lesions in the breast.

In our study, occurrence of fibroadenomas in all age groups were 39/60 [65%]. **Jayasinghe *et al.*** reported that; fibroadenomas account for sixty eight percent of breast masses and forty-four to ninety four percent of biopsied lesions of the breast [6]. Also, **Egwuonwu *et al.*** reported in their study that (sixty nine percent) of breast cases were suspected to be fibroadenoma by clinical examination, and (twenty two percent) represented other benign lesions, [12] while **Jain *et al.*** in their study reported that (seventy four percent) of breast cases were suspected to be fibroadenoma [13]. **Thakur and Misra**, in their study reported that 65% proved to be fibroadenoma by histopathological examination [14]. **Cant *et al.*** in their study reported that by clinical diagnosis and histopathological confirmation, fibroadenoma accounted for (68.0%) of cases [15].

In our study the peak incidence of fibroadenoma was between 20 and 30 years old the number of patients was 22/39 (56.4%), while incidence after age of 40 years old was 3 patients 3/39 (7.69%). Early research done in 1968 said that the peak incidence of fibroadenoma was at age group of twenty to twenty-nine years old, with few cases presented after age of 50 [12]. **Coriaty-Nelson *et al.*** did a large population study of 265,402 females and reported that fibroadenoma was highest in females below 35 years, and occurrence of fibroadenoma decreased with age after 35 years and decreased significantly at time of menopause [16].

In this study; 10 patients (25.64%) had breast lesions bilateraly, 14 patients (35.89%) had a right-side lesion and 15 patients (38.46%) had left side lesion. **Egwuonwu *et al.*** in their study reported that the occurrence of fibroadenoma in the left breast was (48.9%) of patients [12]. **Thakur and Misra.** reported that in 85% of patients the mass was unilateral [14]. **Zhu *et al.*** reported that; fibroadenoma was in the left side in 38.1% (1251/3285) of cases, in the right sided in 38.0 percent (1249/3285) of cases and bilateral in 23.9 percent (785/3285) of cases [10].

In this study, from 39 fibroadenomas patients, 26 patients had solitary lump [66.67%] and 13 patients had multiple lumps [33.33%] of which 4 in more than one quadrant, while 9 patients in the same quadrant. **Zhu *et al.*** reported that 2171 (66.1%) of cases had a single fibroadenoma, while 1114 (33.9%) of cases had multiple fibroadenomas [10].

In our study; lumps size ranged from about 0.5 cm to 4.5 cm in greatest dimension. 31 lumps [79.48%] not exceed 1 cm. 7 lumps [17.94%] ranged in size from 1 to 2 cm, while one lump [2.56%] were larger than 2 cm. **Zhu *et al.*** reported that; the size range of fibroadenomas was 3–42 mm. Most of fibroadenomas (80.4 percent) did not exceed 1 cm in size; 17.4 percent ranged in size from 1 to 2 cm, and only 2.1 percent were larger than 2 cm [10].

In our study, most lesions were in upper outer quadrant alone in 22 studied cases (56.41%), while 8 patients had the lesion in the lower outer quadrant (20.51%), 3 patients had a central (subareolar) lesion (7.69%), and 6 in more than one quadrant (15.38%). **Chang *et al.*** reported that the upper outer quadrant of the breast was affected in 55.4% of patients, while the lower outer quadrant was affected in 20.1% of patients, and the central (subareolar) area was affected in 7.9%. of patients [17]. **Carty *et al.*** reported in their study that the upper outer quadrant was affected in (31.3%) of patients [18].

## CONCLUSION

Fibroadenoma is the most common breast lesion and its occurrence differs greatly in various age groups with peak incidence between ages of 20-30 years old, and less common after age of 40 years old.

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