ORIGINAL RESEARCH PAPER

Pathology

STUDY OF BENIGN PROLIFERATIVE BREAST DISEASES AMONGST INDIAN FEMALE PATIENTS AT A RURAL TERTIARY CARE INSTITUTION.

KEY WORDS: BPED, noneoplastic, fibrocystic disease, breast lesions.

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ABSTRACT

Proliferative changes in the breast may be associated with an increased risk for breast cancer. The purpose of this study was to determine the incidence of benign proliferative breast disease (BPBD) among female patients presenting with breast lump at a rural tertiary care institution.

Methods: This prospective study was conducted over a period of two years at a rural tertiary care institute in female patients presenting with a breast lump. Specimens received included excisional biopsy, lumpectomy & mastectomy.

Results:A total of 202 cases of nonneoplastic and proliferative breast lesions among females were studied. The majority of patients were in 21-40 years age group. Fibrocystic disease (48.67 %) was the most frequently diagnosed proliferative breast disease followed by sclerosing adenosis (25.66%). Out of 202 patients who had histopathological examination, 113 (55.94%) had benign proliferative lesions.

Conclusion: As BPED are pre-neoplastic conditions, most of them had atypical proliferation, an understanding of their histological nature is very important because it may help to identify risk of breast carcinoma.

Introduction

Benign proliferative breast disease is an extremely complex and interrelated group of proliferative disorders of the breast parenchyma. Most of which are probably not true neoplasm, rather hormone-induced hyperplastic processes. Some, like typical fibroadenoma, are recognized easily at a glance. Others raise possibility of differential diagnosis of carcinoma at the clinical, gross, microscopic level. Some of them are probably related to the development of malignancy later[1]. Several studies suggest that, in many women, proliferative breast disease (PBD) may exist for some time as a clinically inapparent, diffuse entity from which detectable masses subsequently arise[2]. In present study of BPED, we found epitheliosis, sclerosing adenosis, apocrine metaplasia and atypical ductal hyperplasia as the major features in association with fibrocystic disease.

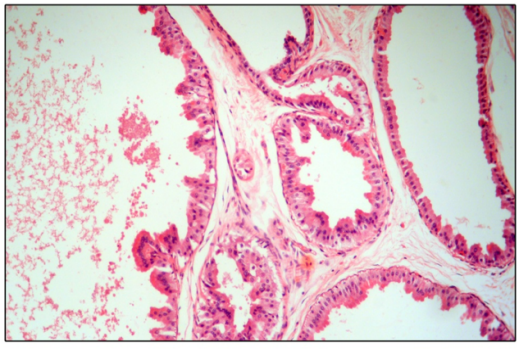
Materials and Methods

The prospective study of non-neoplastic and proliferative breast lesions was carried out in the Department of Pathology over a period of 2 years in female patients presenting with a breast lump at a rural tertiary care center. For present study, material was obtained from surgically excised biopsies, lumpectomy of breast lesions, mastectomy specimens. Detailed history included age, sex, and duration of complaints like lump in breast, pain, fever, nipple discharge or retraction, menstrual history included age at menarche, regularity of cycles, marital history. Tissue obtained was fixed in 10% formalin. Gross features of each specimen were noted and sections were processed by usual paraffin technique, were stained by Haematoxylin and Eosin stain. Slides were studied microscopically to identify the lesion and correlated with clinical data.

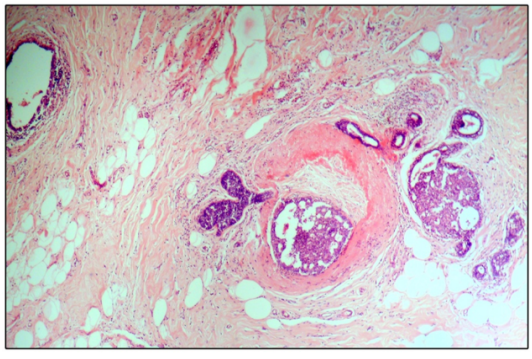
Result

Total 202 cases of nonneoplastic and proliferative lesions were included in study while benign and malignant tumours of the breast were excluded from study. These non-neoplastic lesions of the breast including inflammatory lesions, benign proliferative lesions and miscellaneous lesions were studied in detail (Graph1).

