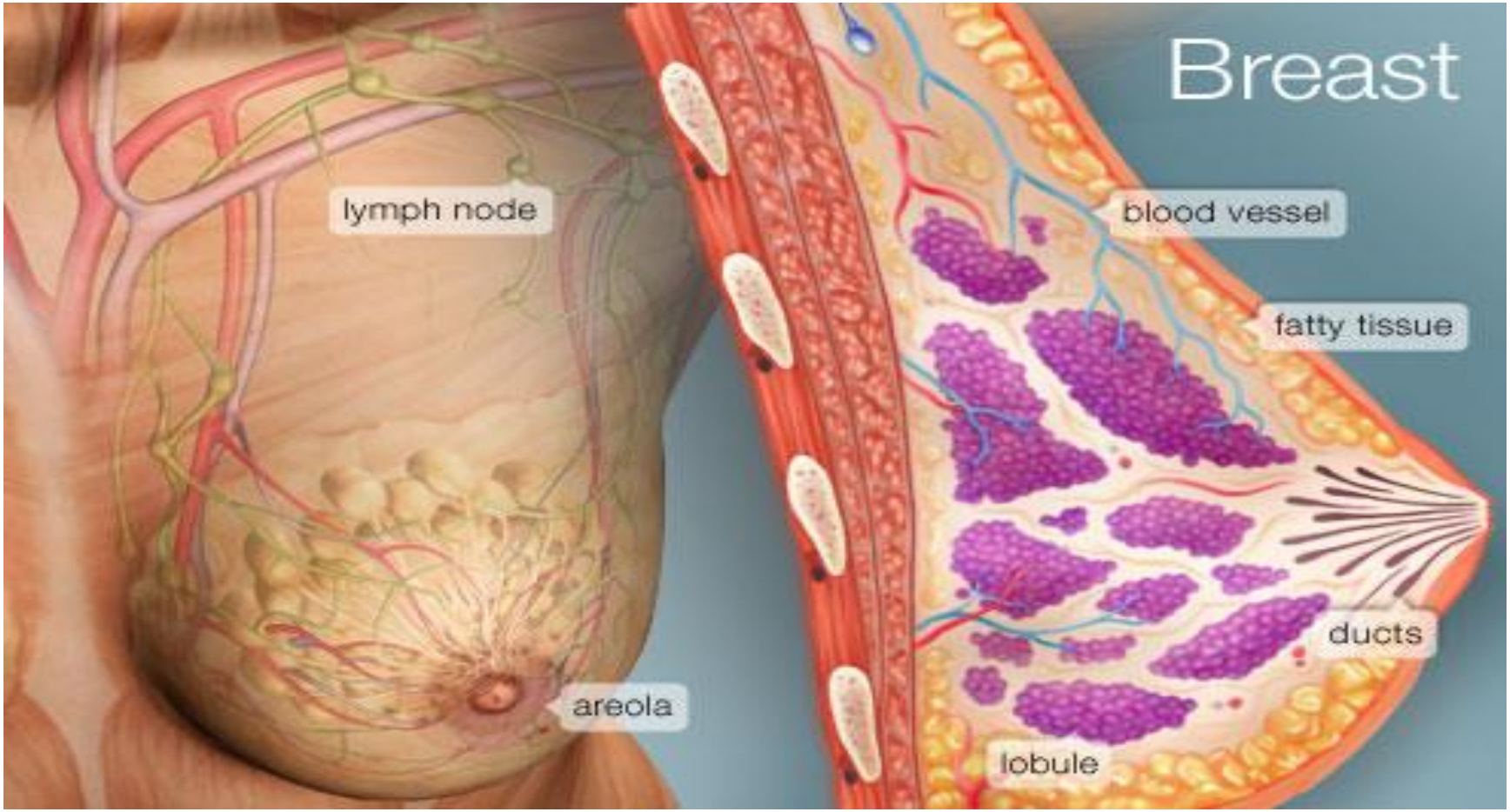
FEMALE BREAST



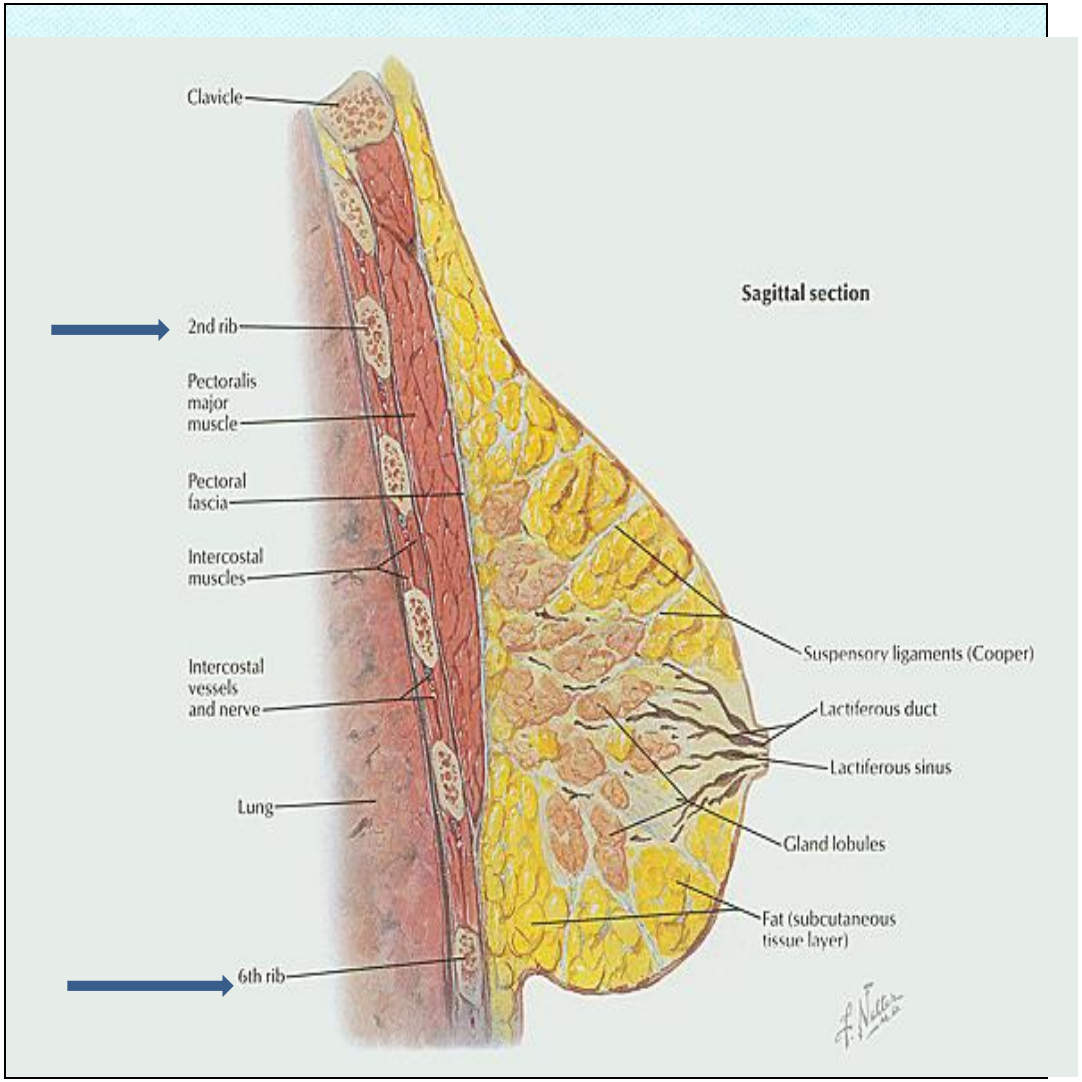
PROF. Saeed Abuel Makarem & **DR.**SANAA AL-SHAARAWI

