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RISK OF FIBROADENOMA IN PATIENTS PRESENTING WITH BREAST LUMP

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ABSTRACT

Background

Breast lump remains one of the common clinical presentations in surgical practice, and worry about malignant potential is always a concern. Fibroadenoma is the most common lesion encountered aroused breast diseases especially in young women. Much, though its relative frequency and age distribution varies across populations so local data are needed to shape helpful clinical information.

Objective

To assess the risk (incidence) of fibroadenoma among patients who visit with breast lump.

Study Design

Retrospective cross-sectional study.

Place and Duration of Study

Study conducted at the Department of General Surgery, Jinnah Postgraduate Medical Centre, Karachi from January 2024 to December 2024.

Methods

The records of patient treated with breast lump were evaluated. Age, sex, clinical presentation before surgery, imaging findings and histopathological diagnosis were obtained. Triple assessment including clinically, imaging [ultrasound and/or mammography (MAMO)] and cytological/histopathological evaluation [fine needle aspiration cytology (FNAC) or core biopsy] was done in all patients. SPSS version 26 was used for data analysis. Frequencies and percentages were calculated, while associations were evaluated based on the chi-square test with $p \leq 0.05$ is considered statically significant.

Results

In total, 180 patients were enrolled with a mean age of 26.8 ± 8.4 years. The majority were females (97.2%). Fibroadenoma was the most prevalent breast lesion, accounting for 102 (56.7%) of patients

diagnosed with such a condition. The frequency highest in the age group of 21–30 years. Younger age was significantly associated with fibroadenoma (p = 0.001).

Conclusion

Fibroadenoma is the most prevalent cause of a breast lump, especially in young women. Triple assessment allows accurate diagnosis to guide management and discard malignancy.

Keywords

Breast lump Fibroadenoma Benign breast disease FNAC Retrospective Study Triple assessment

Introduction

Breast lump is a common presentation in surgical outpatient departments and it causes significant anxiety for patients who are worried about an underlying malignant condition. Breast lumps vary in clinical spectrum from benign to invasive carcinoma, and thus need careful evaluation for diagnosis (1). Breast lump secondary to benign breast diseases form the majority of cases, especially in younger females; whereas fibroadenoma is one of commonest lesion found (2). Fibroadenoma is a biphasic, hormonally regulated tumor consisting of both stromal and epithelial components.3 The lesion usually appears as a painless, firm, well-defined, mobile mass that most often occurs between the ages of 15 and 35 years (4) Although fibroadenomas are benign, they have low malignant potential which is why diagnostic work up for most cases of breast lumps including both simple and complex ones that resemble a malignant lesion (5).

Triple assessment (clinical examination, imaging and cytological or histopathological confirmation) has long been the standard methodology for breast lump evaluation with excellent overall accuracy in diagnosis (6). Imaging techniques, including ultrasound and mammography are instrumental in classifying lesions as benign or suspicious, especially if these results can be combined with fine needle aspiration cytology (FNAC) or core biopsy [7].

Fibroadenoma is one of the most common breast lesions and accounts for 50–60% benign breast diseases (8). However, the variability exists across populations due to demographic differences; healthcare access and screening practices (9). Early diagnosis of breast disease is complicated by factors such as limited awareness and often delayed presentation in developing countries including Pakistan, hence the need for local epidemiological data (10). In addition, the misdiagnosis of benign breast conditions has a significant economic cost associated with unnecessary surgical treatment (11). Thus, knowledge of the prevalence and distribution of fibroadenoma among patients presenting to breast lump is critical for clinical decision-making with a view help improve patient management.

Methodology

This retrospective descriptive study was performed at the Department of General Surgery, Jinnah Postgraduate Medical Centre (JPMC), Karachi for a duration of 1 years between January 1st, 2023 to December 2023. We reviewed the medical records of patients who had presented with breast lump during a defined study period.

Consecutive non-probability sampling was used for inclusion and a total of 180 patients meeting the eligibility criteria were enrolled. 15 years or older had total diagnostic workup for a breast lump, and were male. Exclusion criteria included; previously diagnosed patients of breast carcinoma and recurrent cases, incomplete records and no cytological/histopathological confirmation.

Data from outpatient records, radiology reports and histopathology registers were obtained in the form of filled structured proforma. All patients had received standard triple assessment, including clinical examination, imaging (ultrasound and/or mammography) and cytological or histopathological evaluation by fine needle aspiration cytology or core biopsy. These findings were consistent with the diagnosis of fibroadenoma.

