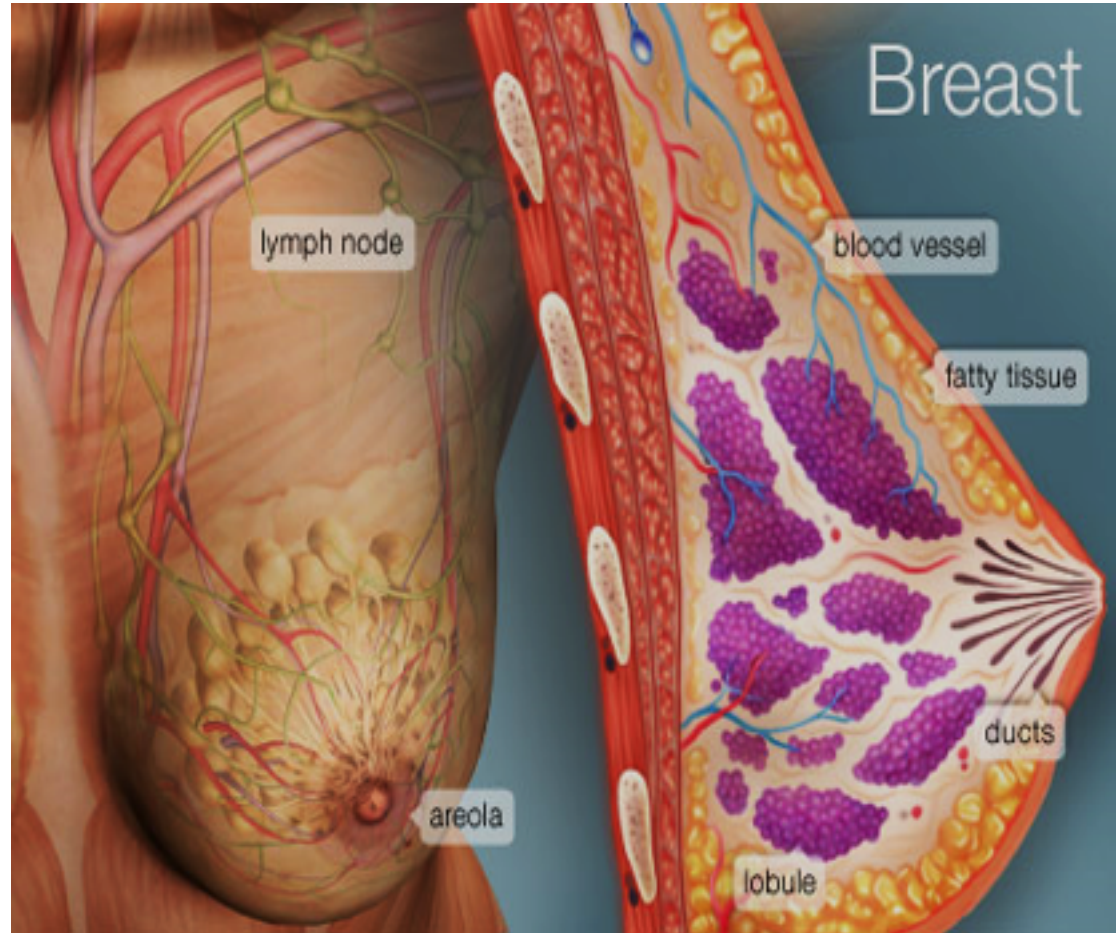


FEMALE BREAST

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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.



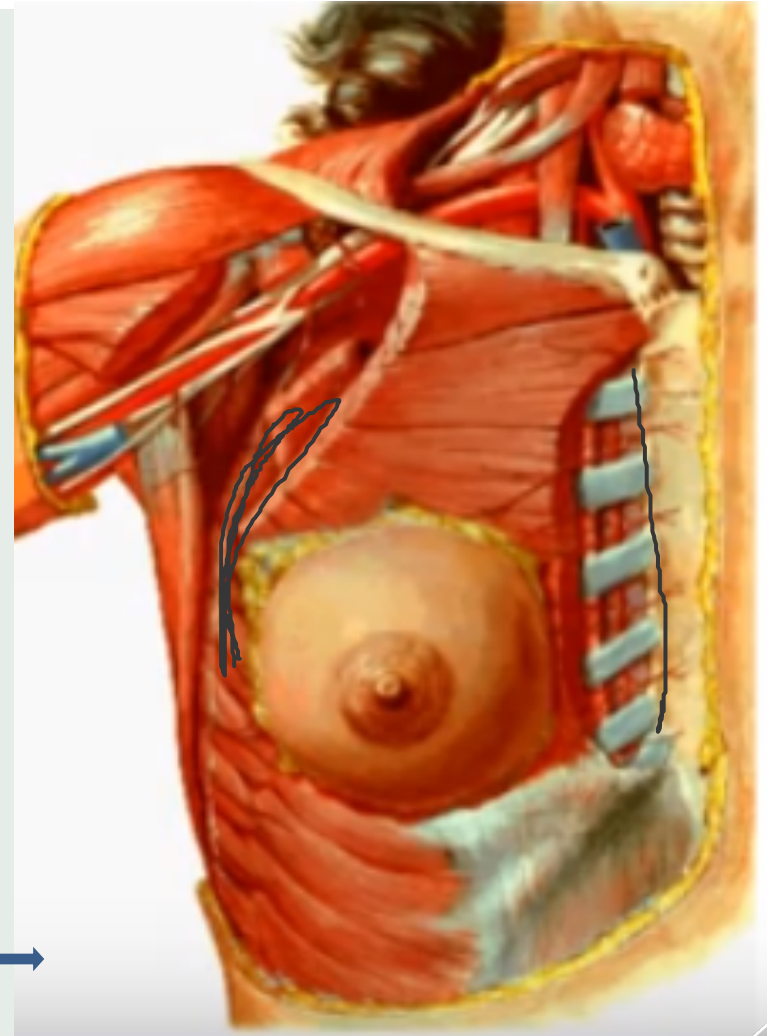
The Mammary Gland

- They are **modified sweat glands** (exocrine glands).
- Become **functioning** only in lactating females.
- Present in both sexes.
- Lie on the front and the sides of the chest within the **superficial fascia**.
- It is **non capsulated** gland.
- Behind the breasts is a space filled with loose connective tissue called the **Retromammary space**, (allows the breast to move freely).