OBJECTIVES

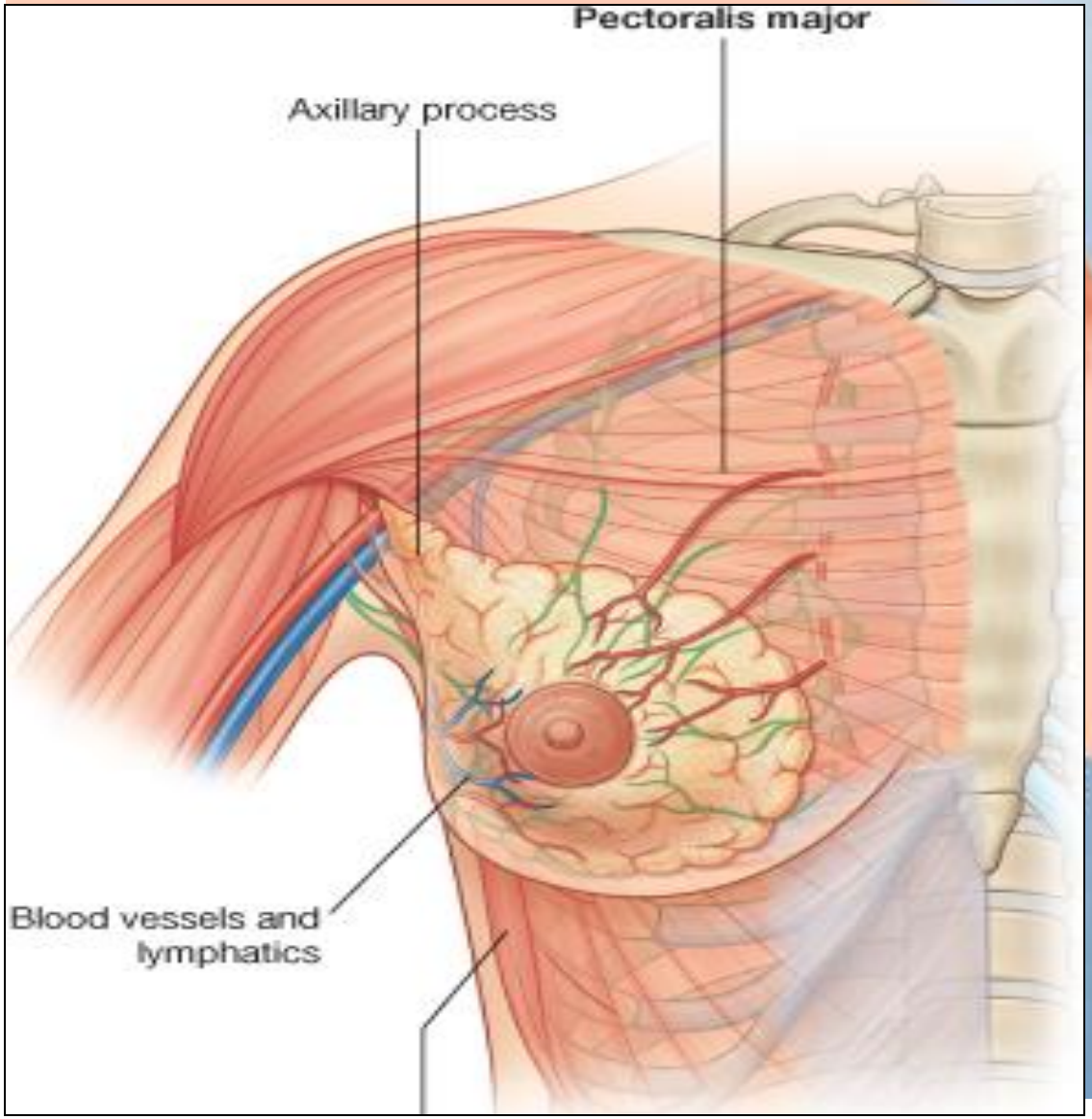
- ***By the end of the lecture, the student should be able to*:**
- Describe the shape and position of the female breast.
- Describe the structure of the mammary gland.
- List the **blood supply** of the female breast.
- Describe the lymphatic drainage of the female breast.
- Describe the applied anatomy in the female breast.

Parts, Shape & position of the Gland

- It is conical in shape.
- It lies in superficial fascia of the front of chest.
- It has a base, apex and tail.
- Its base extends from 2nd to 6th ribs.
- It extends from the sternum to the midaxillary line laterally.
- It has no capsule.

