REDUCTION MAMMAPLASTY

THESIS

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BY

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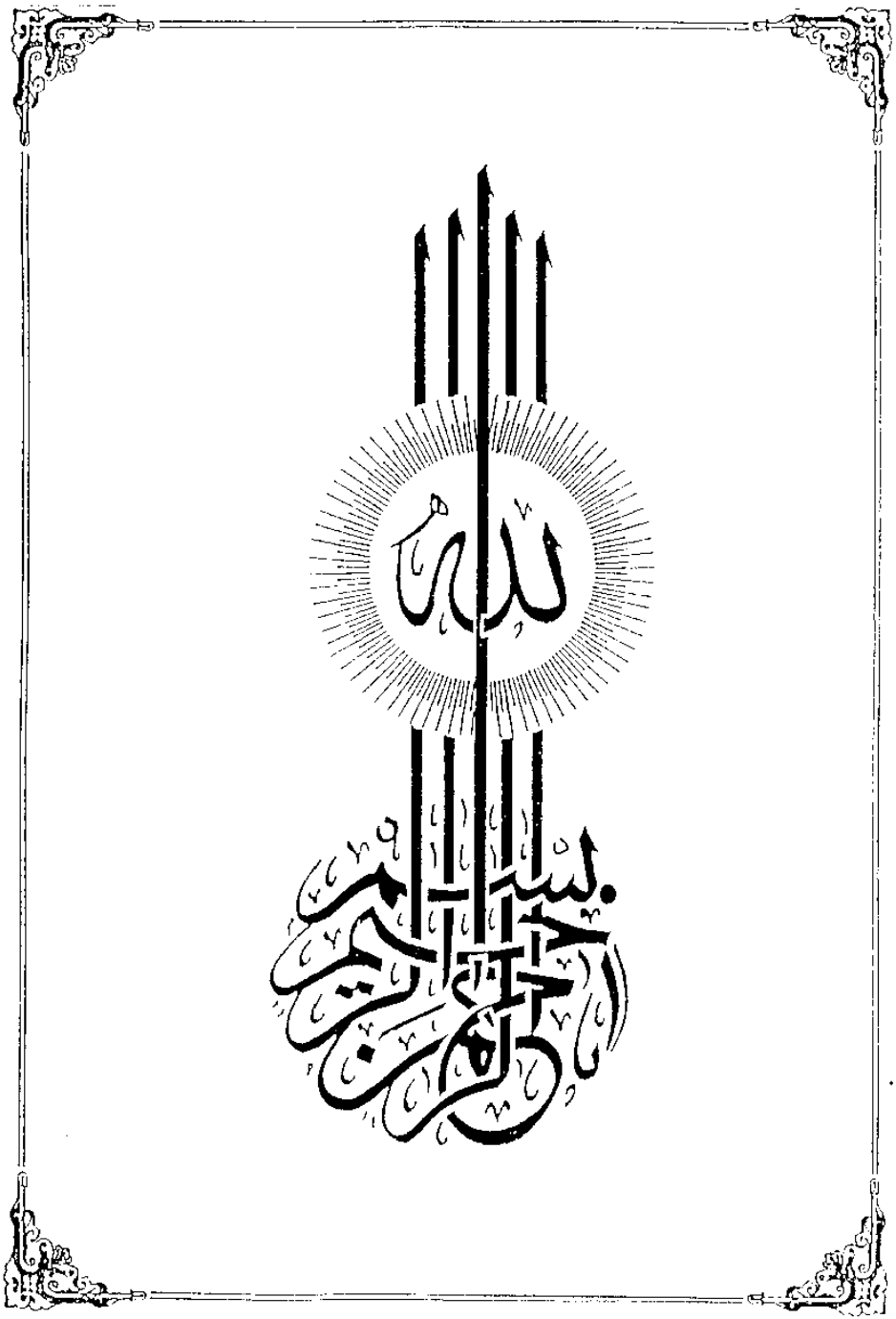

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In addition of being an important functional organ, the female breast must be considered, in the prespective of presentday social consciousness,as a structure of considerable psychologic significance. Since the era of classic Greek art, the female breast has been a symbol of feminity.

