BENIGN BREAST LESIONS

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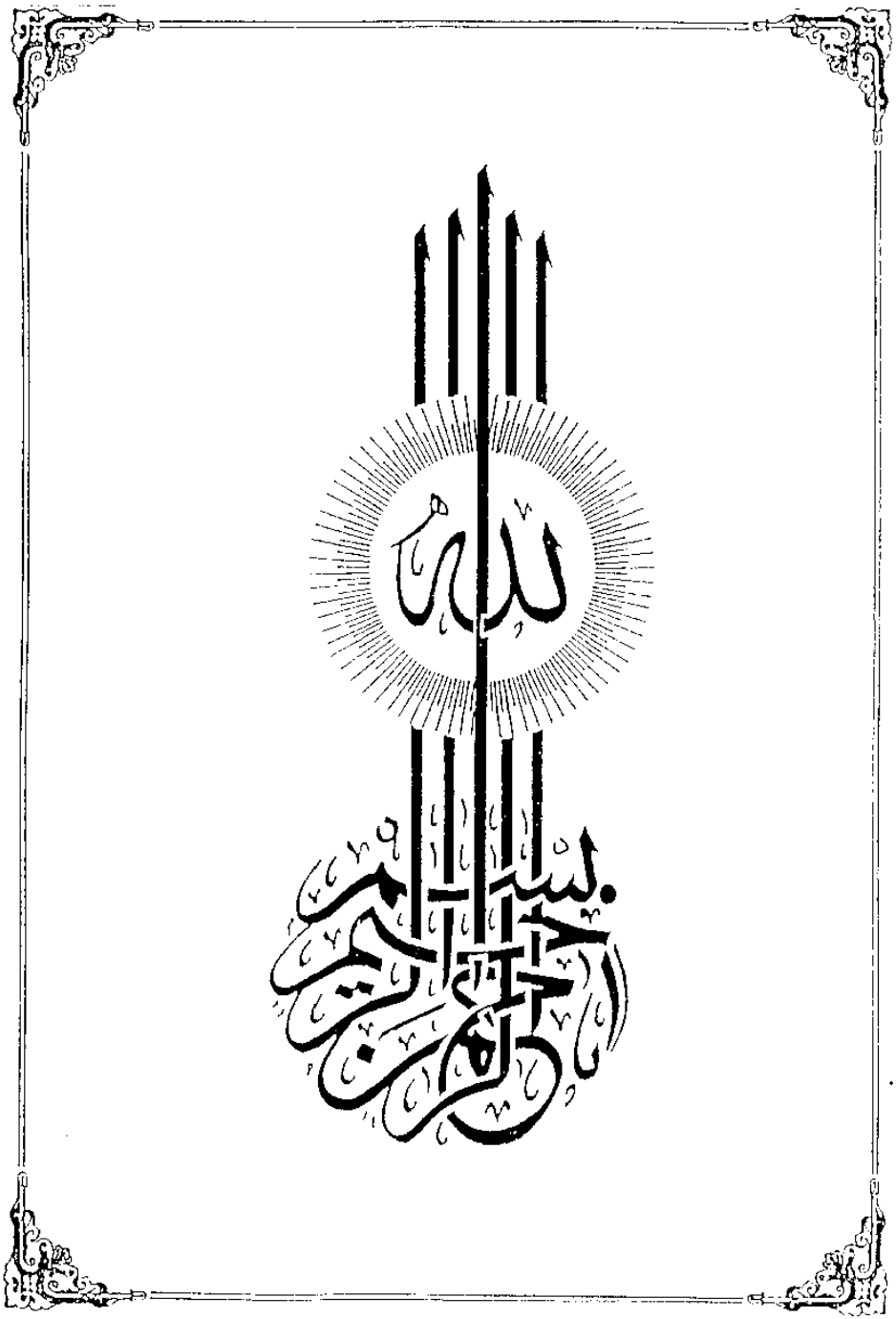
TO MY PARENTS