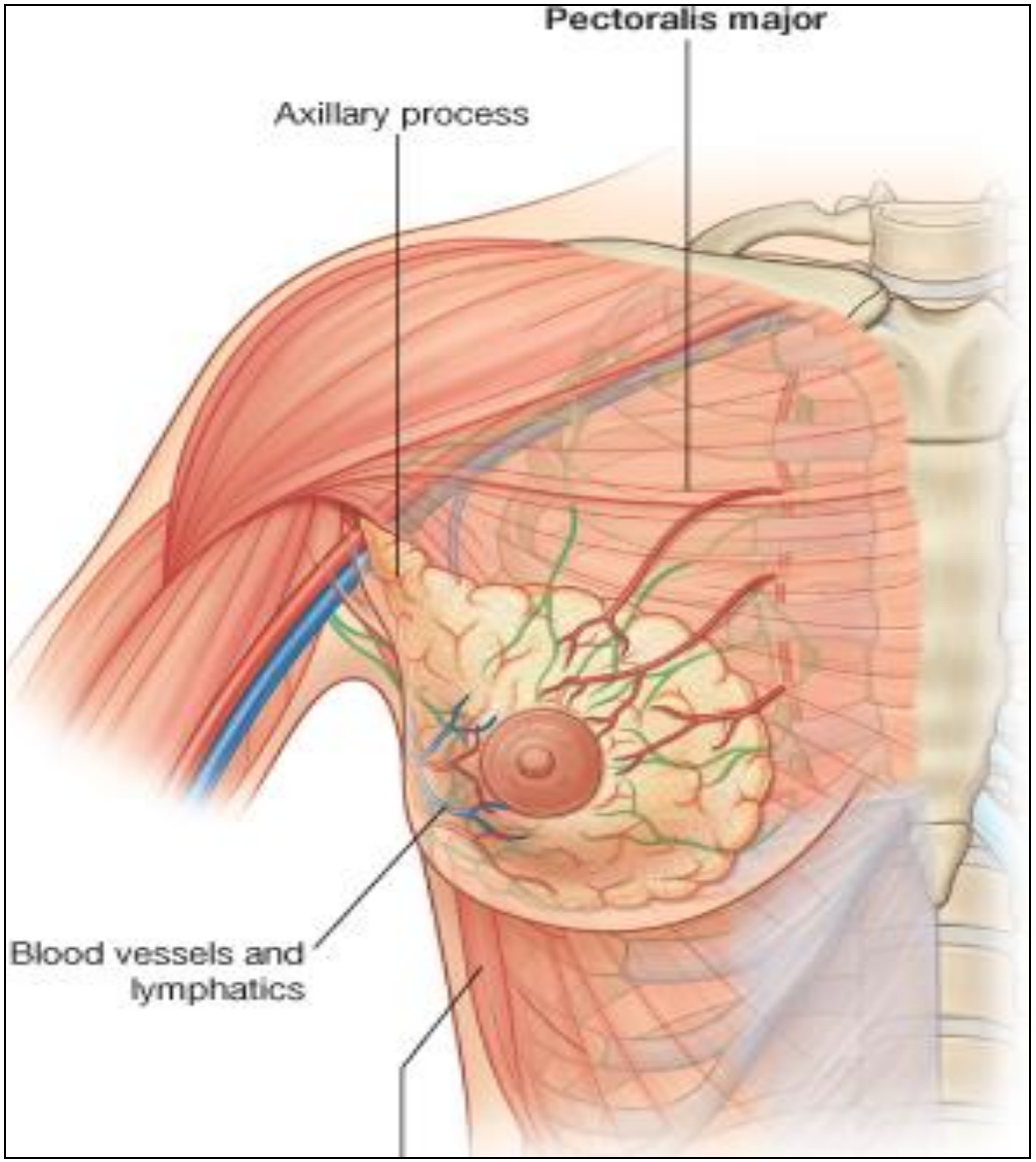


SHAPE AND POSITION OF FEMALE BREAST



- **2/3 of its base lies on the pectoralis major muscle, while its inferolateral 1/3 lies on:**
- **Serratus anterior &**
- **External oblique muscles.**
- **Its superolateral part sends a process into the axilla called the *axillary tail or axillary process.***

SHAPE AND POSITION OF FEMALE BREAST

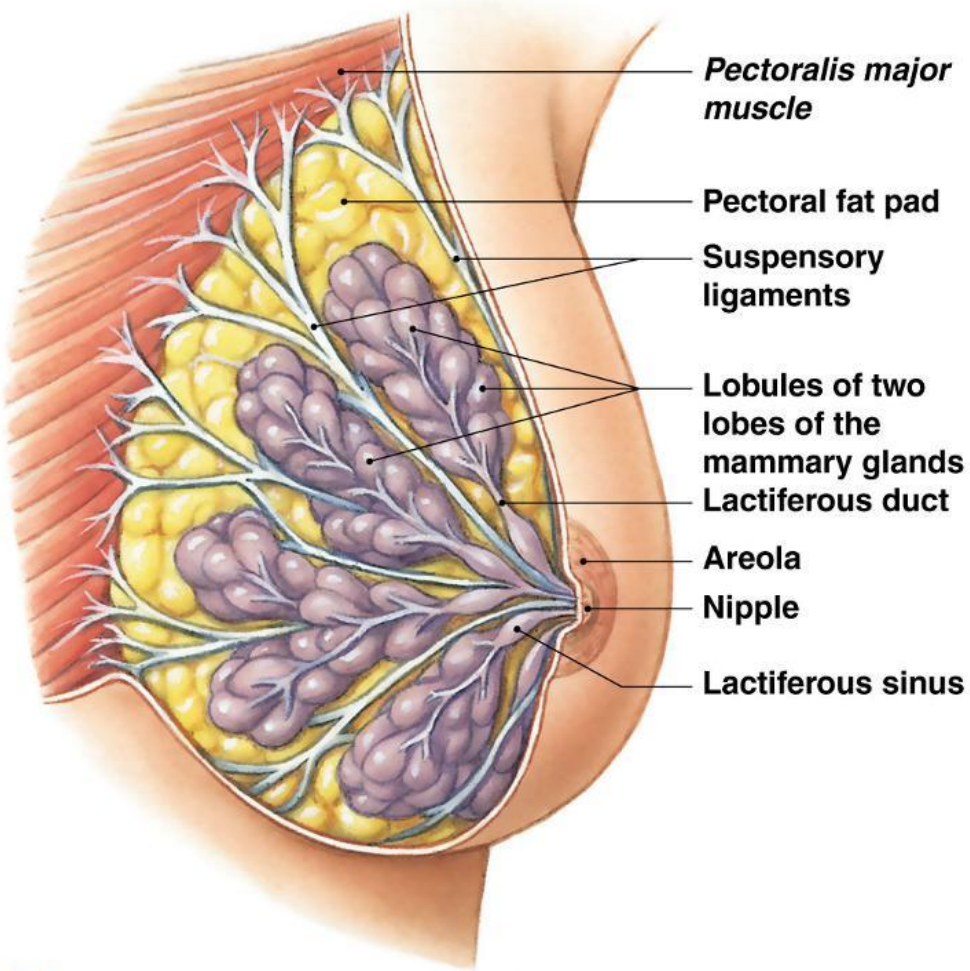


- **Nipple:**
- It is a conical eminence that projects forwards from the anterior surface of the breast.
- The nipple lies opposite 4th intercostal space.
- It carries 15-20 narrow pores of the lactiferous ducts.
- **Areola :**
- It is a dark pink brownish circular area of skin that surrounds the nipple.
- The subcutaneous tissues of nipple & areola are devoid of fat.

