



FNAC STUDY OF MALE BREAST LESIONS

Pathology

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ABSTRACT

Male breast disease comprises a wide spectrum of benign and malignant processes (1). We did an FNAC study 25 cases of male breast lesions over a period of 3 years. The most frequently found cases were of Gynaecomastia (21 cases). Malignancies of the male breast were found in two cases & lipoma was found in two cases. Gynaecomastia was found more in the age group of 11 to 20 years while malignancy was found in the age group of 61 to 70 years. Lipoma was found in the age group of 41 -60 years. Ductal carcinoma was the FNAC finding in both cases of Male breast cancers.

KEYWORDS

Male Breast Lesions, Gynaecomastia, Duct Carcinoma, Lipoma

Introduction

The structure of the male breast is almost identical to that of the female breast, yet both benign and malignant breast neoplasms are rare in males. Until puberty, the male and female breasts are identical, composed of lactiferous ducts and fibro fatty stroma. In males, testosterone levels increase during puberty, causing involution and atrophy of the ducts. In females, both stroma and ducts proliferate and lobular units develop in response to oestrogen and progesterone. The normal adult male breast is composed primarily of a small nipple-areolar complex, subcutaneous adipose tissue, stromal elements, and a few poorly developed ductal structures that end blindly. Cooper ligaments are absent, and terminal ductal lobular unit formation is rare, which explains the rarity of many lesions such as cysts, fibroadenomas, phyllodes tumours, and lobular neoplasia. Most lesions in the male breast are of ductal origin⁽²⁾.

Aims and Objectives

1. To diagnose the pathology of male breast lesions.
2. To grade the lesions cytologically.
3. To compare the cytologic diagnosis with the histopathological diagnosis

Materials and Methods

The present study was carried out in a tertiary care institution over a period of 3 years. The study comprised of 25 cases of benign breast diseases. The male patients of benign breast diseases attending the surgical and genetic OPD were included in this study. Their Clinical History, Symptomatology, General, Systemic and Local examination findings were noted down in a pre-validated proforma.

Method

FNAC procedure was explained to the patients in their local language and written consent was taken.

FNAC of these breast lesions were done by the standard technique. Needle contents were smeared over the glass slides. The smears of the aspirated material were made. The slides were carefully labeled, few slides were air dried. Slides for H & E and PAP smear were immediately put into fixative. The air dried smears were stained with MCG stain directly. The slides were mounted in DPX medium and examined under the microscope. Cytomorphologic features of the smears were studied in detail. The surgical specimens were sectioned. Paraffin blocks of the sections were made. Slides of the paraffin blocks were made and stained with haematoxylin and eosin stain. FNAC results were compared with histopathological diagnosis.

The findings were studied under the following parameters

1. Age wise distribution - Gynaecomastia was found more in the age group of 11 to 20 years (16 cases – 84%), while malignancy was found in the age group of 61 to 70 years.(2 cases – 8%). Lipoma was found in the age group of 41 -60 years (2 cases – 8%).
2. Quadrant wise distribution – The maximum cases of male breast lesions were seen in the upper inner quadrant (13 cases – 52%). The cases in the other quadrants were 06 (24%) in the upper outer

quadrant, 02 cases (8%) in the lower inner quadrant and 04 cases (16%) in the lower outer quadrant

3. Side wise distribution – Most of the cases of Gynaecomastia were observed to be present bilaterally (15 cases – 60%). Unilateral Gynaecomastia was seen in 06 cases (24%). The lipomas were one case on each side. Also similar findings were seen in case of the ductal carcinoma.
4. Cytomorphologic features - The most frequently found cases were of Gynaecomastia (21 cases – 84%). Malignancies of the male breast were found in two cases (8%) & lipoma was found in two (8%) cases.
5. Cytologic and Histologic Correlation – Histologic correlation could be done with 17 cases of Gynaecomastia and both the cases of ductal carcinoma.

Table 1 showing the distribution of cases in the Male breast lesions in our study.

