



RAJIV GANDHI UNIVERSITY OF HEALTH SCIENCES, BANGALORE,
KARNATAKA

**“HISTOMORPHOLOGICAL STUDY OF
BENIGN BREAST LESIONS”**

By
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Dissertation submitted to the
Rajiv Gandhi University of Health Sciences, Karnataka, Bangalore

In partial fulfillment
of the requirements for the degree of

**DOCTOR OF MEDICINE
IN
PATHOLOGY**

Under the guidance of
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2010

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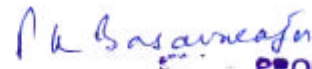
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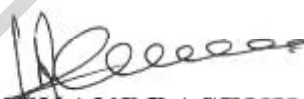
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Place : DAVANGERE


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LIST OF ABBREVIATIONS

ADH	–	Atypical ductal hyperplasia
ANDI	–	Aberration of normal development and involution
Bening PT	–	Benign phyllodes tumor
DCIS	–	Ductal carcinoma in situ
FA	–	Fibroadenoma
FCD	–	Fibrocystic disease
HPF	–	High power field
IC	–	Intracanalicular
IDP	–	Intra ductal papilloma
LCIS	–	Lobular carcinoma in situ
LPF	–	Low power field
NFA	–	Non fibroadenoma (other than fibroadenoma)
PAS	–	Periodic acid schiff
PC	–	Pericanalicular
TB	–	Tuberculosis
TDLU	–	Terminal ductal lobular unit
UDH	–	Usual ductal hyperplasia
WHO	–	World health organization

ABSTRACT

Background:

Benign breast lesions are more common than malignant tumors. Hence recognizing them is important from the viewpoints of therapy and prognosis.

Methodology :

The materials for study comprises of resected specimens of breast lesions received in pathology department JJM Medical College Davanagere during July 2007 to June 2009.

Results :

Total of 112 cases of benign breast lesions were recorded. The most common lesions were fibroadenoma comprising 75% followed by sclerosing adenosis 8.9%, fibrocystic disease 6.3%, benign phyllodes tumor 3.6%, chronic mastitis 1.8%, and 0.9% each of tubular adenoma, fat necrosis, mammary duct ectasia, lipoma and gynecomastia.

Majority of benign breast lesions occurred in 2nd decade and 3rd decade.

Conclusion :

Benign breast lesions were common. The most frequently encountered breast lesions were fibroadenomas. So recognizing them is important for therapy and prognosis.

Keywords : *Benign breast lesions, fibroadenoma.*

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Introduction

INTRODUCTION

Benign breast lesions encompass a wide range of lesions including inflammatory, neoplastic and aberrant hormonal response disorders. Increasing awareness of breast cancer (the commonest female malignancy world wide) has stimulated profound interest in benign breast lesions since certain epithelial benign breast diseases have been associated with malignant transformation.¹

The vast majority of the lesions that occur in the breast are benign. Much concern is given to malignant lesions of the breast because breast cancer is the most common malignancy in women in Western countries; however benign lesions of the breast are the more frequent than malignant ones.²

The term “benign breast diseases” encompasses a heterogeneous group of lesions that may present a wide range of symptoms or may be detected as incidental microscopic findings. The incidences of benign breast lesions begins to rise during the second decade of life and peaks in the fourth and fifth decades, as opposed to malignant diseases, for which the incidence continues to increase after menopause, although at a less rapid pace.²

For many years, the relationship of benign breast disease to the risk for subsequent carcinoma was controversial. Of the several reasons for the controversy, the most important was past inconsistencies in defining the benign breast diseases, not only in the field of pathology but also in radiologic and clinical practice.³

The present study is undertaken to study the spectrum of histomorphology of benign breast lesions.

PREVIEW



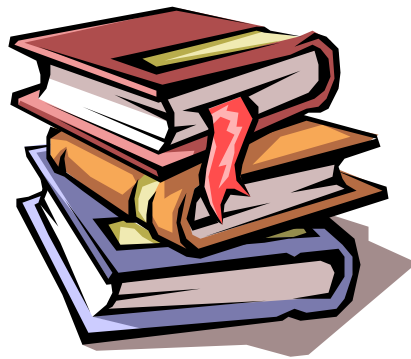
Objectives

OBJECTIVES

- 1) To study the histomorphological features of benign breast lesions.
- 2) To study the age incidence of benign breast lesions.
- 3) To correlate clinical diagnosis with histopathological diagnosis.

