The Menstrual Pattern Among Women With Benign Breast Disease.

THESIS

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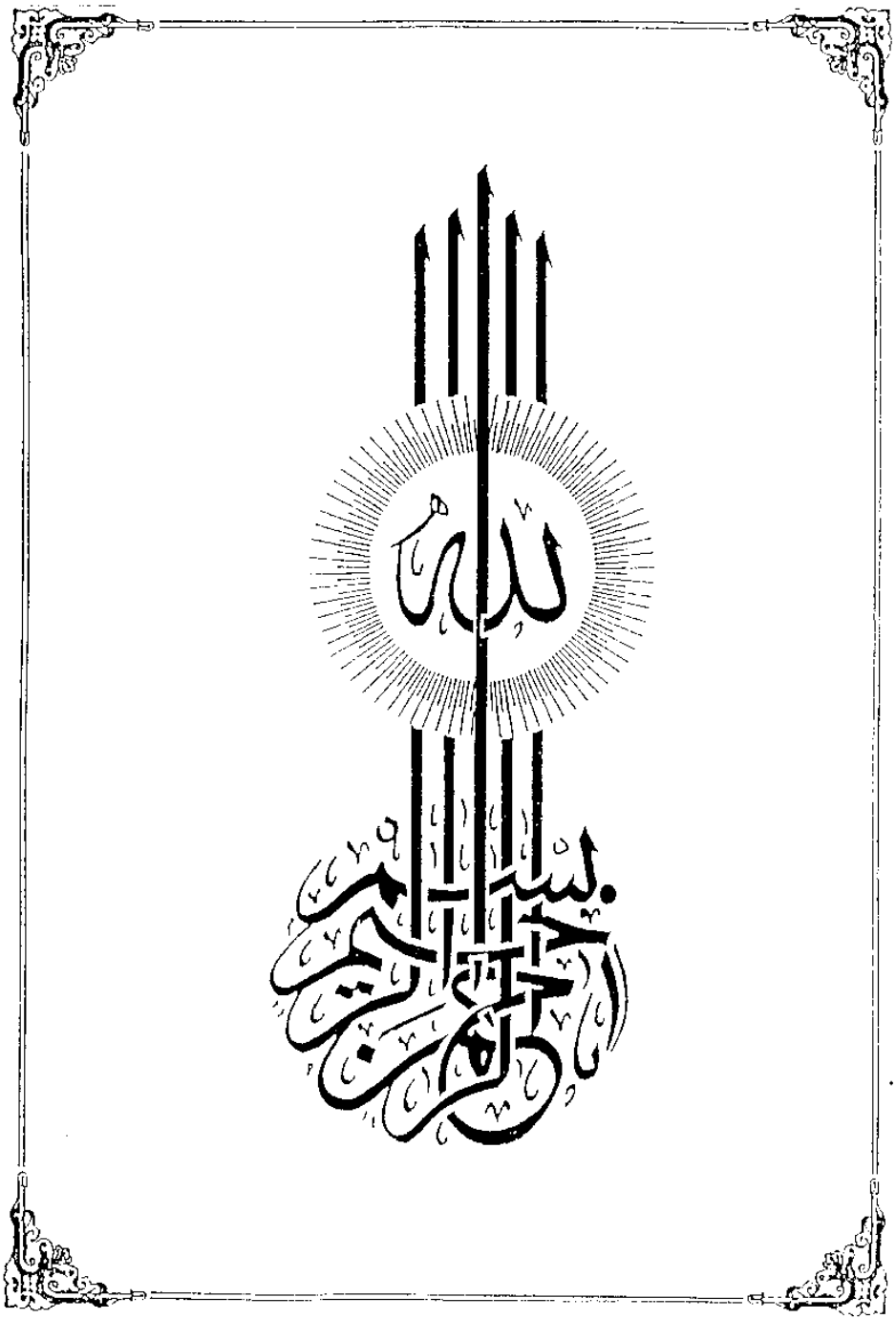

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✱ INTRODUCTION :-

Breast cancer is the most common malignant tumour in women, accounting for 27% of all cancer. Major risk factors include age - 80% of the cancer cases are clinically detected in patients over 40 years of age; prior history of breast cancer; family history, specially first degree relatives, benign breast lesions, particularly of dysplastic type, and precancerous lesions such as laboular neoplasia and multiple papillomatosis (Marchant 1982).

Reported surveys showing that alterations in the hormonal milieu that produce menstrual disturbances, galactorrhoea, or both are frequently encountered among the patients with fibrocystic disease of the breast (Greenblatt 1980). Moreover, Ory et al. (1976) have reported that oral contraceptives lessen the incidence of the fibrocystic disease of the breast, and that hormonal manipulation can effectively reduce the frequency of this disease and, perhaps in turn, the incidence of mammary cancer.

This study reports on the menstrual function among the patients with fibrocystic disease of the breast, through endometrial dating of a midluteal phase endometrial biopsy, as an initial step to identify the possible hormonal disturbances in these patients.