STRUCTURE OF MAMMARY GLAND

- It is non capsulated gland.
- It consists of lobes and lobules which are embedded in the subcutaneous fatty tissue of superficial fascia.
- It has fibrous strands (ligaments of cooper) which connect the skin with deep fascia of pectoralis major.
- It is separated from the deep fascia covering the underlying muscles by a layer of loose areolar tissue which forms the retromammary space. What is its Importance? (allows the breast to move freely).

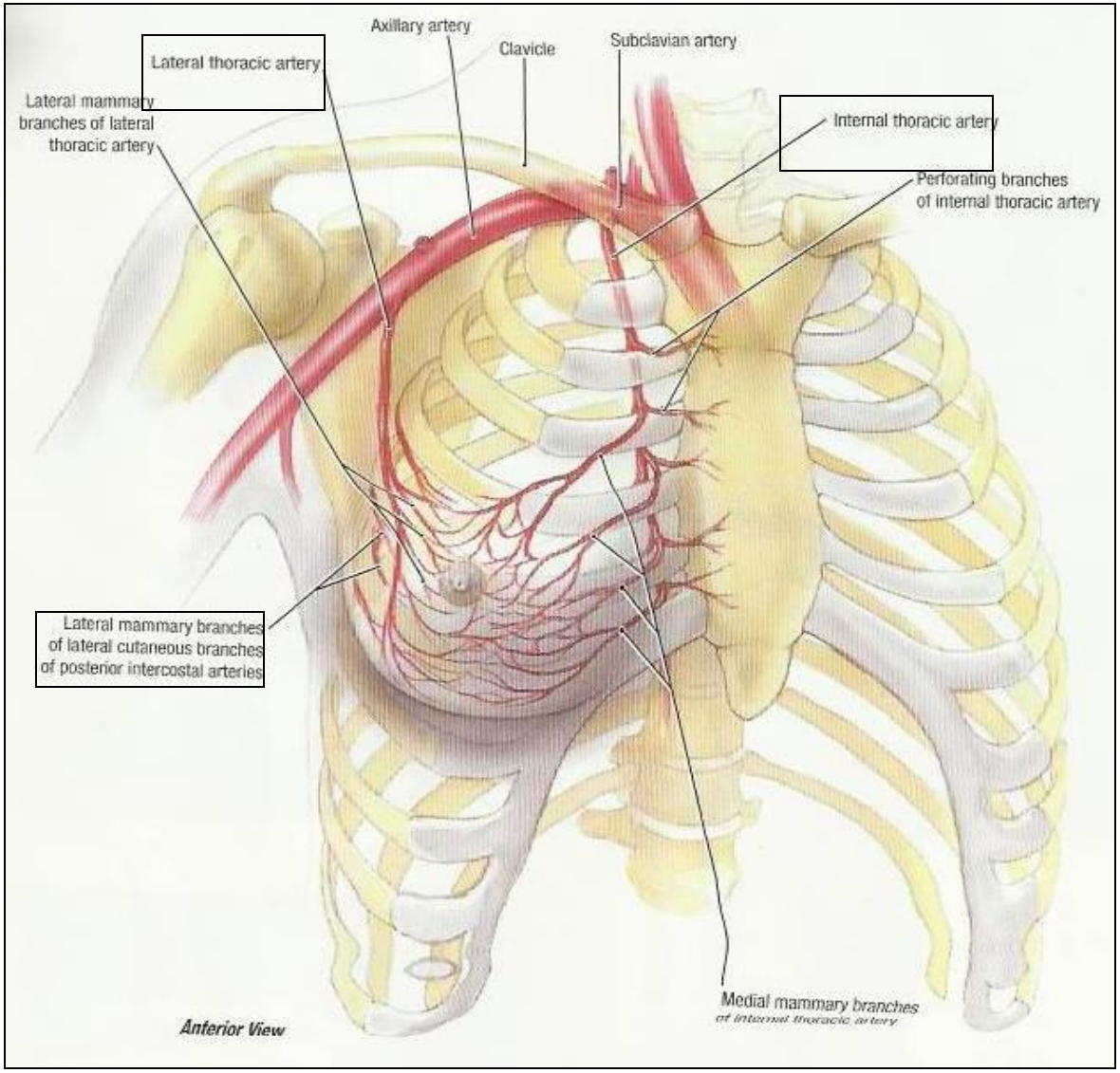
STRUCTURE OF MAMMARY GLAND



a The mammary glands of the left breast

- **It is formed of 15-20 lobes.**
- **Each lobe is formed of a number of lobules.**
- **The lobes and lobules are separated by interlobar and interlobular fibrous & fatty tissue, called ligaments of Cooper. (Importance)?** These ligaments give the breasts support by connecting the skin of the breasts to the pectoralis muscles below them.
- **It has from 15-20 lactiferous ducts which open by the same number of openings on the summit of the nipple.**