Parts, Shape & position of the Gland

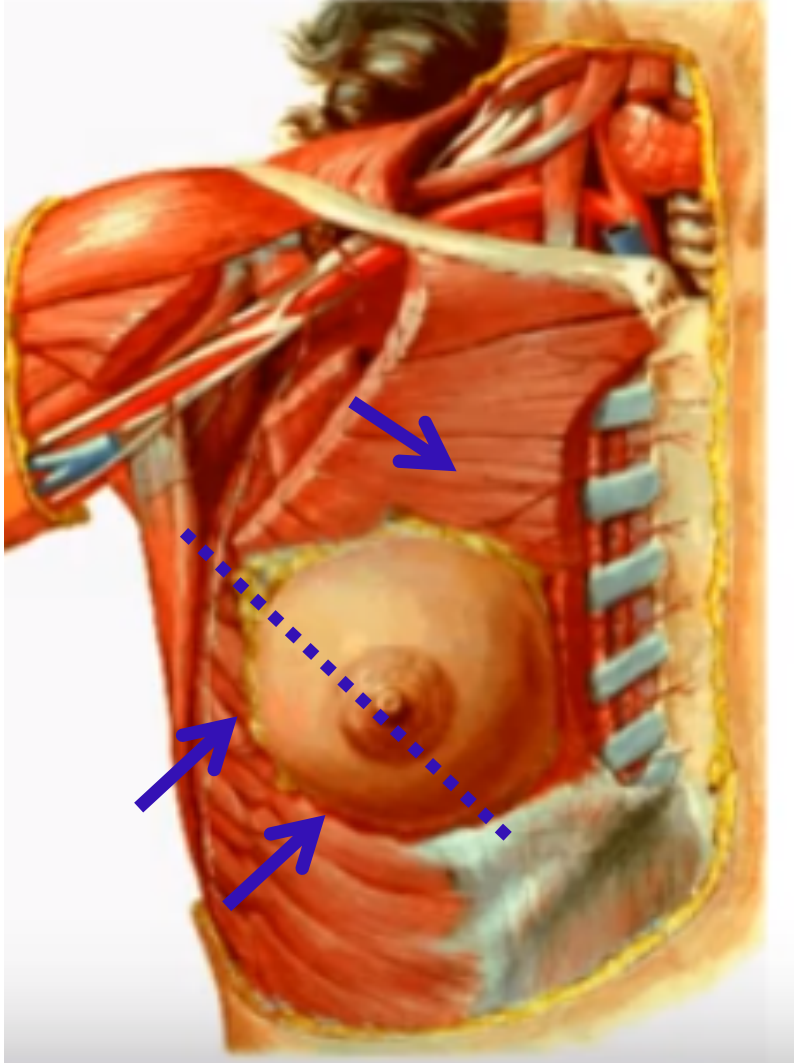
- It is **conical** in shape.
- The breast extends from **2nd rib** superiorly to **6th ribs** inferiorly.
- It extends from the **sternum** medially to the **midaxillary line** laterally.
- It has a **base**, **apex** and **tail**.



Cooper)



EXTENSION OF FEMALE BREAST

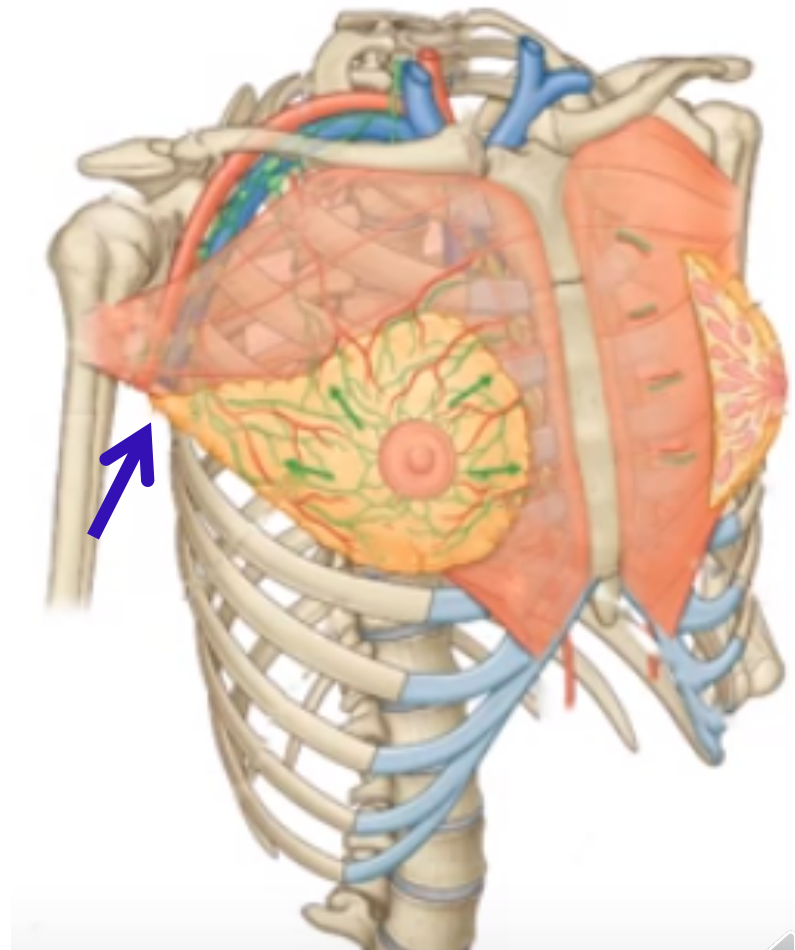


- Base :
 - Upper 2/3 of its base lies on:
Fascia over **pectoralis major**,
 - inferolateral 1/3 lies on:
 - Fascia over **serratus anterior**.
 - Fascia over **external oblique**.