PREVIEW

PREVIEW



Review of literature

REVIEW OF LITERATURE

Historical aspects :

Although antiquity implies a review of many centuries, few recent years are included to summarise accomplishment and failures. A historical evaluation provides insight and hope that future improvements will put an end to the controversy over the diagnosis and management of breast cancer.⁴

Diseases of breast attracted medical interest as long ago as 3000 BC. The Edwin Smith surgical papyrus of Egyptian Pyramids age (3000-2500 BC) described several cases of women with tumors of breast. These included tumors that were hard and cool to touch as well as abscesses and inflammations that were warm. It is probable that malignant tumors of the female breast were the first human cancers discovered and differentiated from other non-malignant diseases. The Egyptian surgeons observed that recovery was possible in cases of breast abscess and inflammation but there was little that could be done to remedy 'hard' tumors of the breast.⁵

Leonides, of Alexandrian school in 1st Century was the first to describe that the nipple retraction was an important clinical sign of breast cancer.⁵

In 1560, Ambroise Pare, a French army surgeon recognised the relationship of the breast cancer and its axillary extension.⁵

In 1656, Marcus Aurelius Saverinus, was one of the first surgeons to remove enlarged axillary lymph glands at the time of breast amputation. He advised excision of the benign tumors, because of the possibility of their becoming malignant.⁵

Breast masses specially in young age group are a source of anxiety for the patients and surgeons because of risk of the cancer and the potential cosmetic disfigurement following surgery. Hence recognising them is important from the view point of therapy and prognosis.⁶

In a study conducted in Japan, shown that the prevalence of benign proliferative breast lesions was significantly higher in a series of breast biopsy specimens from Kurume University hospital, Kurume, Japan in 1984-1985 than it was at the same institution one decade earlier. This observation suggests that the prevalence of benign proliferative lesions of the breast, similar to the incidence of breast cancer is increasing in Japanese women.⁷

In one more study done by Khanna et al, documented that out of 1315 lesions studied 807 (61.3%) were benign in nature. Of these benign lesions, 60% were true tumors (fibroadenoma including benign cystosarcoma phyllodes). 15% were mammary dysplasias (fibrocystic disease and sclerosing adenosis), 20% were inflammatory, 1.6% were galactoceles and remaining 2.9% were of miscellaneous origin which include 5 cases of duct papilloma, 6 of breast hypertrophy (4 filarial, 2 nonspecific) 2 cases each of hemangiomas, lobular hyperplasia, epidermal cyst and 1 case each of neurofibroma, lipoma, arteriovenous fistula, hyperadenoma, nevus and hydatid cyst in the breast region.⁶

In one more study conducted in St. Barnabas Medical Center, Livingston, New Jersey, the records of 516 women less than 30 years of age requiring biopsies of the breast were reviewed. As one would expect, carcinoma of the breast was rare in women less than 30 years old. Four patients with carcinoma of the breast were identified during the course. All of the other patients had benign breast disease

consisting of fibrocystic disease, sclerosing adenosis, apocrine metaplasia, focal hyperplasia, benign cystosarcoma phyllodes, inflammatory benign diseases, fibrosis, fat necrosis, focal calcification and diffuse hyperplasia.⁸

In a study conducted in Harlem Hospital Centre, Newfort, the distribution of the 282 breast lesions in 255 patients were studied. Fibroadenoma was the most common lesion and accounted for 34.7% of all lesions and 48% of benign breast lesions. The second and third most common breast lesions were carcinoma and fibrocystic disease comprising 28 and 17% respectively. The other major benign lesions of the breast in order of frequency were intraductal papilloma, sclerosing adenosis, chronic mastitis and fat necrosis. There was one case each of the following rare lesions : Papillomatosis, ductal ectasia, cystosarcoma phyllodes and granular cell tumor.⁹

ANATOMY AND DEVELOPMENT :

Development :

The human breast is first recognizable at about 6 weeks of embryonic development as ectodermal, ridge like bilateral thickenings. By the 9th week of gestation, solid epithelial cords grow from the epidermal layer into the underlying mesenchyme. These solid cellular invaginations eventually form branching primary mammary ducts with lumens. Breast development is rudimentary at birth, although in both male and female neonates the breast bud is responsive to maternal hormones and may be prominent. With age the ducts elongate and branch, a process that accelerates in female at puberty. Under the influence of cyclic estrogen and progesterone, the terminal end buds and connective tissue stroma proliferate, differentiate and remodel to form the adult mammary glands.¹⁰

Gross Anatomy :

The breast lies on the anterior chest wall over the pectoralis major muscle and typically extends from the 2nd to 6th rib in the vertical axis. Breast tissue also projects into the axilla as the tail of Spence. The breast extends laterally over the serratus anterior muscle and inferiorly over the external oblique muscle and the superior rectus sheath. Bundles of dense fibrous connective tissue, the suspending ligaments of Cooper, extend from skin to the pectoralis fascia and provide support to the breast. The only boundary of the breast that is anatomically well defined is the deep surface where it abuts the pectoralis fascia. However despite this macroscopic demarcation, microscopic foci of glandular tissue may extend into and even through the pectoral fascia. The clinical importance of this observation is that even a total mastectomy does not result in the removal of all glandular breast tissue.¹¹

The principal arterial supply to the breast is provided by the internal mammary and lateral thoracic arteries. Branches of the thoracoacromial, intercostal, subcapsular and thoracodorsal arteries make minor contributions to the mammary blood supply. Venous drainage largely follows the arterial system. The most important drainage basin for lymphatic flow from the breast is the axilla, and the axillary lymph nodes receive > 90% of lymph drained. A small portion of lymph drains via internal thoracic and posterior intercostal lymphatics into the internal mammary and posterior intercostal lymph nodes respectively.¹¹

Histology :

Extending posteriorly from the nipple, the large and medium sized ducts, glandular structures and surrounding stroma form approximately 20 interconnected lobes. Within a single lobe the small ducts branch and terminate in glands known as