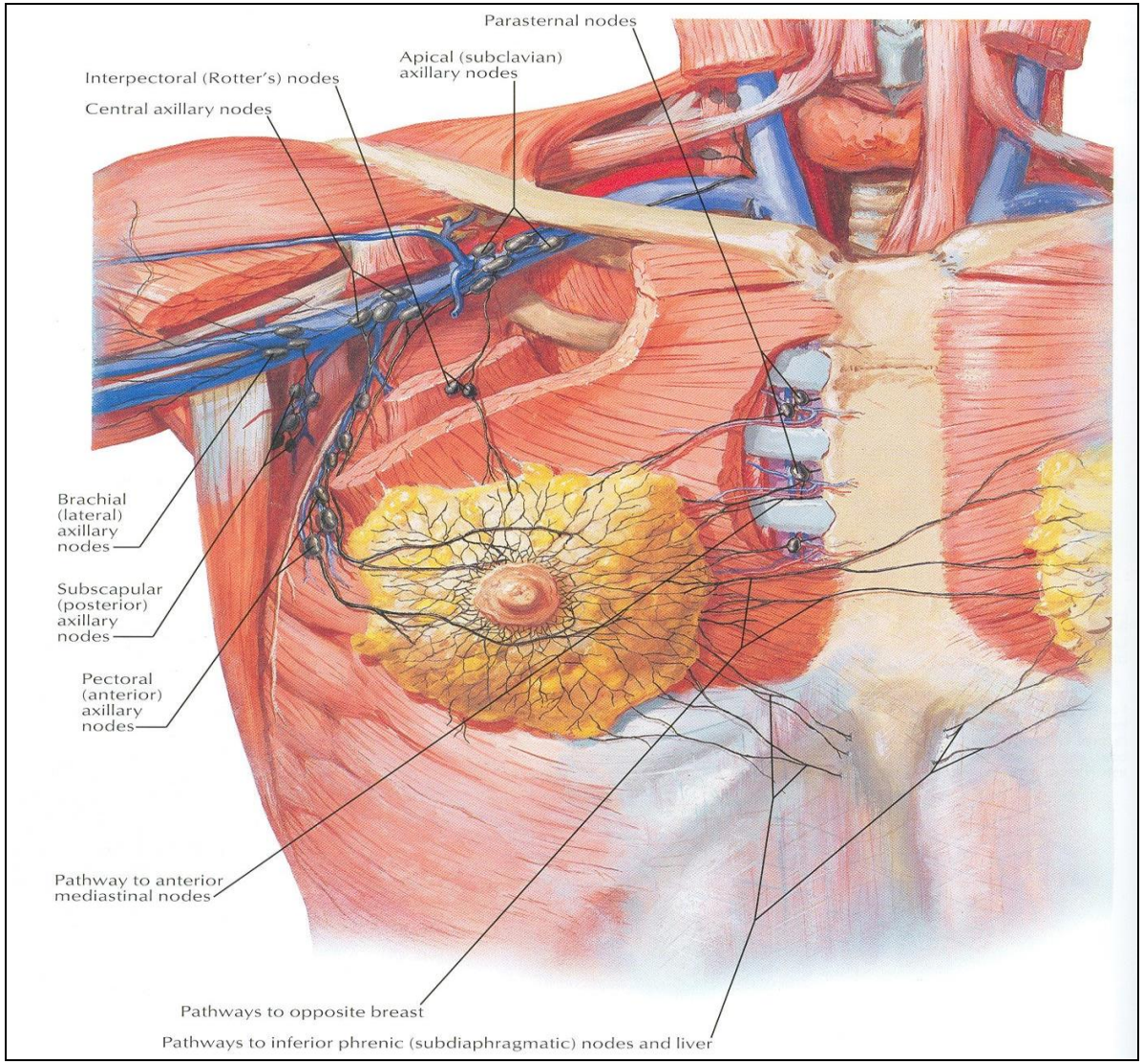
ARTERIAL SUPPLY



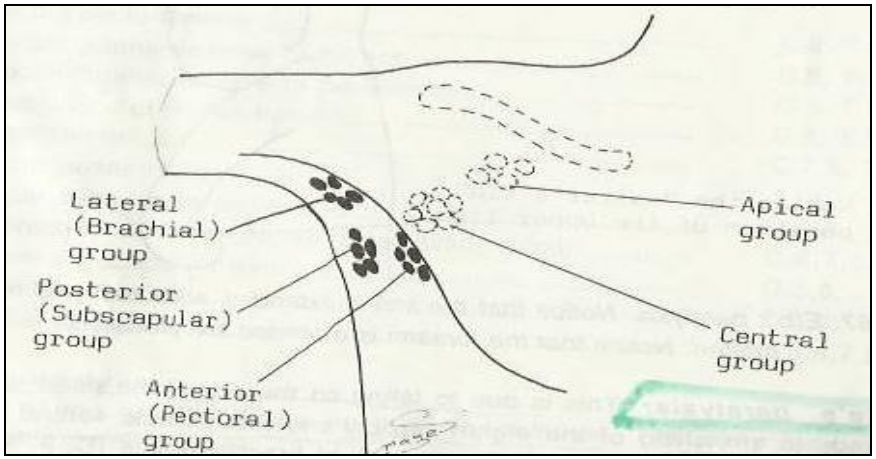
- 1. Perforating <u>branches of</u> internal thoracic (internal mammary) artery.
- 2. Mammary <u>branches of</u> lateral thoracic artery.
- 3. Mammary <u>branches of</u> Intercostal arteries.

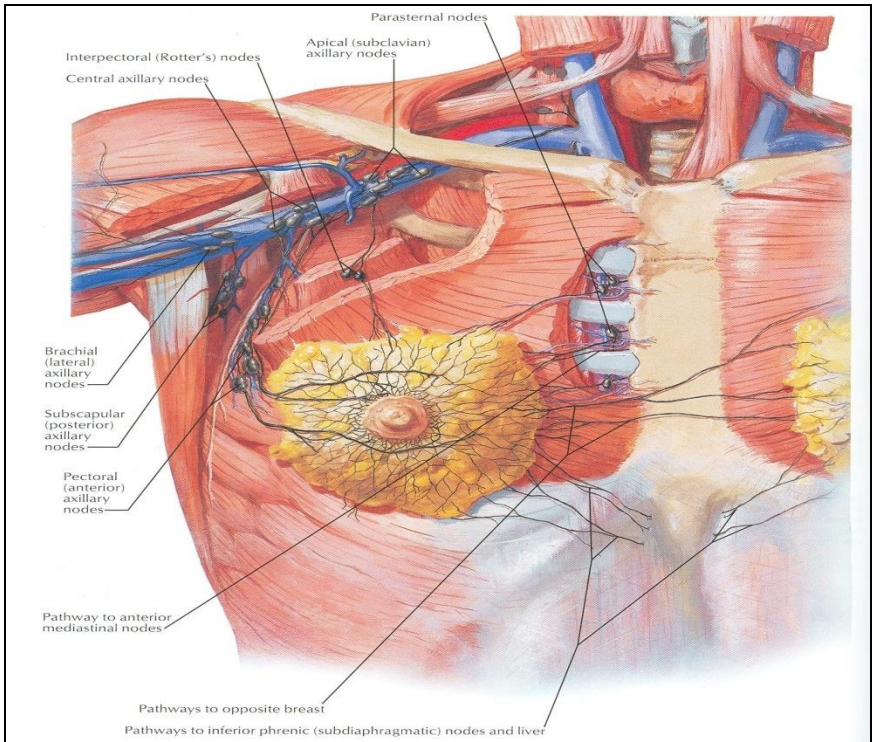
VENOUS SUPPLY

- Veins are corresponding to the arteries.
- Circular venous plexus are found at the base of nipple.
- Finally, veins of this plexus drain into axillary & internal thoracic veins.



