



A HISTOPATHOLOGICAL STUDY OF TUMOUR AND NON-TUMOUR BREAST LESIONS

Pathology

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ABSTRACT

In India breast cancer is 2nd most common cancer after cervical cancer. By 2020 the incidence of breast cancer in India is expected to double. More than half of all women will develop some form of benign breast disease after age 20. They have great risk for breast cancer, only a small fraction of those diagnosed ever develop malignant disease. This study is done to understand the most common histopathological diagnosis of breast in this part of the region.

KEYWORDS

Histo-pathology, Breast, Benign, Malignant

INTRODUCTION:

The breast is one of two prominences located on the upper ventral region of the torso of primates. In females, it serves as the mammary gland, which produces and secretes milk to feed infants.^{1,2} Both females and males develop breasts from the same embryological tissues. At puberty, estrogens, in conjunction with growth hormone, cause breast development in female humans and to a much lesser extent in other primates. Breast development in other primate females generally only occurs with pregnancy¹⁻⁷.

Subcutaneous fat covers and envelops a network of ducts that converge on the nipple, and these tissues give the breast its size and shape. At the ends of the ducts are lobules, or clusters of alveoli, where milk is produced and stored in response to hormonal signals. During pregnancy, the breast responds to a complex interaction of hormones, including estrogens, progesterone, and prolactin, that mediate the completion of its development, namely lobuloalveolar maturation, in preparation of lactation and breastfeeding.

Along with their major function in providing nutrition for infants, female breasts have social and sexual characteristics. Breasts have been featured in notable ancient and modern sculpture, art, and photography. They can figure prominently in a woman's perception of her body and sexual attractiveness. A number of Western cultures associate breasts with sexuality and tend to regard bare breasts in public as immodest or indecent. Breasts, especially the nipples, are an erogenous zone.

Morphologically the breast is tear-shaped. The superficial tissue layer (superficial fascia) is separated from the skin by 0.5–2.5 cm of subcutaneous fat (adipose tissue). The suspensory Cooper's ligaments are fibrous-tissue prolongations that radiate from the superficial fascia to the skin envelope. The female adult breast contains 14–18 irregular lactiferous lobes that converge at the nipple. The 2.0–4.5 mm milk ducts are immediately surrounded with dense connective tissue that support the glands. Milk exits the breast through the nipple, which is surrounded by a pigmented area of skin called the areola. The size of the areola can vary widely among women. The areola contains modified sweat glands known as Montgomery's glands. These glands secrete oily fluid that lubricate and protect the nipple during breastfeeding. Volatile compounds in these secretions may also serve as an olfactory stimulus for the newborn's appetite^{1,2,3}. Breast cancer is cancer that develops from breast tissue. Signs of breast cancer may include a lump in the breast, a change in breast shape, dimpling of the skin, fluid coming from the nipple, a newly inverted nipple, or a red or scaly patch of skin. In those with distant spread of the disease, there may be bone pain, swollen lymph nodes, shortness of breath, or yellow skin⁴⁻⁷.

We have studied and analysed various neoplastic and nonneoplastic breast lesions from the specimens received in histopathology.

AIMS AND OBJECTIVES:

To study the histopathologically tumour and non-tumour breast lesions.

MATERIALS AND METHODS:

The study was done in 90 patients.

The study was done in the Department of Pathology, Prakash Institute of medical Sciences and Research, Sangali.

The study was done from December 2015 to November 2018.

Inclusion Criteria

1. Only Confirmed cases of breast lesions which are primarily affecting the organs were considered.

Exclusion Criteria

1. Metastatic lesions which was not from breast primarily were not considered.

Results:

Table 1: Mean Age of the Population

Sample Size	Mean Age	Standard Deviation
90	46.84 years	± 9.64 years

Table 3: Histo-pathological Study:

Histo-pathology	Frequency
Acute mastitis/abscess	46
Chronic non-specific Mastitis	02
Ductal ectasia	01
Granulomatous mastitis	01
Ductal Epithelial Hyperplasia	02
Sclerosing Adenosis	01
Fibroadenoma	21
Tubular Adenoma	01
Lactating Adenoma	01
Invasive Ductal Carcinoma	02
Paget's Disease	01
Invasive Lobular Carcinoma	03
Medullary Carcinoma	01
Papillary Carcinoma	01
Metaplastic Carcinoma	06

Table 4: Significance of Fibroadenoma and other metastatic lesions with Statistics available at the District Hospital

Sample Size	X-Value	P-Value (>0.05)
37	0.476	0.013

DISCUSSION:

Breast cancer is cancer that develops from breast tissue. Signs of breast cancer may include a lump in the breast, a change in breast shape, dimpling of the skin, fluid coming from the nipple, a newly inverted nipple, or a red or scaly patch of skin. In those with distant spread of the disease, there may be bone pain, swollen lymph nodes, shortness of breath, or yellow skin.

Risk factors for developing breast cancer include being female, obesity, lack of physical exercise, drinking alcohol, hormone replacement therapy during menopause, ionizing radiation, early age at first menstruation, having children late or not at all, older age, prior history of breast cancer, and family history. About 5–10% of cases are

due to genes inherited from a person's parents, including BRCA1 and BRCA2 among others.^[1] Breast cancer most commonly develops in cells from the lining of milk ducts and the lobules that supply the ducts with milk. Cancers developing from the ducts are known as ductal carcinomas, while those developing from lobules are known as lobular carcinomas. In addition, there are more than 18 other sub-types of breast cancer. Some cancers, such as ductal carcinoma in situ, develop from pre-invasive lesions. The diagnosis of breast cancer is confirmed by taking a biopsy of the concerning lump.^[1] Once the diagnosis is made, further tests are done to determine if the cancer has spread beyond the breast and which treatments are most likely to be effective.

We have studied 90 cases of breast lesions histopathologically, which has given us the information as neoplastic lesions. They were more common than non-neoplastic lesions. The benign tumours were most frequent in 2nd, 3rd and 4th decades, malignant tumours were seen beyond 4th decades. All the tumours involved upper outer quadrant most frequently. Fibroadenoma was the most common benign tumour. Metaplastic Carcinoma was the most common malignant tumour. Mastitis was the most common nonneoplastic lesion. Histopathological study plays very important role in the diagnosis of breast lesions and hence in treatment and prognosis. Today many advanced techniques like mammography, USG, and increased use of fine needle aspiration cytology have greatly assisted the preoperative evaluation of breast lesions. Still the histopathological examination is the gold standard for differentiation between benign and malignant lesions. In India breast cancer is 2nd most common cancer after cervical cancer. By 2020 the incidence of breast cancer in India is expected to double. More than half of all women will develop some form of benign breast disease after age 20. They have great risk for breast cancer, only a small fraction of those diagnosed ever develop malignant disease.^[8] Recognition of different neoplastic and nonneoplastic breast lesions is important for the differential diagnosis from malignant lesions and ultimately for the management of the patients with breast disease.

CONCLUSION:

Considering histopathological diagnosis as the gold standard, we found that the sensitivity and specificity of clinical diagnosis to detect a benign case and a malignant case was very high.

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