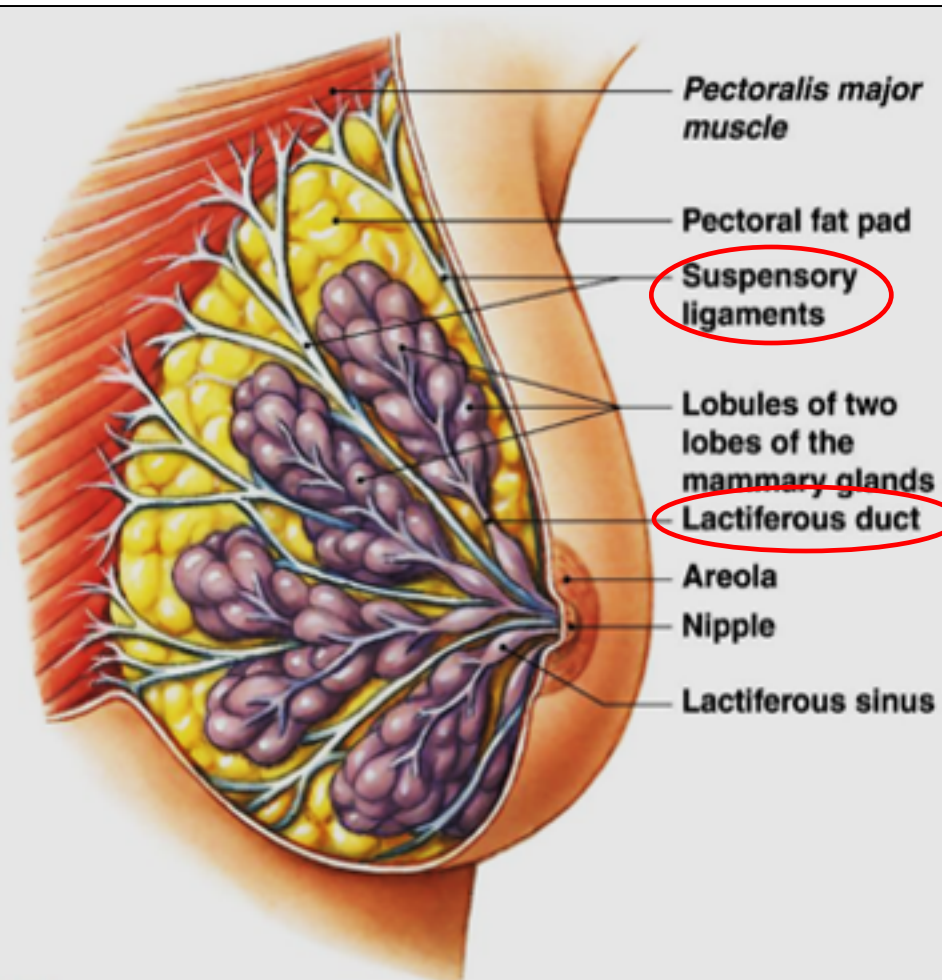


Axillary Tail

- Small part (superolateral part) of the breast extends upward and laterally
- Pierces the fascia at the lower border of pectoralis major muscle and sends a process into the axilla called the ***axillary tail*** or ***axillary process***.



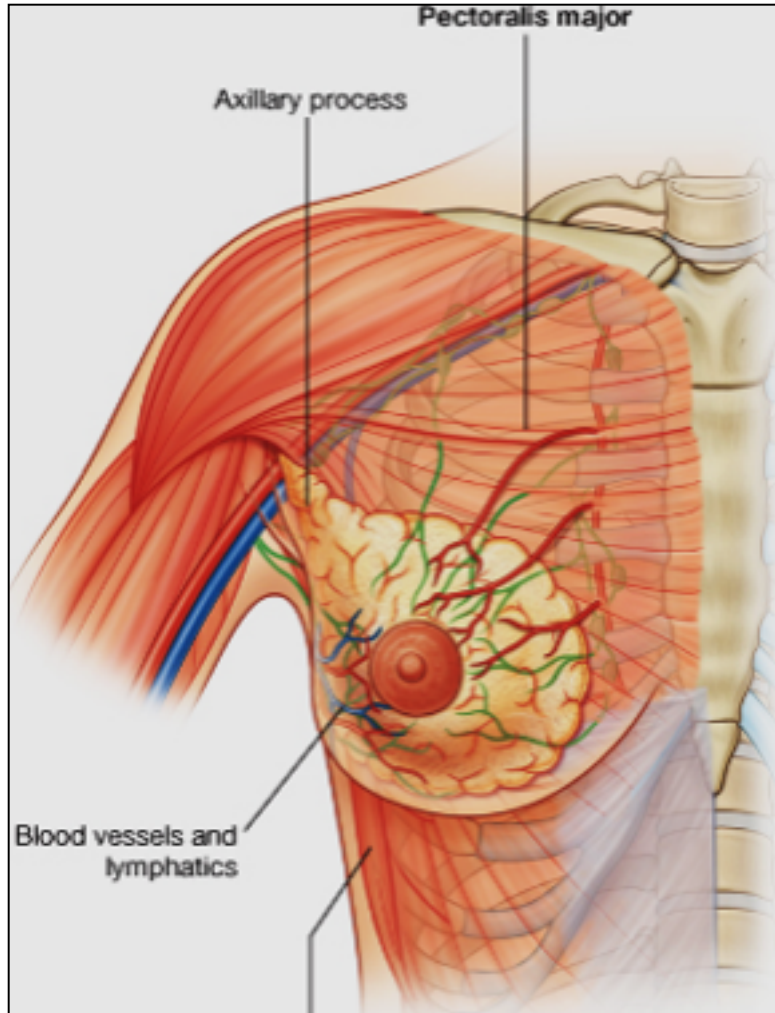
STRUCTURE OF MAMMARY GLAND



- Breast is made of 15-20 lobes.
- Each lobe is formed of a number of lobules.
- The lobes and lobules are separated by interlobar and interlobular fibrous strands & fatty tissue, called (suspensory ligaments) or ligaments of Cooper. (Importance)?
 - These ligaments give the breasts support by connecting the skin of the breast to the deep facia of underlying pectoralis muscle.
- It has from 15-20 lactiferous ducts which open separately at the surface of the nipple.