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INTRODUCTION

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Benign breast lesions are much more common than malignant ones . About eighty per cent of open biopsies yield benign results .(O'Brien , 1992)

The nomenclature of benign breast disease is very confusing this is due to the use of different terms to describe a mixture of physiological and disease process according to a variety of clinical , pathological and aetiological aspects . To sort out this confusion , a new system has been developed and described by the Cardiff breast clinic . It is Known by the acronym ANDI standing for abberations of normal development and involution. (Mann and Russell,1992)

The relationship between benign breast lesions and subsequent breast carcinoma has been the subject of great controversy Many studies has been done , and it is only recently employing careful histopathological review, that a degree of clarity has been achived . The most significant risk of malignancy up to fourfolds , occurs with patients whose biopsies show atypical hyperplasia, amd this is doubled to eight fold if there is also a family history of breast cancer .(Macsween,1992)

Fine needle aspiration of the breast provides an added dimension to the clinical management of palpable breast masses. (Casey et al., 1992)

Recent development of mammographic stereatactic localization devices has created considerable interest in the feasibility of fine-needle aspiration biopsy of non palpable breast lesions. (Phil Evans et al.,1989).

The use of specialized sonographic equipment has allowed improved diagnostic accuracy for breast lesions.This diagnostic method is free of hazards and can be carried out repeatedly . (O'Higgins,1991).

The most important clinical use of breast ultrasound continues to be the differentiation of cystic from solid masses with an accuracy rate of 96% -100% , far exceeding the accuracy of mammography or physical examination .(Bassett et al.,1987)

Thermography , like any other mode of clinical investigations, can not stand alone the debate of accurate diagnosis of breast masses .

There is no single magic tool which solve the puzzle of diagnostic accuracy of breast lump up till now . We are looking forward for more controlled studies to prove the efficacy of thermography in the field of breast surgery(Anous et al.,1992).

Operations for benign breast disease fall into two broad groups .

Those necessary to allow a definitive tissue diagnosis to be made, and those necessary to control inflammatory conditions of the breast . (Hughes ,1986).

The aim of this essay is to review the literature pertaining to the pathology, diagnosis and treatment of various benign lesions affecting the breast.

Anatomy of the Breast

ANATOMY OF THE BREAST

The female breast extend vertically from the second to the sixth rib in the mid clavicular line and from the edge of the sternum to the mid axillary line horizontally .

However the actual extent of the mammary tissue is considerably greater . This fact is of importance to the surgeon attacking carcinoma of the breast . (Last,1984).

About two third of the breast is situated on pectoralis major muscle . The infrolateral part of the breast lies on the lower digitation of the serratus anterior ,the infromedial part of the external oblique and rectus abdominis muscle.(Weatherley, 1980).

Anatomical structure:-

The breast is enveloped between the superficial and deep fascia . The superficial fascia is continuous with the superficial cervical fascia above and the superficial abdominal fascia below .(Skandalakis , et al ., 1983).

Fibrous tissue strands extends from the deep fascia to the skin , these are called ligaments of Astley Cooper and are responsible for the protuberent appearance of young female breast.With age it becomes atrophic and allow the organ to drop.Carcinoma of the breast when involves these ligaments causes dimpling of the skin . In addition if the tumor grows along these bands towards the pectoral fascia , it will form a fixed mass in the breast.(Macvay,1984)

In about 95% of women the superolateral part of the breast is prolonged upwards and laterally towards the axilla ,forming the axillary tail of spence which enters the deep fascia through the hiatus of langer. (Williams,1989)

Architecture of the gland:-

The breast is composed of acini which make up lobules, aggregation of which form the lobes of the gland . The lobes are arranged in a radiating fashion , converging towards the nipple where each lobe is drained by a duct . The main duct number about 15 ,they open separately on the summit of the nipple.Each is dilated into an ampulla beneath the areola .(Last,1984).