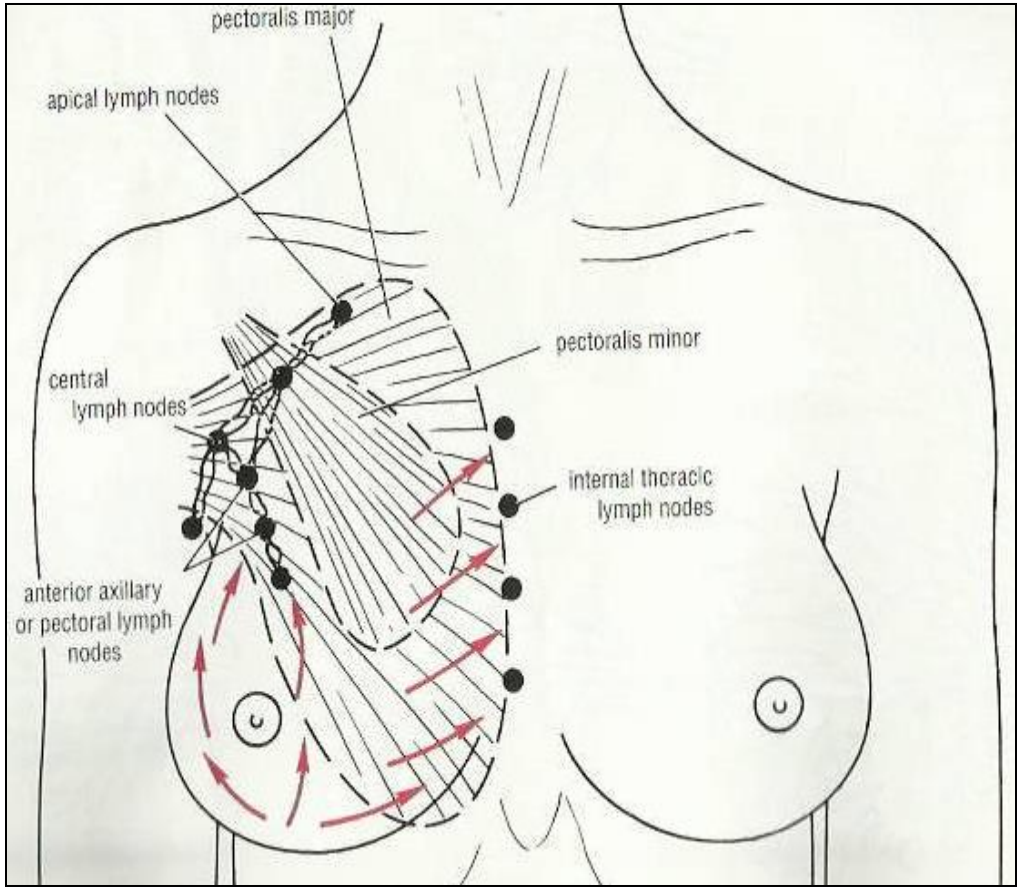
AXILLARY LYMPH NODES





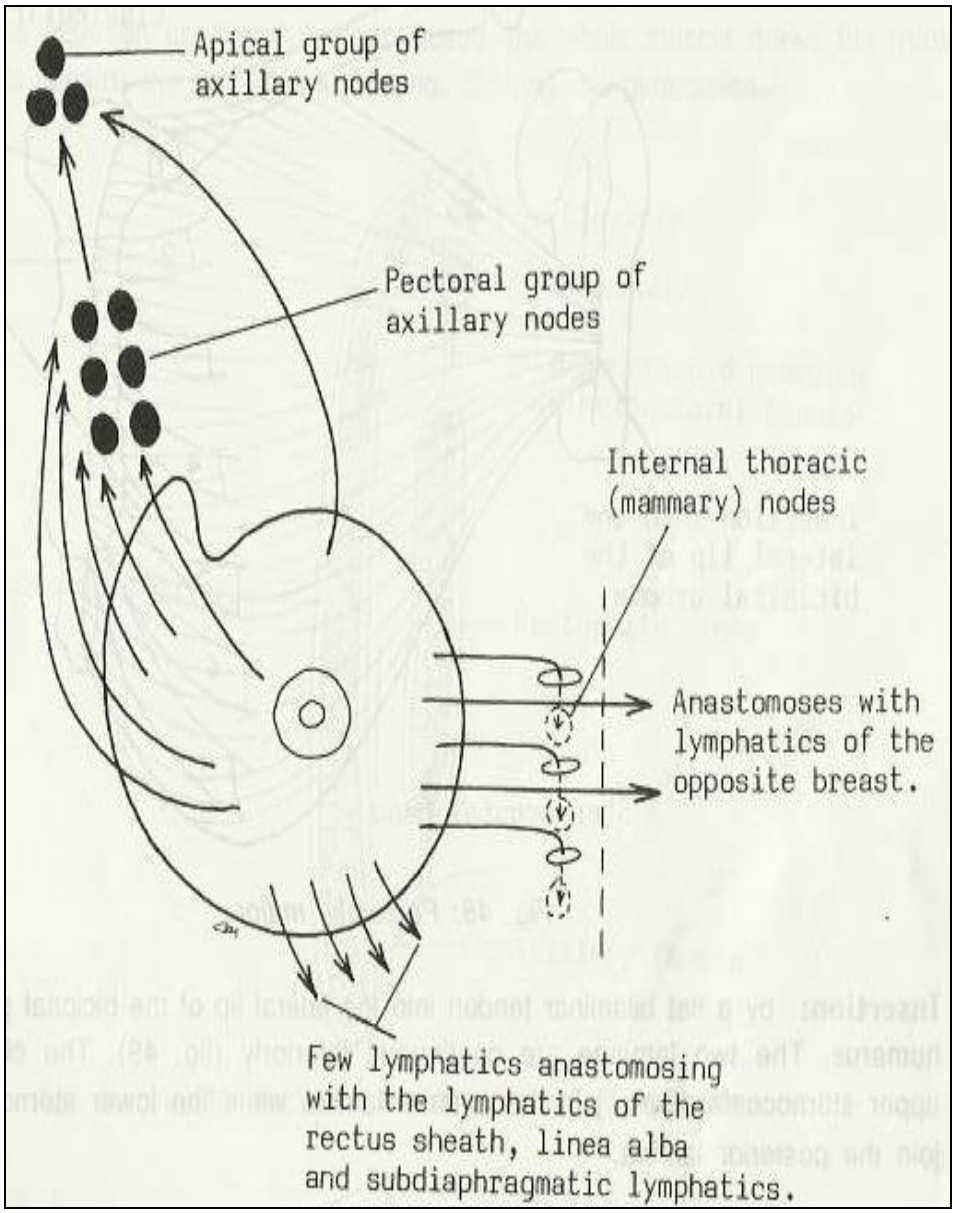
- They are arranged into 5 groups which lie in axillary fat :
- **Pectoral (Anterior) group :** which lies on the pectoralis minor **along lateral thoracic vessels.**
- **Subscapular (Posterior) group :** which lies on posterior wall of axilla on lower border of subscapularis **along subscapular vessels.**
- **Brachial (Lateral) group :** lies on lateral wall of axilla **along 3rd part of axillary vessels.**
- **Central group :** lies in axillary fat **at the base of axilla.**
- **Apical group :** lies **at apex of axilla.**
- **Subclavian lymph trunk:**
- it is formed by union of efferent lymph vessels of **apical group.** It usually opens in subclavian vein. On the left side it usually opens into thoracic duct.