Deformities of the size and shape of this structure assume importance above and beyound those of a functioning secondary sexual organ. Correction of these deformities would seem to fulfill a direct wish for increased sexual attractiveness, reflecting a literal rather than a symbolic concern with feminine identity. As in other cosmetic surgery,the patients seem to be seeking the resolution of various conflicts about self-esteem,affecting the total personality.

Since the 1930s Western fashions have endowed the breast with an almost cult-like importance. In recent years, under the influence of the women's rights movement, more importance is given to the breast, as an organ which differe them from men.

Within the shifting ideals of female beauty, the surgeon's decision might seem an almost quantitave one to create a bosom according to his patient's individual preferences, his own aesthetic judgement, and the operative techniques available.

Breast hypertrophy is often experienced as a disfiguring deformity, and the breasts become the focus of a painful highly sexualized self-consciousness, because they cannot be concealed by clothing. In many cases,breast hypertrophy appears very early in adolescence, and is sometimes seen as a family characteristic, in girls whose mothers or grand mothers have notably large breasts.

The patient may accept her condition as an inherited affliction for many years without considering operation.

Once decision is made, however, their postoperative euphoria may be extreme, with a generalized enhancement of self-esteem that goes beyound any physical change. They react as if a long-standing sence of deprivation has been relieved, and an"ideal-self" has been restored.

ANATOMY OF THE BREAST

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Embryology.

About the sixth week of intrauterine life, a pair of longitudinal ectodermal thickening on the anterolateral aspect of the body, begins to appear, it is called "the milk line" and extends from the axilla to the inguinal area (Fig.1).(Arey,1965).

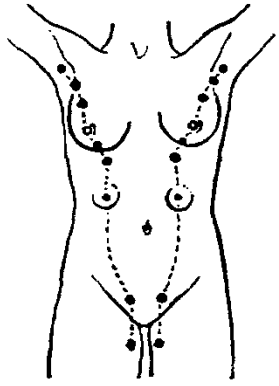

Figure.1
The more common sites of supernumerary mammary glands or nipples along the line of the mammary ridges.(From Arey).

A small portion of each ridge in the pectoral region develops into the definitive anlage of the breast, the remainder disappears.

The ectodermal thickening grows into the underlying mesenchyme, some 20 buds growing out from it. The buds branch and nearer term canalise to form the primitive secretory units, duct-lining cells and myo-epithelial cells.

The fatty connective tissue of the breast develops from the surrounding mesenchyme. The nipple is at first a depressed zone which receives the orifices of the ducts. In the perinatal period it becomes everted by the proliferation of the underlying mesenchyme (Williams and Wendell Smith,1969). (Fig.2).

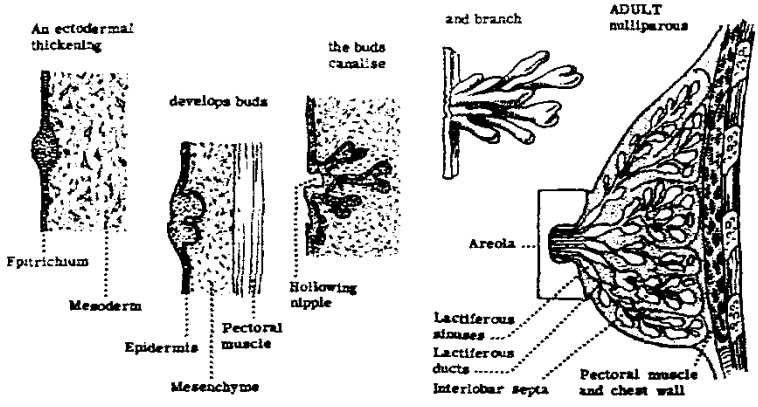

Fig.2
Development of the breast(From Williams & Smith,1969).

At puberty, under the influence of oestrogens, the female breast hypertrophies and the areola develops and becomes lightly pigmented. Oestrogens

primarily stimulate duct growth, while progesterone stimulates lobulo-alveolar growth. During pregnancy both components hyperhophy and the nipple becomes further pigmented.

- Abnormalities of development:

1) Athelia which is abscence of nipple.
2) Polythelia which is supernumerary nipples.
3) Amastia which is abscence of breast.
4) Polymastia which is accessory breasts most commonly along the milk ridge.