* EMBRYOLOGY OF THE BREAST :-

Rush (1975) has reviewed the embryology of the human breast. The human breast makes its first appearance in the sixth week of embryonic development as an ectodermal thickening extending from the axilla to the groin : a distinct linear elevation which is called the mammary ridge, or milk-line. Lens - shaped thickenings appear along the milk line presaging the sites of developing breasts. In man the caudal two - thirds of the line disappear rapidly, and the pectoral thickening progresses with the ultimate formation of a breast primordium. In the fifth month of embryonic development the human primordial breast develops 15 to 20 solid cords which fan out beneath the skin in the underlying connective tissue.

These primary milk ducts branch, and the ends develop club - shaped dilatations. During the seventh or eighth month the ducts hollow to develop lumina. During this same period the point in the skin corresponding to the nipple develops a small depression. At birth the breast is represented by a slight pit pierced by 15 to 20 openings into the primary milk ducts. The areola is a slight

thickening in the skin which contains a few glands (of Montgomery). Shortly after Birth the nipples become everted, and the areola is distinguished by a slight increase in pigmentation. A few days after birth, bilateral or unilateral enlargement of the breast occurs in 70 percent of infants. In nearly half of the infants the swelling is accompanied by the secretion of a cloudy fluid similar to colostrum, the "withc's milk" of folklore. Histologically these changes are associated with the hypertrophy of the duct system, the appearance of acini, and an increase in the vascularity of the stroma. These alterations are considered as an indirect effect of the high level of maternal estrogens in the infant's circulating blood. Following birth the falling estrogen level stimulates the hypophysis to produce prolactin, resulting in the mammary changes. These changes occure equally in male and female infants and regress spontaneously by the second or third week of life. Attempts to strip the breasts of their milk, as advocated by some superstitiens, provoke the breasts to remain in the secretory state. Hyperplasia of the infant's breast persisting over many months with persistent secretion has resulted from such manipulations.

ANATOMY OF THE BREAST :-

* The breasts (Modified sebaceous glands) lie within the superficial fascia on the venteral surface of the thorax. They extend vertically from the second rib to the sixth or seventh intercostal cartilage and from the lateral side of the sternum to the midaxillary line.

A prolongation of glandular tissue frequently arises from the superolateral quadrant and extends into the axilla. This mass, the axillary tail of Spence, may pass through an opening in the axillary fascia, the foramen of langer. During a physial examination, it may be necessary to differentiate an enlargement of this accessory breast tissue from an axillary tumour (Morehead 1982).

Prior to puberty, the gland remains in an infantial stage of development. At puberty, the breasts attain their characteristic conical or hemispherical shape. The breasts vary considerably in size and shape as compared with general body size ; however, the underlying cause is not well understood. Variations in size is effected by activity of the gland. During pregnancy and lactation, the

breasts increase two or three times in size. Following cessation of lactation, the breasts return to normal size and tend to become more pendulous.

The nipple and areola are the most prominent features of the breast. In nulliparas, these stuctures lie in relation to the fourth rib of fourth intercostal space. The nipple is usually cylindrical or conical in shape, pigmented, and measures approximatly 10-12 mm in height. Minute openings of lactiferous ducts may be seen on its surface. Occasionally, the nipple may be retracted beneath the surface of the breast and projects only on stimulation.

The areola mammae are pigmented circular areas surrounding the nipples. There is a variation in size ranging from 15-60 mm in diameter. Sebaceous glands, the areolar glands of Montogonery, are located within the areolae. These glands aid in lubrication of the nipple during lactation.

The mammary gland proper consists of 15-20 pyramidal - shaped lobes with their apices toward the nipple and the bases forming the periphery of the gland. Each lobe has an excretory duct, which opens individually on the

surface of the nipple. The excretory ducts pass dorsally through the substance of the nipple; they diverge at the base of the nipple and pass in spoke like fashion toward the periphery of the gland. Beneath the areola, the duct increase in diameter, forming the lactiferous sinus. Beyond this dilatation, the duct begins to branch, forming lobules and eventually acini. A single lobe would consist of all the lobules and acini that empty into a single excretory duct.

The secretory, glandular tissue that forms the parenchyma is surrounded totally by fatty connective tissue. The smooth, rounded contour of the breast is due to a layer of adipose tissue, which lies between the glandular tissue and the skin. A small amount of retromammary fat and loose areolar tissue lies between the dorsal surface of the gland and the fascia for pectoralis major and serratus anterior muscles. These retromammary bursae may be foci for retromammary abscesses.

Fibrous bands, cooper's ligaments, interconnect the glandular tissue superficially to the skin, and on the deep aspect of the gland.

They pass throught the retromammary bursae to attach to the fasciae of the muscles. Parenchymal tissue extends from the mammary gland proper along the connective tissue septae intc the retromammary bursae. Occasionally, glandular tissue actually penetrates between muscle fibres of the pectoralis muscle. Thus, these bands are of clinical significance in that they bring about a dimpling of the skin or a fixation of the tumour to the pectoral fascia when it is invaded by cancer cells.

* Vascular Supply :-

* The arterial supply to the breast is very abundant, quite variable and frequently asymmentrical within an individual female. It comes primarily from two sources: Branches from the internal thoracic (internal mammary) artery are large and constant. Mammary branches from the lateral thoracic are the secend major source. Intercostal arteries are considerably (more variable as to the extent of their contribution), at time being essentially nonexistent. Major arterial vessels are not found along the inferior border of the breast. Thus, it is possible to make incisions inferior to the nipple without compromising the blood supply.