Table 1 shows distribution of benign proliferative lesions in non-neoplastic lesions of female breast (Total113 cases). Major group consisted of fibrocystic disease followed by sclerosing adenosis .Out of 55 cases of fibrocystic disease 10 cases showed foci of sclerosing adenosis, 3 cases showed focus of an abscess and 20 cases showed focus of mild epithelial hyperplasia. Individual case association of fibrocystic disease with atypical ductal hyperplasia, duct ectasia, non-lactating mastitis, sclerosing adenosis and intraductal carcinoma was observed. In 46 cases epithelial hyperplasia with apocrine change was noted. Out of 29 cases of sclerosing adenosis 12 showed association with epitheliosis and 9 cases showed fibro cystic change. Out of 15 cases of fibrous disease 4 cases were associated with epitheliosis. No case was found below the age of 10 years. Fibrocystic disease was particularly noted in 31-40 years age group. Minimum age noted in fibrocystic disease was 18 years and was maximum 60 years. The minimum age noted in fibrous disease was 20 years. Maximum age was 49 years. Fibrocystic disease was noted predominantly in right sided breast, 40 cases out of 55 cases (72.72%). One case of fibrocystic disease showed severe epitheliosis.



Fibrocystic Disease : Photomicrogaph showing apocrine change. (H & E x100)



Fibrocystic Disease : Photomicrograph showing severe degree of epitheliosis, completly filling cyst with 'tuft and mounds' projecting into the lumen. (H & E x40)

Four showed moderate epitheliosis and 20 showed mild epitheliosis. One case showed atypical ductal hyperplasia. Out of 12 cases of sclerosing adenosis, 6 showed mild epitheliosis and 6 showed moderate epitheliosis. Out of 15 cases of fibrous disease 4 cases were associated with epitheliosis, out of which 3 cases were of mild epitheliosis while one case showed moderate epitheliosis (Table 2).

All patients presented with lump in breast. In fibrocystic disease 30 out of 55 presented with pain in breast, 3 cases presented with nipple discharge and one case presented with nipple retraction. Though we excluded malignant breast lesion in present study, we found that out of 68 malignancies, 30 cases showed association with proliferative lesions like epitheliosis and apocrine metaplasia (21) and sclerosing adenosis (9). Amongst Inflammatory lesions, major group comprised of breast abscess (25 /89) followed by granulomatous lobular mastitis (24 /89). Out of 24 cases of granulomatous lobular mastitis, 6 were associated with duct ectasia and one was associated with fibrocystic disease of the breast. Miscellaneous group included 5 cases of galactocele.

Graph 1: Distribution of non- neoplastic lesions of female breast (Total 202 cases)

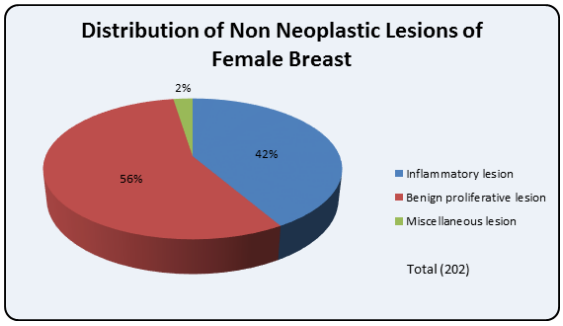


Table 1: Distribution of benign proliferative lesions in non-neoplastic lesions of female breast (Total 113 cases)

Sr. No	Type of lesion	No of cases	Percentage of benign Proliferative lesions
1	Fibrocystic disease	55	48.67
2	Fibrous disease	15	13.27
3	Sclerosing adenosis	29	25.66
4	Blunt duct adenosis	14	12.39

Table 2: Distribution of cases showing epitheliosis in benign proliferative lesions

Sr. No	Type of lesion	Epitheliosis			
		Mild	Moderate	Severe	Atypical
1	Fibrocystic disease	20	4	1	1
2	Sclerosing adenosis	6	6	_	
3	Fibrous disease	3	1	_	

Discussion

In present study, 113 cases belonging to benign proliferative lesions comprised 56% proliferative lesions amongst noneoplastic lesions which is higher as compared to kulkarni et al[3] who reported 24.1% incidence of benign proliferative lesions. Major group comprised of fibrocystic disease 48.67% followed by sclerosing adenosis.