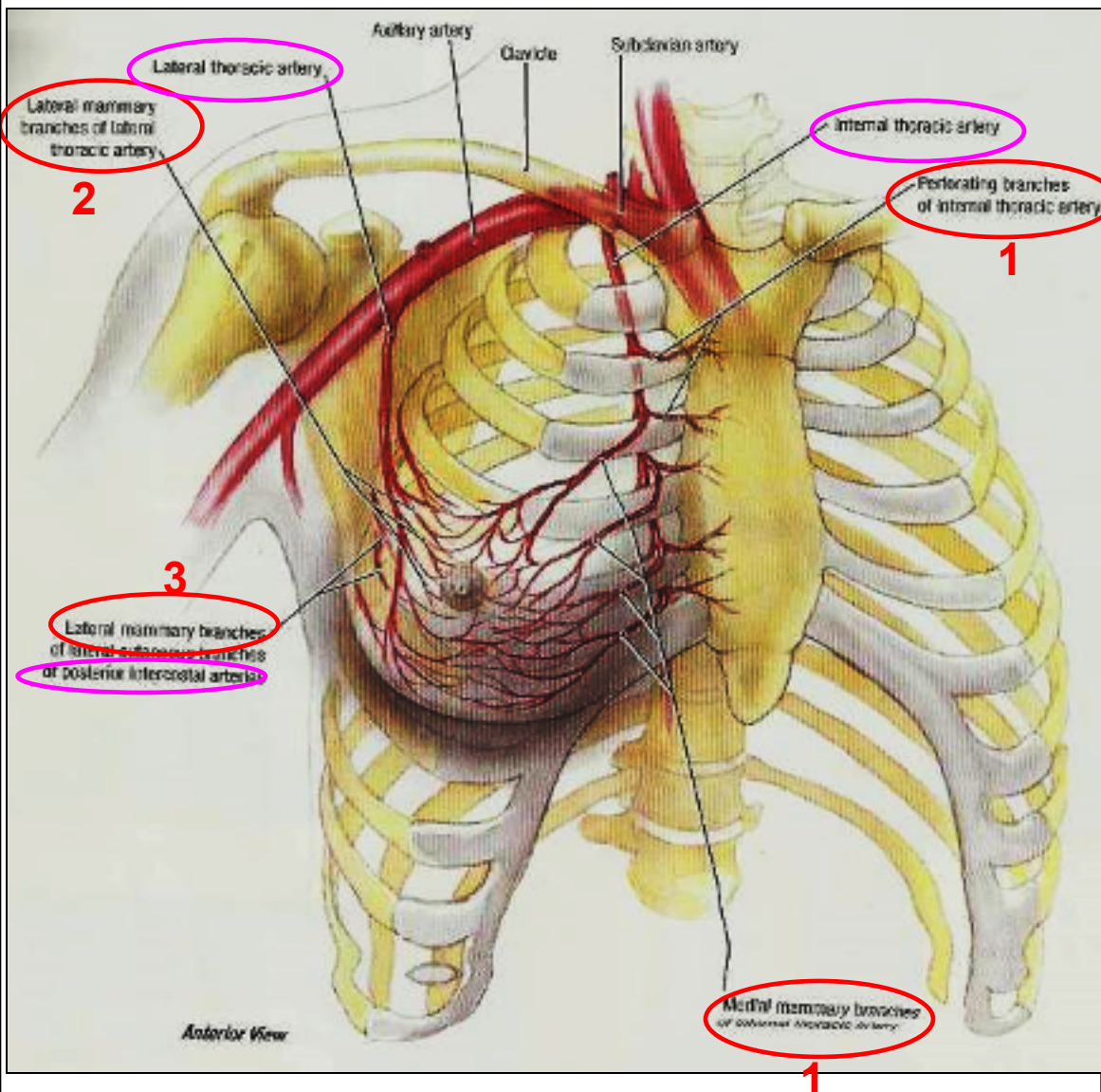


POSITION OF FEMALE BREAST



- **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.**

Blood Supply - Arteries

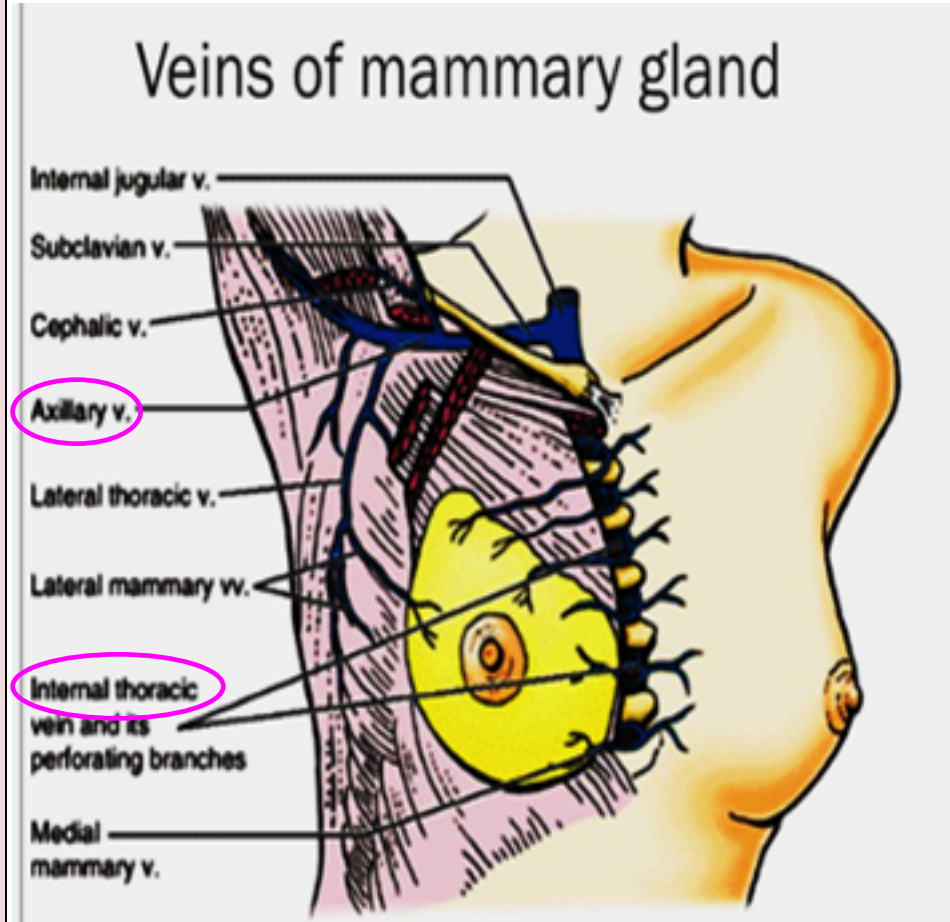


1. Perforating branches & medial mammary branches of the **internal thoracic** artery.
2. Mammary branches of the **lateral thoracic** artery.
3. Mammary branches of the **posterior intercostal** arteries.



Blood Supply - Veins

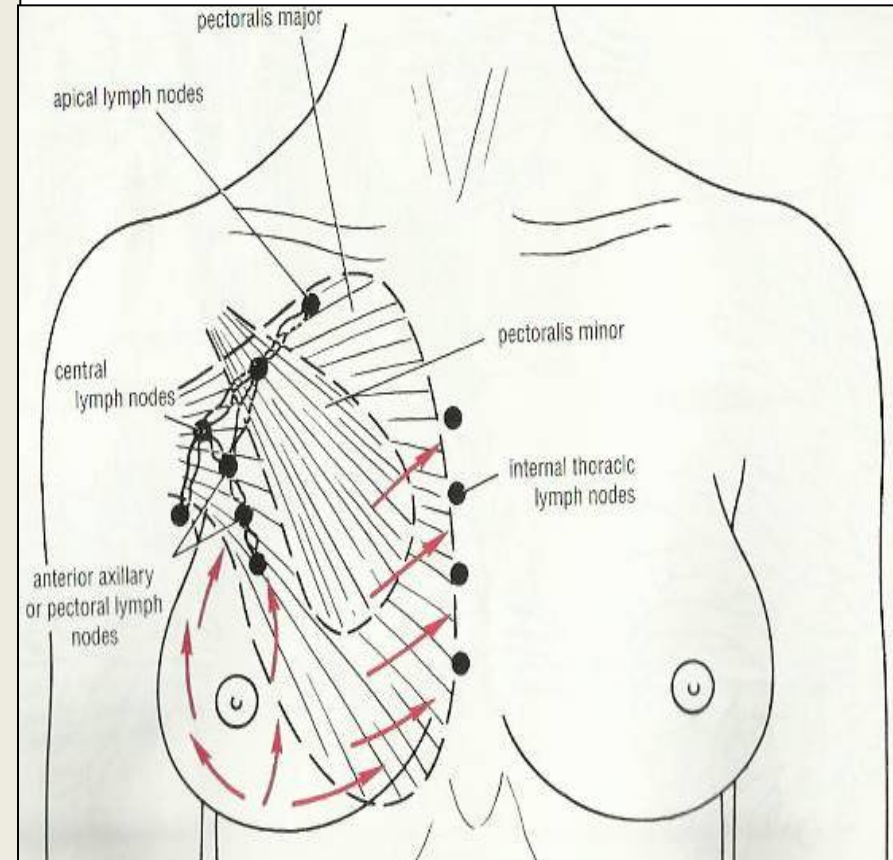
- Veins are corresponding to the arteries.
- 1. **Internal thoracic** → brachiocephalic vein
- 2. **Axillary** → subclavian vein