LYMPHATIC DRAINAGE



- **Subareolar lymphatic plexus :**
- **Lies beneath the areola.**
- **Deep lymphatic plexus:**
- **Lies on the deep fascia covering pectoralis major.**
- **Both plexuses radiate in many directions and drain into different lymph nodes.**

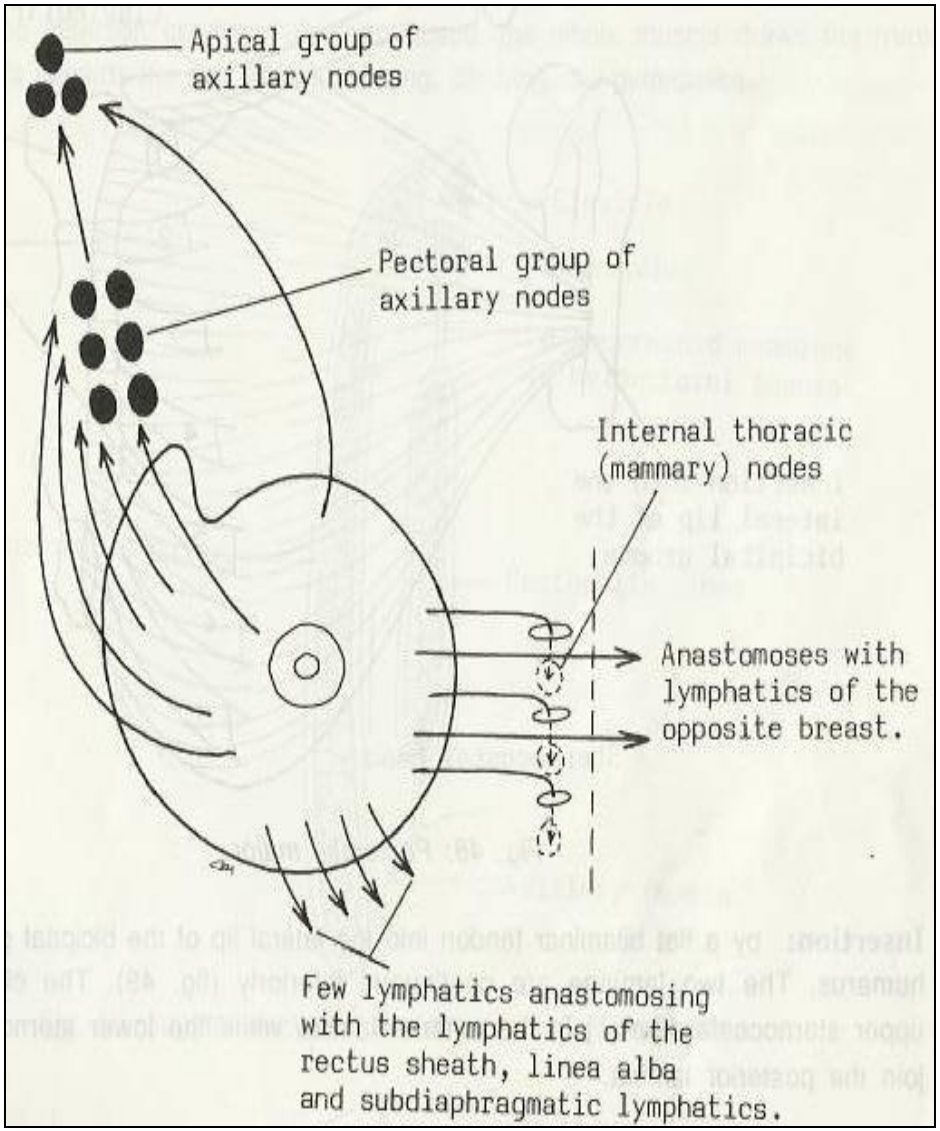
LYMPHATIC DRAINAGE



- **Central & lateral parts** of the gland (75%) drain into **pectoral group** of axillary lymph nodes.
- **Upper part** of the gland drains into **apical group** of axillary lymph nodes.
- **Medial part** drains into **internal thoracic (parasternal)** lymph nodes, forming a chain along the internal thoracic vessels.
- **Some lymphatics from the medial part** of the gland pass across the front of sternum to anastomose with that of **opposite side.**
- Lymphatics from the **inferomedial part** anastomose with lymphatics of rectus sheath & linea alba, and some vessels pass deeply to anastomose with the **sub diaphragmatic lymphatics**.