The Nipple and Areola:-

The nipple is a cylindrical projection from just below the centre of the anterior surface of the breast . It is located at the 4th. intercostal space ,slightly lateral to the midclavicular line facing slightly outward and downward .

It is slightly pink or light brown in colour , traversed by about 15 ducts which open by minute orificies on its wrinkled tip.

The base of the nipple is encircled by a coloured area of skin , the areola . It is rose-pink in the nulliparous females. During pregnancy it becomes dark brown in colour.

The areola has many minute rounded elevations called the areolar glands of Montgomery which are isolated sebaceous glands for lubrication of the nipple during lactation .(Mac vay,1984).

Arterial Blood Supply of the Breast:-

The blood supply of the mammary gland is abundant . The main vessels enter the breast from its superomedial or superolateral border , few vessles are found inferiorly(Russell, 1983).

There are three main sources of arterial blood supply to the breast :

1) The internal mammary artery:

It is branch of the first part of subclavian artery that passes paralled to the lateral border of the sternum and gives rise to anterior intercostal arteries ,the second,third and fourth of which usually contribute perforating branches to the medial quadrants of the breast and the serrounding skin .(Monsen ,1992).

The mammary branches of the first two of these perforating branches are the largest . The internal mammary branches supply most of the blood to the breast (Skandalakis,et al., 1983).

2) The Lateral thoracic artery:-

It is originating from the second part of axillary artery, deep to the pectoralis minor muscle , and in frequently a main source of blood for the lateral quadrants of the gland.

In the absence of the lateral thoracic artery , the thoracodorsal artery which is the direct continuation of the subscapular artery from the third part of the axillary artery provides blood to the area in addition to supplying the latissimus dorsi muscle .(Monsen,1992).

3) The intercostal arteries:-

The lateral half of the breast may receive branches of the third,fourth and fifth intercostal arteries. (Last,1984).

The thoracoacromial branch of the axillary artery or direct branches from the axillary artery sulpply the upper part of the breast after perforating the pectoral muscles to become superficial. The arteries usually descend vertically towards the nipple .(Mac vay , 1984)

Venous Drainage of the breast :-

The veins require particular attention because they represent potential vascular routes for the dissemination of tumor emboli.

The perforating branches of the internal thoracic vein and the posterior intercostal vein carry the bulk of venous blood from the gland .

The perforating branches from the medial half of the breast carry the greater amount of venous drainage . They enter the internal mammary vein which join the brachiocephalic vein.

Blood in the intercostal veins flows into the azygos system after establishing important segmental connections with the internal vertebral venous plexus of Batson in the epidural space of the vertebral canal.The radicular intervertebral anastomosis are said to promote the transport of mammary tumor emboli directly to the intracranial structures , by passing the right heart and the pulmonary circulation.(Monsen ,1992).

The axillary vein is variable in size and may even be double . It has many inconstant tributaries from the chest wall , pectoral muscles and breast .(Mac vay,1984).

Lumphatic Drainage of the breast

A generous lymphatic plexus drains the skin and the glandular tissue of the breast.The lymphatic vessles empty into two main stations represented by the axillary and internal mammary lymph nodes.

The rich lymphatics of the derms are intimately connected to the deep lymphatics of the underlying fascial planes. From the dermal lymphatics Haagensen emphasizes two points:

1- The main lymphatic flow to the axilla from the whole antrolateral chest.
2- At the level of umbilicus lymphatic tributaries diverge so that chest and upper abdominal wall drain to the axilla and lower abdominal wall drain to the groin.

In the subareolar area there is a particular numerous network of lymphatics that widens peripherally to form a dense circumareolar plexus of Sappey.From this enormus external and internal truncks drain the breast to the axilla.(Haagensen, 1986).

There are two accessory routes of lymphatic drainage from the breast to the nodes at the apex of the axilla.