- 3. **Intercostal** → azygous (Rt) or hemiazygous (Lt) venous system.
- **Circular venous plexus** are found at the base of nipple.
- **Finally**, veins of this plexus **drain** into axillary & internal thoracic veins.



LYMPHATIC DRAINAGE OF BREAST

Lymph vessels:

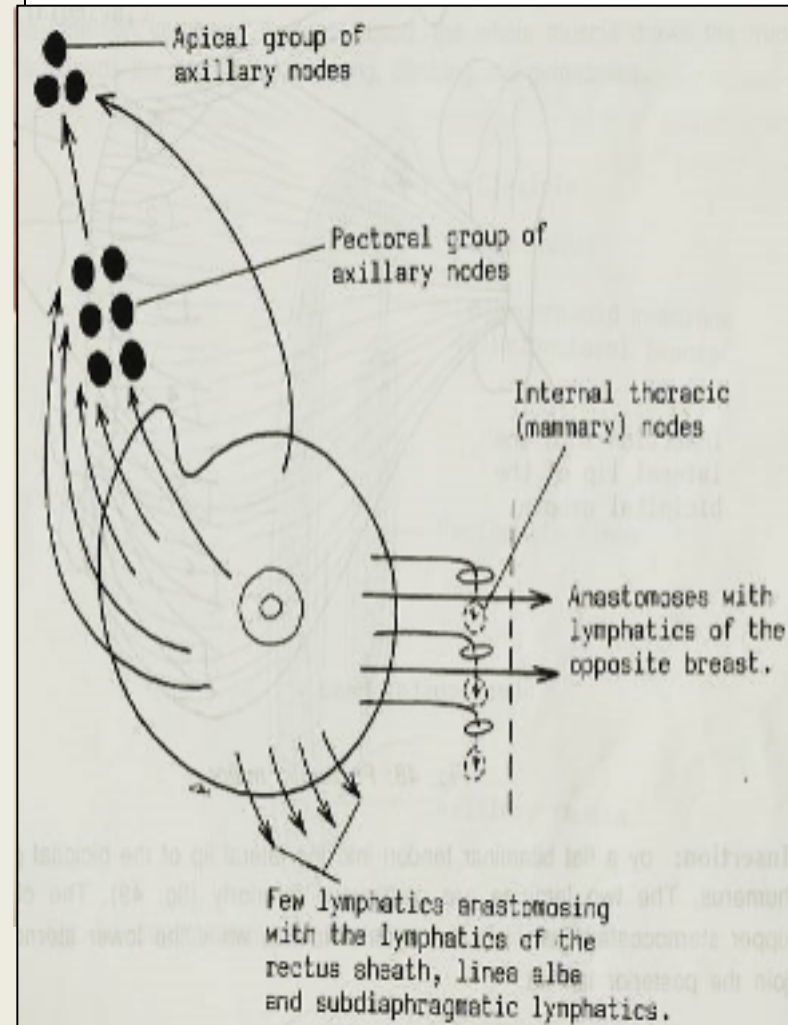
- Superficial lymphatic plexus:
Subareolar plexus
 - Lies beneath the areola.
- Deep lymphatic plexus :
Submammary plexus
 - Lies on the deep fascia covering pectoralis major.
 - Both plexuses radiate in many directions and drain into different lymph nodes (Axillary groups + Internal thoracic L.Ns.)



