

HISTOPATHOLOGICAL SPECTRUM OF BENIGN BREAST LESIONS: A TWO-YEAR RETROSPECTIVE STUDY AT A TERTIARY CARE CENTRE

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Abstract

Breast lesions represent a wide spectrum of pathological changes, ranging from inflammatory to neoplastic conditions, and often present as palpable masses. Differentiation between benign and malignant lesions frequently rests on histopathological examination. The present study was undertaken with an aim to determine the incidence and analysis of the histopathological spectrum of benign breast lesions. This retrospective study was conducted in the Department of Pathology, GMERS Medical College, Junagadh, over a two-year period from 01/01/2023 to 31/12/2024, to determine the incidence and histopathological spectrum of benign breast lesions across all age groups and genders. Relevant clinical details were obtained from requisition forms. A total of 127 breast lesion cases were studied, of which 100 (78.7%) were benign. Fibroadenoma was the most common lesion (68%), followed by gynaecomastia (7%) and lipoma (6%). Of the 100 benign cases, 93 (93%) occurred in females and 7 (7%) in males, with the majority (48%) in the 21-30-year age group. Fibroadenoma was the commonest benign breast lesion overall, occurring predominantly in young females. Histopathological examination remains essential for accurate diagnosis, particularly in lesions that clinically mimic malignancy.

Keywords: Breast Lesions, Benign, Fibroadenoma

Introduction

Breast lesions have gained global attention as breast cancer has become one of the leading causes of death among women worldwide [1]. Advances in imaging techniques and increased use of fine needle aspiration cytology have greatly assisted the preoperative evaluation of breast lesions.

However, in a large proportion of cases differentiation between benign and malignant lesions still rests on histopathological examination. The vast majority of the lesions that occur in the breast are benign [2]. The importance of benign lesions lies in their ability to mimic cancers, and not all benign lesions are completely free of risk.

Treatment of benign breast disease aims at preservation of breast tissue as far as possible, in contrast to the more radical surgeries required for breast cancer.

Aim and Objectives

To study the histopathological spectrum and frequency of benign breast lesions in all age groups and gender in a tertiary care centre.

Material and Methodology

This retrospective descriptive study was conducted in the Department of Pathology, GMERS Medical College and Hospital, Junagadh, Gujarat, over a period of two years from 1st January 2023 to 31st December 2024.

All breast specimens received for histopathological examination during the study period were reviewed. Clinical details including age, sex, presenting complaints and relevant obstetric history were obtained from the pathology requisition forms.

Inclusion Criteria

- Patients of all age groups and both sexes presenting with breast lump, mastalgia or nipple discharge.
- Histopathologically confirmed benign breast lesions.

Exclusion Criteria

- Histopathologically confirmed malignant breast lesions.
- Inadequate or autolysed specimens.

The specimens received as excisional biopsies and lumpectomies were fixed in 10% neutral buffered formalin. Gross examination was performed according to standard protocols. Representative tissue sections were processed routinely, embedded in paraffin, sectioned at 4-5 μ m thickness and stained with Hematoxylin and Eosin (H&E). Microscopic examination was carried out and the diagnosis was established according to standard histopathological criteria.

The data were entered into Microsoft Excel and analysed using descriptive statistics. Results were expressed as frequencies and percentages.

Result

A total of 127 breast specimens were evaluated during the study period, of which 100 (78.7%) were diagnosed as benign lesions. Fibroadenoma was the most common lesion (68%), followed by gynaecomastia (7%), lipoma (6%), fibrocystic disease (5%) and adenosis (4%). The majority of patients were females (93%), and most benign lesions occurred in the 21-30-year age group. The detailed histopathological spectrum and age-wise distribution are presented in Tables 1 and 2.

