

MASTECTOMY

AN ESSAY

Submitted for Partial Fulfilment
of the Master Degree in
General Surgery

BY

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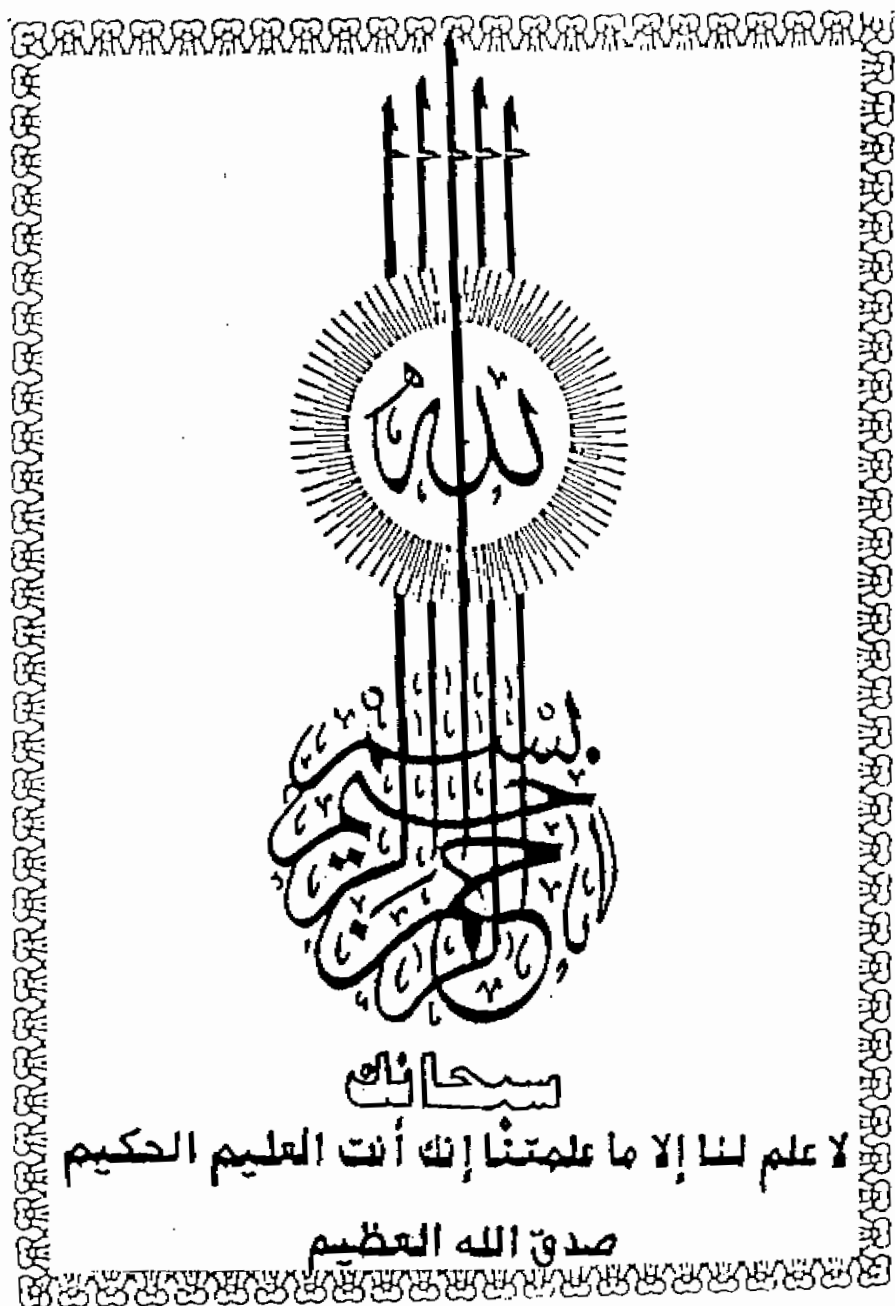
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INTRODUCTION

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Breast cancer is the most common cancer among women all over the world. One of every 11-13 females develops the disease in her life time; constituting about 7 per cent of all women (Gallager, 1975). It accounts for 25 per cent of all malignancies seen at the Gustave-Roussy Cancer Institute in France (Contesso and Omar, 1984). However, the tumour was found to account for 34.8 per cent of all cancers among Egyptian women (Ibrahim et al., 1982).

The present day surgeon is faced with a bewildering number of possible surgical manoeuvres which would include lumpectomy, partial mastectomy, subcutaneous mastectomy total mastectomy, modified radical mastectomy, radical mastectomy and even extended radical mastectomy. However, it must be stated that no definite conclusion can be made regarding the merits of one procedure versus another (Carter, 1976). At present, surgeons and patients alike would probably agree that cure is more important than contour (Leader, 1977).