LYMPHATIC DRAINAGE OF BREAST

Lymph nodes:

- **Central & lateral parts:** (75%) drain into pectoral group of axillary LN.
- **Upper part:** drains into apical group of axillary LN.
- **Medial part** drains into **internal thoracic (parasternal) LN**, forming a chain along the internal thoracic vessels.
- **Some lymphatics from the medial part anastomose with lymphatics of opposite breast.**
- **Inferomedial part:** anastomose with lymphatics of rectus sheath, linea alba and **sub diaphragmatic LN**.

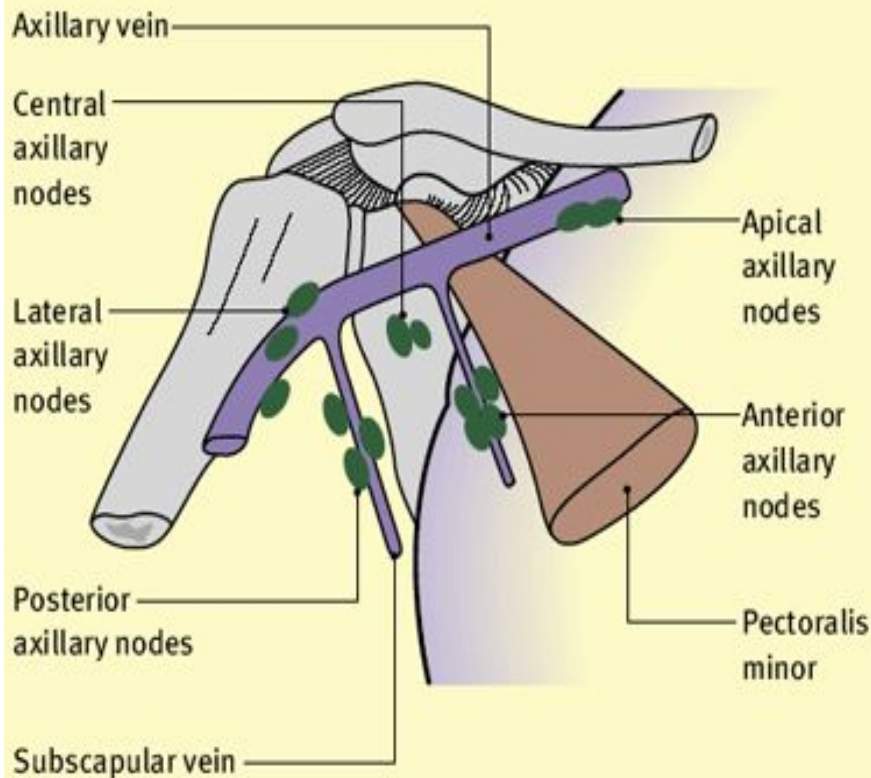


AXILLARY LYMPH NODES

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 immediately behind the clavicle.