Sr. No	Age	Quadrant	Side	Cytomorphologic	Histologic
MB1	12	UIQ	Bilateral	Gynaecomastia	Gynaecomastia
MB2	63	UOQ	Left	Ductal carcinoma	Ductal carcinoma
MB3	14	UIQ	Bilateral	Gynaecomastia	Gynaecomastia
MB4	13	LOQ	Left	Gynaecomastia	Gynaecomastia
MB5	15	UIQ	Bilateral	Gynaecomastia	Gynaecomastia
MB6	51	UOQ	Left	Lipoma	Lipoma
MB7	17	UIQ	Bilateral	Gynaecomastia	Gynaecomastia
MB8	22	UIQ	Left	Gynaecomastia	Gynaecomastia
MB9	27	LOQ	Bilateral	Gynaecomastia	Gynaecomastia
MB10	18	LOQ	Bilateral	Gynaecomastia	Gynaecomastia
MB11	16	LOQ	Bilateral	Gynaecomastia	Gynaecomastia
MB12	58	LIQ	Left	Gynaecomastia	Gynaecomastia
MB13	64	UIQ	Right	Ductal carcinoma	Ductal carcinoma
MB14	14	UIQ	Bilateral	Gynaecomastia	Gynaecomastia
MB15	63	UOQ	Bilateral	Gynaecomastia	Gynaecomastia
MB16	14	UOQ	Right	Gynaecomastia	Gynaecomastia
MB17	14	UIQ	Bilateral	Gynaecomastia	Gynaecomastia
MB18	18	UIQ	Bilateral	Gynaecomastia	Gynaecomastia
MB19	16	UIQ	Bilateral	Gynaecomastia	Gynaecomastia
MB20	13	UIQ	Right	Gynaecomastia	Gynaecomastia
MB21	50	UIQ	Right	Lipoma	Lipoma
MB22	20	LIQ	Bilateral	Gynaecomastia	Gynaecomastia
MB23	18	UOQ	Bilateral	Gynaecomastia	Gynaecomastia
MB24	59	UOQ	Left	Gynaecomastia	Gynaecomastia
MB25	16	UIQ	Bilateral	Gynaecomastia	Gynaecomastia

Discussion

Normal male breast anatomy

Until puberty, the male and female breasts are identical, composed of fibrofatty tissue and ducts lined by a single layer of epithelial cells with

an underlying layer of myo-epithelium⁽³⁾. During puberty, testosterone levels increase in males, causing involution and atrophy of the ducts⁽⁴⁾. As a result, the normal adult male breast is primarily composed of subcutaneous fat, stromal elements, a small nipple-areolar complex, and an underlying, poorly developed ductal system that ends blindly. The presence of terminal duct lobular units is rare and Cooper ligaments are absent^(5,6). This is distinctly different from the female breast, in which ducts, stroma, and glandular tissue predominate^(4,7,8).

Gynaecomastia

Gynaecomastia is the most common benign condition of the male breast and the most common cause of a palpable mass^(9,10). It is very common in newborns and is typically seen in peripubertal boys and men over 50 years of age^(8,9). The etiology is thought to be an imbalance in the levels of estrogen relative to androgen. Elevated levels of estrogen in males can be due to numerous etiologies, including obesity, use of exogenous hormones/drugs, systemic diseases, gonadal failure, and estrogen-secreting neoplasms, among others⁽¹¹⁾.

In our study we found Gynaecomastia as the most common cause of male breast lesions (21 cases i.e. 84%). The cytological findings seen were numerous large clusters of ductal cells and bits of stroma in the background. The clusters are composed of tightly packed cuboidal ductal cells, with small myoepithelial cells attached to the periphery.

Lipoma

Lipoma is the most common benign tumor of the male breast^(4,12). Clinically, it presents as a palpable, soft, subcutaneous, mobile mass that is painless and slow growing. It can occur as a single lesion or multiple lesions. In our study we found 2 cases of lipoma. More than 6 clusters of epithelial cells are required for adequacy of samples. This criteria is not applicable for adequacy of sample in cases of breast masses that may be comprised of non epithelial structures such as lipoma, pseudoangiomatous hyperplasia of mammary stroma^(13,14), and therefore aspirate of lipoma consisting nearly of fat was considered adequate for diagnosis. In the present study we found lipoma in 2 out of the 25 cases (8%) of male breast lesions in the age group of 41 to 60 years

Male breast cancer is an uncommon disease. It accounts for only 0.7% of all breast cancers^(15,16). The mean age at diagnosis is 67 years, in comparison with 62 years for women^(15,17). Less than 6% of cases are seen in men under the age of 40 years⁽⁴⁾.

Invasive Ductal Carcinoma - The predominant histology in primary male breast cancer is invasive ductal carcinoma of no special type, also known as "not otherwise specified," which accounts for approximately 85% of cases. Ductal carcinoma in situ is present in up to one-half of the cases^(12,18).

Papillary carcinoma is the second most common subtype of breast carcinoma in men, accounting for 2.6% of cases⁽¹⁸⁾. It is twice as likely to occur in men as in women^(12,19,20).

Invasive lobular carcinoma is a rare histologic subtype in men, accounting for only 1.5% of cases⁽¹⁸⁾.

Lymphoma of the breast may be primary or secondary. Most cases are secondary and related to non-Hodgkin B-cell lymphomas^(7,12,21).

In our study we found ductal carcinoma in both the 2 cases of malignant breast lesions i.e., 8% of our cases.

The other types of male breast lesions mentioned in literature are⁽²²⁾.

1. Pseudogynaecomastia
2. Posttraumatic Hematoma/Fat Necrosis
3. Epidermal Inclusion Cyst.

Summary

The study of male breast lesions was done over a period of 3 years were 25 cases of male breast lesions were studied.

The most common cytological finding was Gynaecomastia. Lipoma was found in 2 cases. Duct carcinoma was seen in both our cases of malignant male breast lesions.

The most common age group in which Gynaecomastia was reported was 11 – 20 years.

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