Table 1: Histopathological distribution of benign breast lesions

Benign breast lesion	No. of cases (%)
Fibroadenoma	68 (68%)
Gynaecomastia	07 (07%)
Lipoma	06 (06%)
Fibrocystic Disease	05 (05%)
Adenosis	04 (04%)
Lactating Adenoma	02 (02%)
Fat Necrosis	02 (02%)

Tubular Adenoma	02 (02%)
Chronic Mastitis	02 (02%)
Duct Ectasia	01 (01%)
Galactocele	01 (01%)

Table 2: Age-wise distribution of benign breast lesions

Breast Lesion	11-20 yrs	21-30 yrs	31-40 yrs	41-50 yrs	51-60 yrs	61-70 yrs	Total
Fibroadenoma	12	34	19	2	1	-	68
Gynaecomastia	2	3	2	-	-	-	07
Lipoma	-	1	2	2	1	-	06
Fibrocystic Disease	-	2	2	1	-	-	05
Adenosis	1	1	2	-	-	-	04
Lactating Adenoma	-	1	1	-	-	-	02
Fat Necrosis	-	-	1	1	-	-	02
Tubular Adenoma	-	1	1	-	-	-	02
Chronic Mastitis	-	1	1	-	-	-	02
Duct Ectasia	-	1	-	-	-	-	01
Galactocele	-	1	-	-	-	-	01
Total	15	46	31	6	2	-	100

Discussion

Fibroadenoma:

Fibroadenoma (68%) was the most common lesion seen in our study. Our findings were consistent with the incidence reported by Sangma et al (71.4%), Hatim et al (77.6%) and Dayanand et al (62.3%) [3-5]. Peak incidence of fibroadenoma was found in the 21-30-year age group in these studies as well. Microscopically, it consists of a proliferation of epithelial and mesenchymal elements. The stroma proliferates around tubular glands (pericanalicular growth) or compressed cleft-like ducts (intracanalicular growth). Often both types of growth are seen in the same lesion.

Gynaecomastia:

Gynaecomastia is defined as the enlargement of the male breast resulting from hypertrophy and hyperplasia of both glandular and stromal components. Gynaecomastia constituted 7 cases (7.0%) of all the benign lesions in male patients. Hatim et al reported an incidence of 4.3% [4] for gynaecomastia.

Fibrocystic Disease:

Fibrocystic disease was the next most common benign breast disease, accounting for 5.0% (5 cases) of all benign breast lesions. Chiedozi et al reported a similar incidence of 2.8% for fibrocystic disease [8]. Other studies, such as Naseer Ahmed et al from Jamshoro, reported an incidence of 10.3%. Histologically, these lesions were characterised by overgrowth of both fibrous stroma and epithelial elements (ducts and lobules) in differing proportions, with cyst formation.

Inflammatory Lesions:

Inflammatory lesions of the breast comprised 2 cases of chronic mastitis. We also had 1 case of duct ectasia and 2 cases of fat necrosis. We found cases of galactoceles in young lactating females, in accordance with studies by Bagale P et al (1.02%) [9] and Khanna S et al (1.2%) [10]. Peak incidence of inflammatory lesions was seen between 21 and 40 years of age.

Duct Ectasia:

Microscopically, the lesion is characterised by foamy macrophages surrounding dilated ducts.

Lactating adenoma was found in 2 (2.0%) cases, comparable to the 1.67% reported by Pudale et al [6]. All cases were seen in the 21-30-year age group. Two cases of tubular adenoma were seen in a 24-year-old female. Grossly, the tumour measured 3 cm, and on microscopy the lesion showed numerous closely packed uniform small tubules, lined by benign epithelium with very scant stroma [7]. In our study, the mesenchymal tumour of breast, lipoma, comprised 6.0% (6 cases) of all benign breast lesions.

Conclusion

Benign breast lesions constitute the majority of breast specimens received for histopathological examination. Fibroadenoma was the commonest lesion in the present study. Histopathological evaluation remains indispensable for accurate diagnosis, appropriate management and exclusion of malignancy.

Conflict of Interest

The authors declare no conflict of interest.

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