The present review will presents the different surgical techniques used in mastectomy, merits and dismerits of each of them.

In Western Countries, as reconstructive surgery following mastectomy seemed to have gained considerable interest in the last decade (Coombes et al., 1981),a brief account of different reconstructive procedures will also be included.

ANATOMY

ANATOMY

The breast is a modified sebaceous glands and is located within the superficial fascia of the chest wall (DuPlessis, 1984). the base of the breast extends from the second to the sixth rib vertically and from the lateral margin of the sternum to the midaxillary line transverssly (Sneel, 1981). The gland may extend around the lateral border of pectroalis major through the axillary fascia into the axilla as the axillary tail of Spence. The breast is about 10-12 cm in length craniocaudally and 3-5 cm in thickness (Rehman, 1978).

The female breast has a protubernt conical form and with the advance of age, it become somewhat flattened and pendulous (Haagensen, 1971).

The breast consists of some 15-20 lobes of glandular tissue, each lobe is a compound tubuloalveolar gland (Pansky, 1984) which opens by a separate duct, the lactiferous duct, on the tip of the nipple. Deep to the areola, each lactiferous duct enlarges to form a lactiferous sinus. Each duct become continuous with the secretory tissue, the alveoli. The lobes are bound together by fairly dense connective tissue septa (Hollinshead, 1974).

The mammary gland is ectodermal in origin and therefore is situated between the superficial and deep layers of the superficial fascia. The superficial layer immediately beneath the skin is extremely thin. The deeper layer passes immediately deep to the mammary gland. From this deep layer, connective-tissue extensions may pass across the retromammary space and unite with deep pectoral fascia on the pectoralis major muscle (Rehman, 1978).

The breast is anchored to the overlying skin and underlying pectoral fascia by bands of fibrous tissue called ligaments of Cooper (Du Plessis, 1984). When these ligaments become atrophic they allow the organ to droop, when contracted from fibrosis around a carcinoma they cause dimpling of the skin (Last, 1978). Fig. (1). The muscles forming the floor of the mammary area are the pectoralis major and minor, the serratus anterior, the latissimus dorsi, the subscapularis, the external oblique, and the rectus abdominis (Rehman, 1978).

The nipple is a conical projection which is pink or light brown in colour. The base of the nipple is encircled by a coloured area of skin called the areola, which is rose pink in the nulliparous female and it becomes

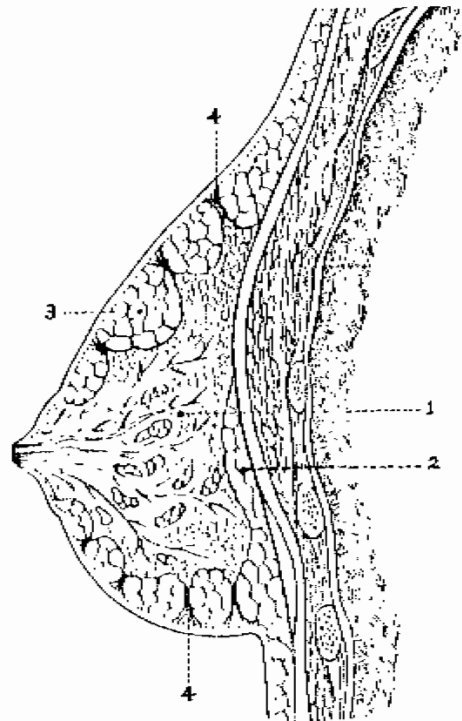


Fig. (1)

Section of normal breast

- 1- Mammary gland.
- 2- Retromammary fat.
- 3- Superficial fat.
- 4- Cooper's ligaments.

larger and darker until it becomes dark brown at the end of pregnancy. There is no fat immediately beneath the skin of the areola and nipple (Warwick and Williams, 1975).

Arterial blood supply:

It is driven from:

- The lateral thoracic artery from the 2nd part of the axillary artery.
- The perforating cutaneous branches of the internal mammary to the 2nd, 3rd, and 4th spaces.
- The lateral branches of the 2nd, 3rd, and 4th intercostal arteries (DuPlessis, 1984).

The second intercostal perforating branch is larger and supplies the gland directly. Often two or three smaller perforating arteries may arise somewhat more laterally, that is, about 3 cm lateral to the main perforating branches (Rehman, 1978). Pectoral branches of the acromio-thoracic artery supply the upper part of the breast (Last, 1978).

Venous drainage:

The superficial veins form an anastomotic circle around the base of the nipple, the circulus venosus.