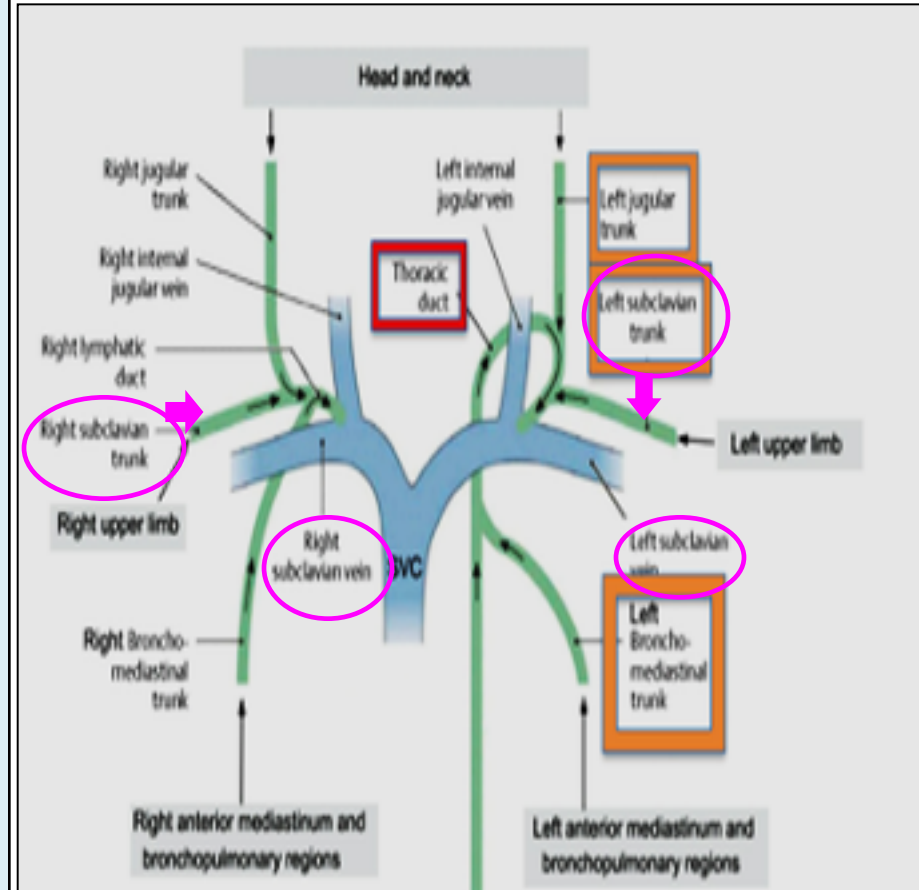
Lymph nodes of the axilla



AXILLARY LYMPH NODES

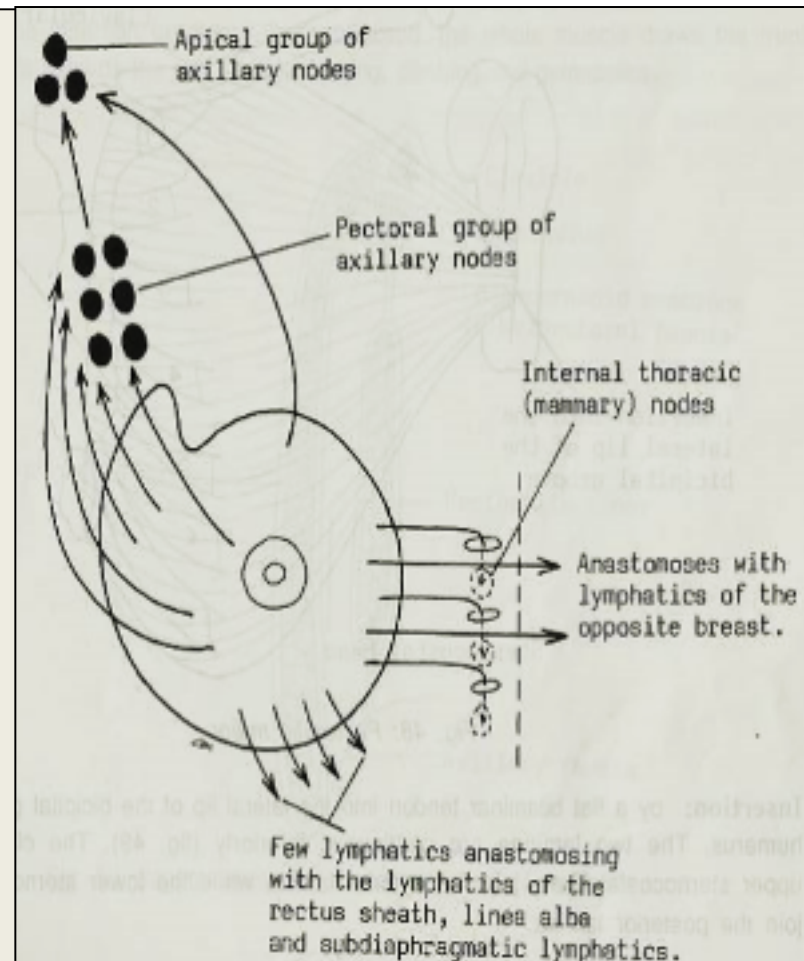
Efferent:

- Continue with cervical LN.
- Drain into **right lymphatic duct (right side)**.
- Into **thoracic duct (left side)**.
- Both will terminate at the junction between **the internal jugular and the subclavian vein**, thus, the lymphatic drainage returns back to the circulation.