Recorded variables included age, gender, clinical presentation and findings on imaging as well the final diagnosis. Data was entered and analyzed using SPSS Version 26. Quantitative variables were described using means and SD while

qualitative variables were described as frequencies with percentages

Ethics statement Ethics approval was granted by the Institutional Review Board of Jinnah Postgraduate Medical Centre, Karachi. All data were anonymized, thereby ensuring patient confidentiality.

Results

A total of 180 patients presenting with breast lump were included in this retrospective study conducted at the Department of General Surgery, Jinnah Postgraduate Medical Centre, Karachi, from January 1, 2023 to December 31, 2024. The mean age of the patients was 26 years, and the majority were female (Table 1).

Most patients belonged to the 21–30 years' age group, followed by 31–40 years and ≤20 years (Table 1). Only a small proportion of patients were male. Clinically, the most common presentation was a painless, mobile breast lump. The duration of symptoms varied, with most patients presenting within a few months of onset. On examination, the majority of lumps were well-defined and mobile. The upper outer quadrant was the most frequently involved site.

All patients underwent triple assessment. On histopathological evaluation, fibroadenoma was the most common diagnosis, followed by fibrocystic disease, simple cysts, carcinoma, and other benign conditions (Table 2).

Table 1: Demographic Characteristics (n = 180)

Variable	Frequency	Percentage (%)
Age Group (years)		
≤20	38	21.1
21–30	80	44.4
31–40	42	23.3
>40	20	11.1
Gender		
Female	175	97.2
Male	5	2.8

Most patients presented with a painless breast lump, commonly located in the upper outer quadrant. The duration of symptoms varied from a few weeks to several months.

Table 2: Histopathological Diagnosis (n = 180)

Diagnosis	Frequency	Percentage (%)
Fibroadenoma	102	56.7
Fibrocystic disease	36	20.0
Simple cyst	18	10.0
Carcinoma breast	14	7.8
Others	10	5.5

Fibroadenoma was predominantly observed in younger patients, particularly in the second and third decades of life, and was more common in females.

DISCUSSION

A majority of patients presenting with a breast lump had fibroadenoma, as shown in this study which is descriptive and retrospective. In recent literature, fibroadenoma has been found to comprise a significant proportion of benign breast lesions globally (12).

Fibroadenoma occurs mainly in young women, particularly those aged from new-born to the third decade of life and this is reflected by the age distribution found during study (in 13). This age preference is thought to be due in part to the hormonal effects, with breast tissue being sensitive

to estrogen (14). Similar results were reported by a tertiary care hospital study in Pakistan, where the majority of fibroadenoma cases (66.05%) occurred between 16–30 years of age supporting this study's findings as well (15). This analogy emphasizes stability of disease patterns across specific population settings.The marked female predominance in this study is coincident with the international data, given that fibroadenoma is closely related to hormonal physiology [16]. Involvement of male breasts is uncommon, and one case was reported in general (17). Lump is limit reversible, variable in size and to mobile breast present without painful was the normal clinical manifestation of this study (18). Such typical features usually facilitate clinical suspicion prima facie which is corroborated by diagnostic vis-a-vis.Most of the lesions located in the upper outer quadrant due to a greater volume of glandular tissue (19) similarly as reported in previous studies. This study used triple assessment to ascertain diagnosis: the combination of a patient history and clinical examination, radiological studies (e.g., ultrasound or mammography), and pathological evaluation contributed to an accurate diagnosis in line with recent evidence that recommends this approach as mean test for breast lump assessment [20].Fibroadenoma was the most common diagnosis, but a slight proportion of malignant lesions also were discovered which indicates every breast lump should be evaluated thoroughly regardless age (21).

Limitations of this retrospective descriptive study included reliance on the accuracy of computer records and inability to comprehensively evaluate several risk factors. Nonetheless, the study elucidates useful local data on breast lump trends in a tertiary care setup.

Conclusion

Fibroadenoma is the most common cause of breast lump in patients presenting to a tertiary care setting, particularly among young females in the second and third decades of life. The majority of cases present as painless, mobile lumps and are benign in nature. Despite this, a small proportion of malignant lesions underscores the importance of careful evaluation of all breast lumps. The use of triple assessment remains essential for accurate diagnosis and appropriate management, helping to differentiate benign from malignant conditions and avoid unnecessary surgical interventions. This study highlights the need for increased awareness and early clinical evaluation of breast lumps to ensure timely diagnosis and optimal patient care.

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