Veins radiate from the breast and the majority of these veins drain to the internal mammary vein and some to the superficial veins of the lower neck (Batson, 1940). The deep veins drain to axillary, internal mammary and intercostal veins (DuPlessis, 1984). The chief venous drainage is typically toward the axilla (Hollinshead, 1974).

- **Innervation:**

The skin of the upper quadrants of the breast is supplied by the supraclavicular branches of the cervical plexus derived from C₃ and C₄ and the lower quadrants by the lateral cutaneous branches of the thoracic intercostal nerves but the medial cutaneous area is supplied by the anterior perforating cutaneous branches of the intercostal nerves at the lateral border of the sternum (Rehman, 1978). The secreting tissues of the breast are innervated by sympathetic nerves which reach them via the 2nd to the 6th intercostal nerves (DuPlessis, 1984).

- **Lymphatics: Fig. (2)**

The lymphatics of the skin of the breast form a dense network under the areola. This network is continuous with the lymphatics of the skin of the surrounding

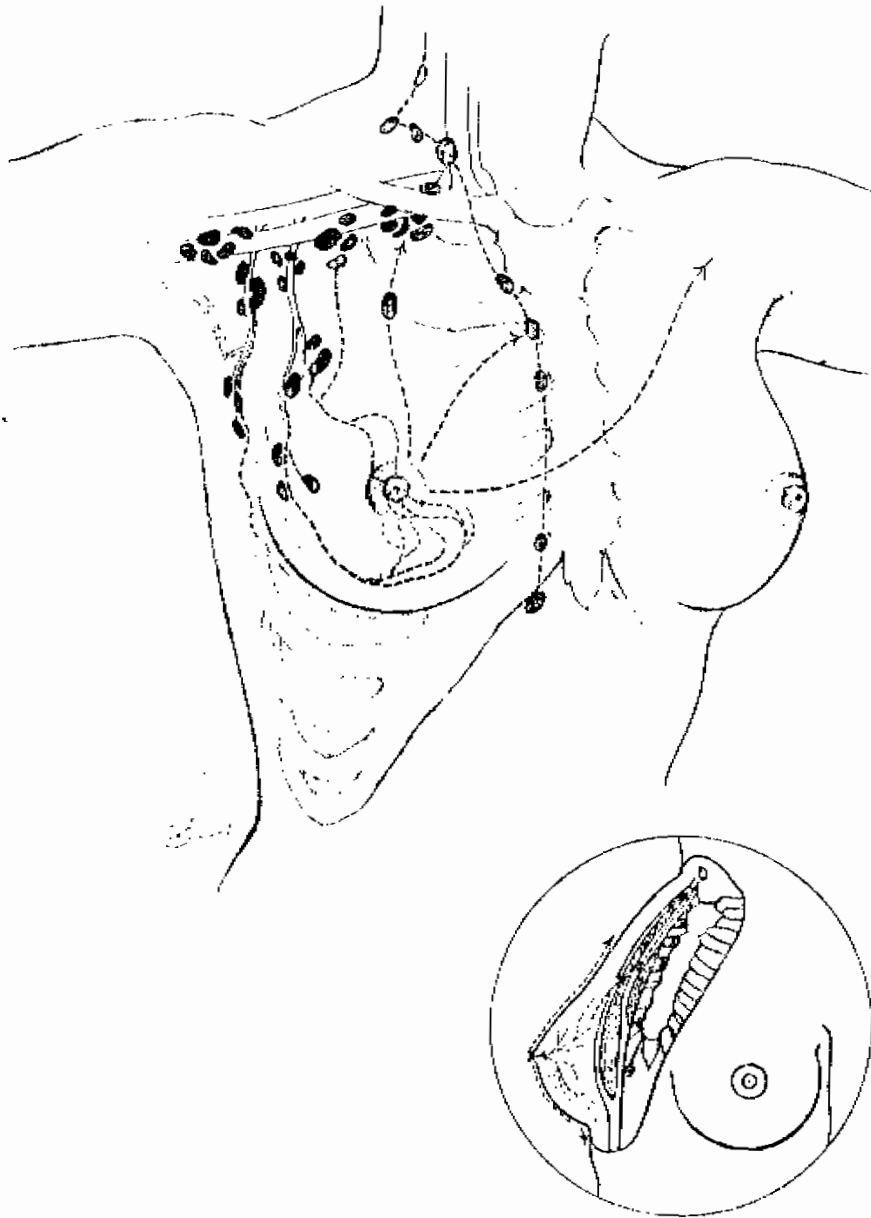


Fig. (2)

Lymphatics of the breast