APPLIED ANATOMY- CANCER BREAST

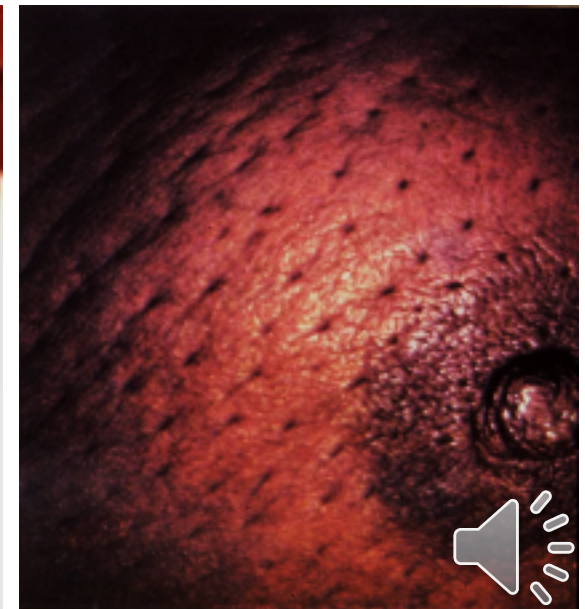
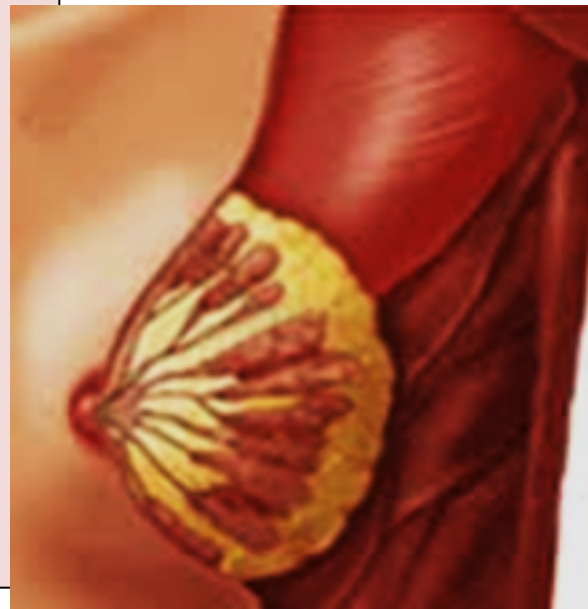
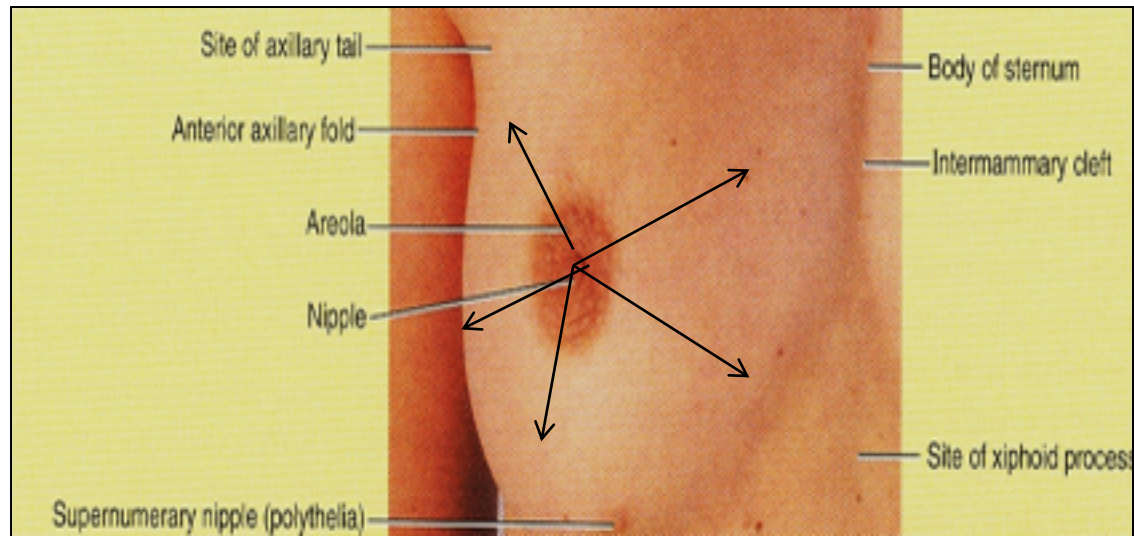
- It is a common surgical condition.
- 60% of carcinomas of breast occur in the upper lateral quadrant.
- 75% of lymph from the breast drains into the axillary lymph nodes.
- In case of carcinoma of one breast, the other breast and the opposite axillary lymph nodes are affected because of the anastomosing 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

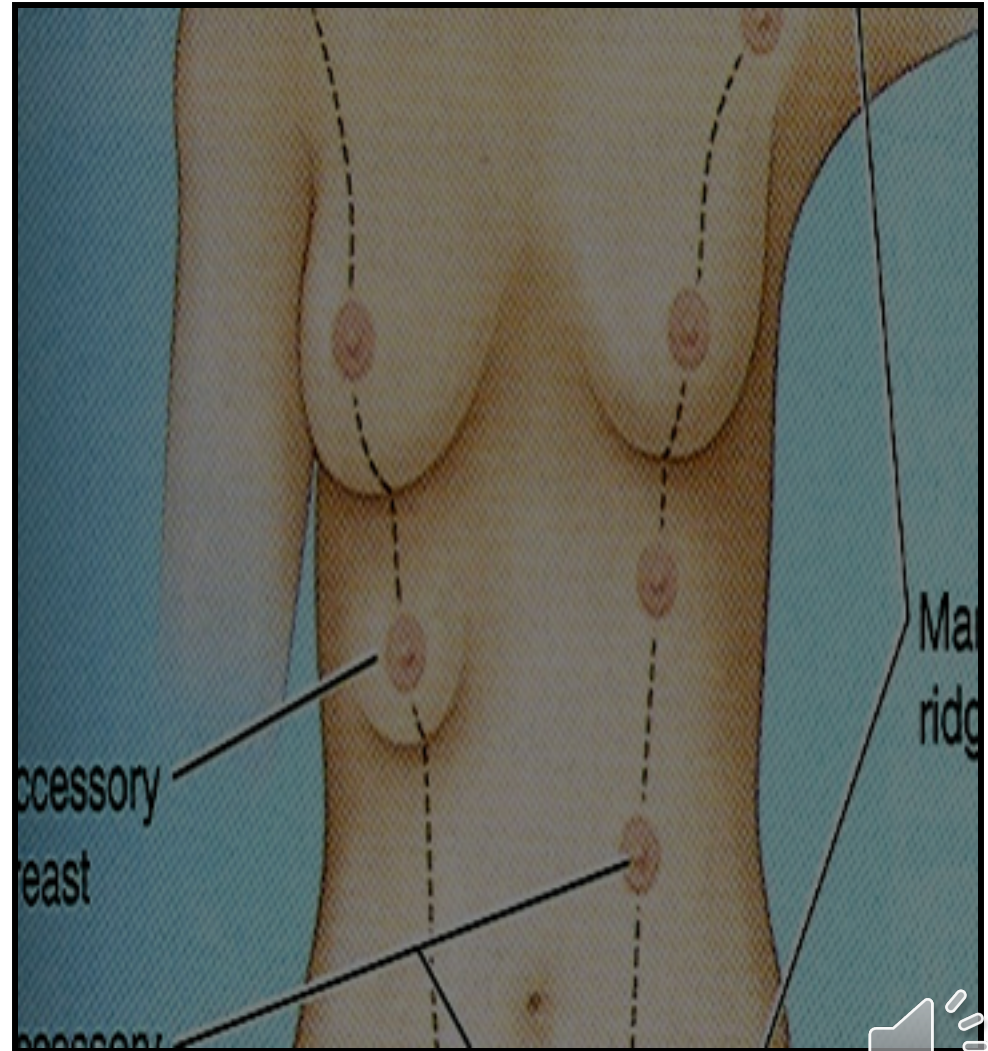
- The lactiferous ducts are radially arranged from the nipple, so incision of the gland should be made in a radial direction to avoid cutting through the ducts.

- Infiltration of the ligaments of Cooper 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