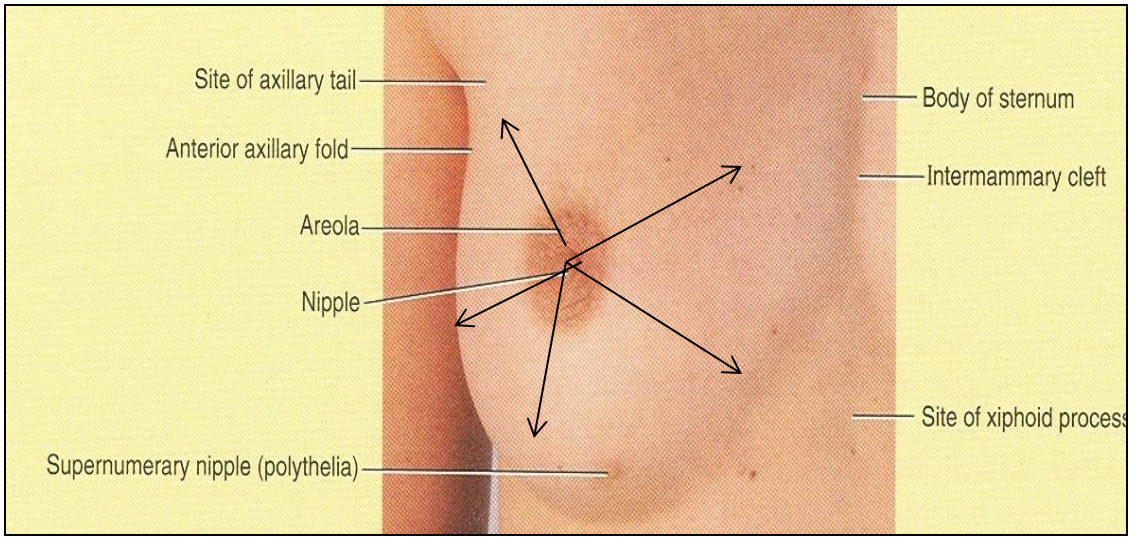
APPLIED ANATOMY- CANCER BREAST

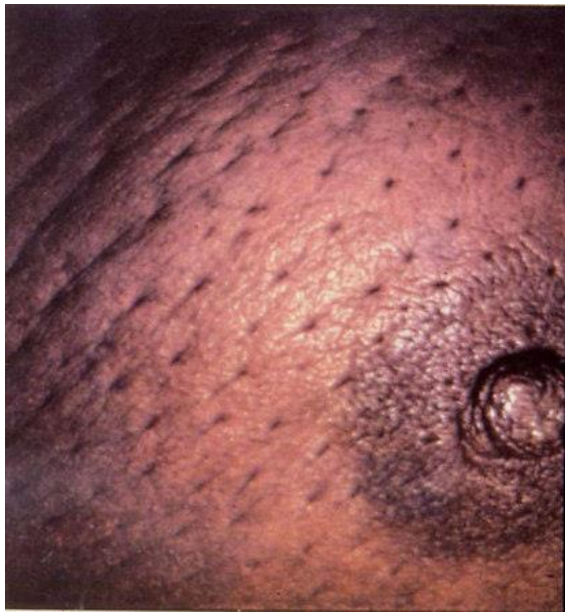
- It is a common surgical condition.
- 60% of carcinomas of breast occur in the upper lateral quadrant.
- 75% of lymph from the breast drains into the axillary lymph nodes.
- In case of carcinoma of one breast, the other breast and the opposite axillary lymph nodes are affected because of the anastomosing lymphatics between both breasts.
- In patients with localized cancer breast, a simple mastectomy, followed by radiotherapy to the axillary lymph nodes is the treatment of choice.



Applied Anatomy

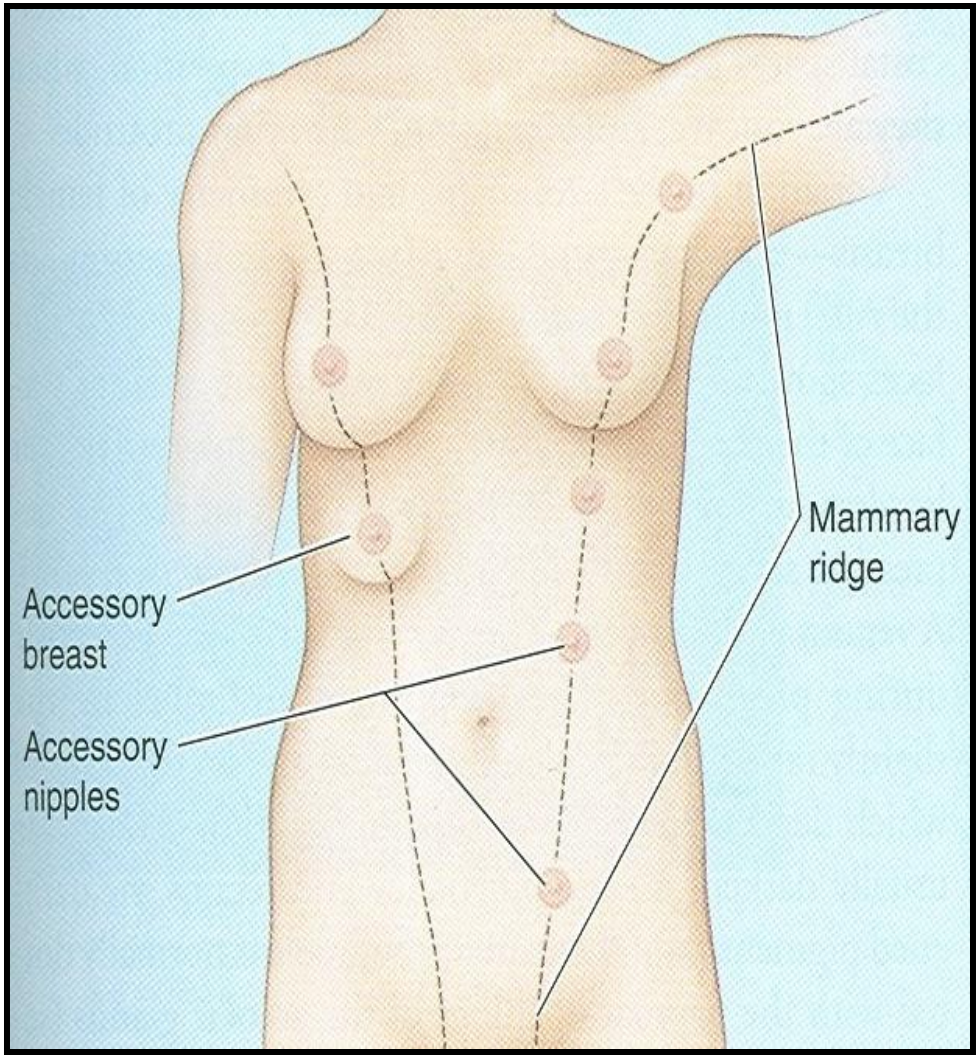
- The lactiferous ducts are radially arranged from the nipple, so incision of the gland should be made in a radial direction to avoid cutting through the ducts.
- Infiltration of the *ligaments of Cooper* by breast cancer leads to its shortening giving peau de'orange appearance of the breast.





Mammary ridge

- **Mammary ridge** extends from the axilla to the inguinal region.
- **In human,** the ridge disappears **EXCEPT** for a small part in the **pectoral region**.
- **In animals,** several mammary glands are formed along this ridge.



THANK YOU

Which is <u>correct</u> regarding the mammary gland ?

It extends from the 2nd to 8th ribs.

Its base lies on the pectoralis major muscle.

It has 4-8 lactiferous ducts.

Its most lymph drains into the parasternal lymph nodes.

The lymphatics from upper part of mammary gland drain into :

The parasternal lymph nodes.

Subdiaphragmatic lymph nodes.

Apical group of axillary lymph nodes.

Pectoral group of axillary lymph nodes.

The lactiferous ducts of mammary gland are :

Less than 10.

From 10-15.

From 15-20.

More than 20.