Fibrocystic disease In present study, we encountered 48.67% of fibrocysic disease which is lower as compared to kulkarni et al[3] who reported 72.72%. We observed maximum number of cases between the ages 31-40 years which is concordance with Echejoh et al[4], Amr et al[5]. Peter Marcuse[6] observed maximum incidence in 4th and 5th decade. Ajao et al[7] reported maximum number of cases in 4th decade. Fibrocystic disease or mammary dysplasia is believed to depend on hormonal imbalance, particularly estrogen predominance over progesterone, seems to play an important role in its development[1]. In present study, all patients presented with lump in breast. Thirty out of 55 patients presented with pain during premenstrual period. Kulkarni et al[3] observed lump as main presenting symptom in most of the benign proliferative breast lesion, which is in concordance with the present study. In present study, apocrine metaplasia was observed in 83.63% of cases, which is in concordance with Bhathal et al[8] who reported it in 84% cases. Karpas et al[9] observed apocrine mataplasia in 60% of cases. We observed epitheliosis in 47.27% of cases, which was mild in 20, moderate in 4 and severe in 1 case. Karpas et al[9] reported incidence of epitheliosis in 35% of cases. Peter Marcuse[6] reported 17.90% incidence of moderate to severe degree of epitheliosis. Three patients of fibrocystic disease gave history of hormonal intake for variable period. They showed moderate to severe degree epitheliosis but no atypia. Fechner[10] in his study discussed that patients taking estrogen or oral contraceptive have similar spectrum of epithelial hyperplasia as in patient not taking hormones. In his another study he reported that patients taking oral contraceptives or hormone had a slightly greater risk of the epithelial hyperplasia; 39% as compared to 32% in patients not taking hormone. Ten cases of fibrocystic disease showed foci of sclerosing adenosis which is in concordance with Malik et al[11] and Echejoh et al[4] who also observed association of fibrocystic disease with foci of sclerosing adenosis. In present study, 1 case of fibrocystic disease was associated with atypical ductal hyperplasia. The atypical proliferation occurs most frequently in the post menopausal period. This is when serum oestrogen wanes, perhaps explaining the atypia[12]. Atypia which is considered to carry two to four fold risk for developing breast cancer[13,14]. Karpas et al [9] reported that there is relative increase in proliferative change in breast with malignant lesions. He stated that there is a relationship between the rare form of fibrocystic disease showing atypical epithelial hyperplasia and cancer. In present study, one case of fibrocystic disease was associated with intraductal carcinoma. As this was our selective study, we observed less incidence of association of carcinoma.

Sclerosing adenosis In the present study, the incidence of sclerosing adenosis was (25.66%) comparable to kulkarni et al[3] who reported it as 27% amongst the nonneoplastic lesions. As sclerosing adenosis is difficult to define, its incidence in different studies may differ according to the criteria adopted. So incidence of sclerosing adenosis is variable in different studies. In present study maximum number of cases was found in 21-30 years of age group, while Amr et al[5] reported maximum incidence in 21-64 years of age group.

Fibrous disease of the breast Minkowitz et al[12] observed maximum number of cases in 25-40 years of age while Amr et al[5] found maximum age incidence in 17-47 years of age group. Minkowitz et al[15] and Puente et al[16] recognized fibrosis of the breast as a distinct clinicopathological entity. Other authors consider it as a variation in normal involution of breast. We encountered 15 cases of fibrous disease of breast, mainly in 3rd decade of life. Typically lesion affect young female with voluminous breast and is discovered accidentally by the patient on palpation. It is perceived as a hard disk of variable size.

Blunt duct adenosis In present study, blunt duct adenosis was observed in 12.39% of cases of benign proliferative lesions. Foot and Stewart[17] and Bhathal et al[8] reported it in 26% and 43.4% of cases respectively. We observed maximum cases of blunt duct adenosis in 31-40 years of age group. Foote and Stewart[14] reported maximum incidence in 40-50 years of age.

Breast abscess was seen in 12% of total non-neoplastic lesions of female breast with maximum incidence in the age group of 25-40 years followed by **Granulomatous lobular mastitis** (11.88%) with maximum incidence in the age group of 31-40 years.

Conclusion

In present study, we observed that fibrocystic disease was the most common lesion amongst benign proliferative group followed by sclerosing adenosis which is second common. Epitheliosis, adenosis, apocrine metaplasia and atypical ductal hyperplasia were seen in majority cases of fibrocystic disease. Therefore, all cases of benign proliferative breast disease should be evaluated carefully and followed up to exclude possibility of breast cancer. As BPED are pre-neoplastic conditions most of them had atypical proliferation, an understanding of their histological nature is very important because it may help to identify risk of breast carcinoma.

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