In all these anomalies, a familial tendency is sometimes noticed.(Deaver and Mc Farland,1972). These anomalies are more common in females with a predilection for the left side. Associated defects may consist in abscence of the pectoralis major muscle, rib deformities or other ectodermal defects (Haagensen 1971, Gray and Skandalakis,1972).

In 1841, Dr. Alfred Poland, described a syndrome consisting of amastia, defecient pectoralis major muscle with hypoplasia of underlying ribs, intercostal muscles, shorter upper limb with hand anomalies e.g.: syndactly.

. Form,location and structure:

Breast tissue in the female child, or in males of any age is found only beneath the nipple and areola.

In girls approaching puberty it is felt as a firm disc. The breast in a juvenile female may present the form of a cone or hemisphere.

In the mature woman,the well developed breast approximates this form ,a pendulous breast deviates further from the idealized cone. The breast in maturity is considerably flattened in its upper central and its medial parts, while the upper lateral part of the gland is thick and projects as the axillary tail.

The nipple projects from the gland somewhat closer to the lower than the upper border and points laterally with a slight turn upward. "This natural obliquity of the nipple is one of the most beautiful provisions in nature, both for the mother and the child" (Cooper,1840). Because the child rests upon his mother's arm in the most convenient position for sucking,the mouth being directly applied to the nipple which turns outwards to receive it.

In males and young females the nipple is almost invariably located 1 or 2 cm lateral to the mid-clavicular line. Its height is variable; most commonly being in the fourth intercostal space.

With breast development in females, the nipple descends to a variable degree. One nipple may lie one interspace higher than the other according to the embryonic development.

The entire breast is considered to extend from the second or third, to the sixth or eighth ribs, and transversely from the parasternal to the anterior axillary lines, with the axillary process within the axilla.

Aesthetic consideration will vary in different parts of the world and in different times. In Europe and the Americas, breasts of moderate size and high position such as those of the "Venus de Milo" sculpture are often referred to as ideal.

Some glandular tissue is found beyound the apparent external limits of the breast (Cooper,1840). Its extent was graphically shown by Hicken(1938) through the radiologic delineation of the duct system. According to him some ducts extend into the axilla projecting along the brachial nerves and vessels and even

beyound the anterior border of the latissimus dorsi;some ducts extend downwards into the epigastrium and few projecting beyound the midline. Thus, while the main bulk of the gland rests on the pectoralis major muscle, its lower part overlies some of the external oblique and its aponeurosis; the axillary process rests on the serratus anterior m.

The heavy stroma of the breast is an elaboration of the connective tissue of the superficial fascia. Posteriorly the breast is separated from the pectoral fascia by the retromammary space. The space is crossed by loose connective tissue strands which allow a limited degree of movement of the breast. Some of the breast tissue penetrate the space to be embedded in the anterior aspect of the muscle. Fibrous tissue strands connect the deep fascia, over the pectoralis major m., with the overlying skin. These are the ligaments of Astley Cooper. They support the breast tissue, and when atrophic, they allow the organ to droop.

The resting (non-lactating)breast consists mainly of fibrous tissue. Glandular tissue is very sparse and consists almost entirely of ducts; alveoli are difficult to find in a histological sec-

tion. Prior to lactation new alveoli bud off from the ducts into the fibrous tissue and the organ usually enlarges significantly.(Last,1978).

The human mammary gland is a conglomerate of 15 to 25 separate glands,each with its secreting acini grouped into lobules and its own branched duct system. The terminal lactiferous ducts do not communicate with each other, all 15 to 25 opening separatly upon the nipple. The secreting alveoli are lined by cuboid or low columnar cells surrounded by myoepithelial cells. Around the alveoli, lies a dense connective tissue and beyound that abundant adipose tissue.

The ducts are lined by stratified squamous epithelium, surrounded by smooth muscle, which lies along the ducts beneath the areola but surrounds them in a circular fashion in the nipple. As it passes beneath the areola, the duct shows a dilatation the lactiferous sinus, measuring 2 to 4.5 mm in diameter. It narrows at the base of the nipple, and beyound that it dilates once more to form the ampulla, Then narrows again to a diameter of 0.4 to 0.7 mm at its opening on the end of the nipple. (Bloom and Fawcett,1969).