History :

Objective	Data
Personal Data	✓ Name ✓ Age ✓ Menstural Cycle ✓ Marital status ✓ Number of children ✓ Residency ✓ Occupation ✓ Special habits ✓ Chronic diseases.
Chief complaint	✓ Breast lump. ✓ Pain(Mastalagia).
Present History	✓ Analysis of complaint ✓ Associated symptoms
Past History	✓ Radiation exposure ✓ Previous investigations (mammograms, imaging, FNAC study). ✓ Previous Clinic visits ✓ Chronic diseases ✓ Hospital admissions ✓ Previous Surgeries and complications.
Familial History	Familial predisposition of : ✓ Breast carcinoma. ✓ Ovarian carcinoma. And the age of those affected.
Drug History	✓ Prescribed drugs ✓ OTC ✓ Topical drugs ✓ Hormonal therapies (known to rise estrogen levels).
Other Systems Complaints	✓ Systems review

Chief Complaint :

--> Breast lump.
--> Mastalgia.
--> Tenderness.
--> Skin and nipple changes.

Breast Lump (most common disorder) :

--> Onset (When it first appears ?).
--> Number (How many lumps out there ?).
--> Size (How big ?).
--> Location (Where ?).
--> Consistency (Soft, firm or hard).
--> Course (increasing in size ?).
--> Tenderness (is it sore to touch ?).
--> Relation to surroundings (mobile or fixed to the surroundings).
--> Menstural cycle relations (size increasing w/ menses ?).
--> Associated Symptoms (pain/skin-nipple changes ?).

Mastalgia :

--> Should be distinguished from chest wall pain.
--> Menstural Cycle relations :

Pain type	Menstural Relations
Cyclical	Worse in the latter half of the cycle and relieved by the end of mensturation.
Non-cyclical	No changes with the menstural cycle.

Skin Changes (reported or noted during examintaion) :

--> **Simple Skin dimpling** : the skin is still mobile above the cancerous tissue.
--> **Indrawing of the skin** : the skin is attached to the underlying cancerous tissue and fixed in place.
--> **Lymphedema** : embedded lymphatics edema leads to swollen skin which appears in the form of circular ridges around hair follicles (Peau d'orange -- Orange Peel appearance).
--> **Eczema of nipple and areola** : Paget's disease or intraductal carcinoma.

Nipple changes :

--> Nipple inversion (retraction) : asymmetrical/symmetrical -common-often benign-can be first sign of malignancy (asymmetrical).
--> Nipple discharge : clear - yellow - green - bloody - onset - course - duration - associated symptoms (pain/skin changes).
--> Galactorrhea : milky discharge - most commonly caused by drugs and after breast feeding - rarely due to hyperprolactinemia.

Gynaecomastia :

--> Often occurs in pubertal boys.

--> Drug induced (Cimetidine --> hyperprolactinemia).

--> Chronic liver diseases (due to liver not metabolizing estrogen).

11.1 Causes of gynaecomastia

Drugs

- Cannabis
- Methadone
- Oestrogens and other hormone-manipulating drugs used in treatment of prostate cancer
- Spironolactone
- Digoxin

Decreased androgen production

- Klinefelter's syndrome

Increased oestrogen levels

- Chronic liver disease
- Thyrotoxicosis
- Some adrenal tumours

Examination :

1) Always offer a chaperone (nurse) and record her name.

2) General Examination :
   - Vital Signs (general appearance, BP, HR, RR).
   - Conscious level.

Ask the patient to undress to the waist and sit upright on a well-illuminated chair or on the side of a bed -- leaving her with the chaperone until undressing is successful and make sure she is covered with something until the start of examination

3) **Local Examination :**

Positions of the patient

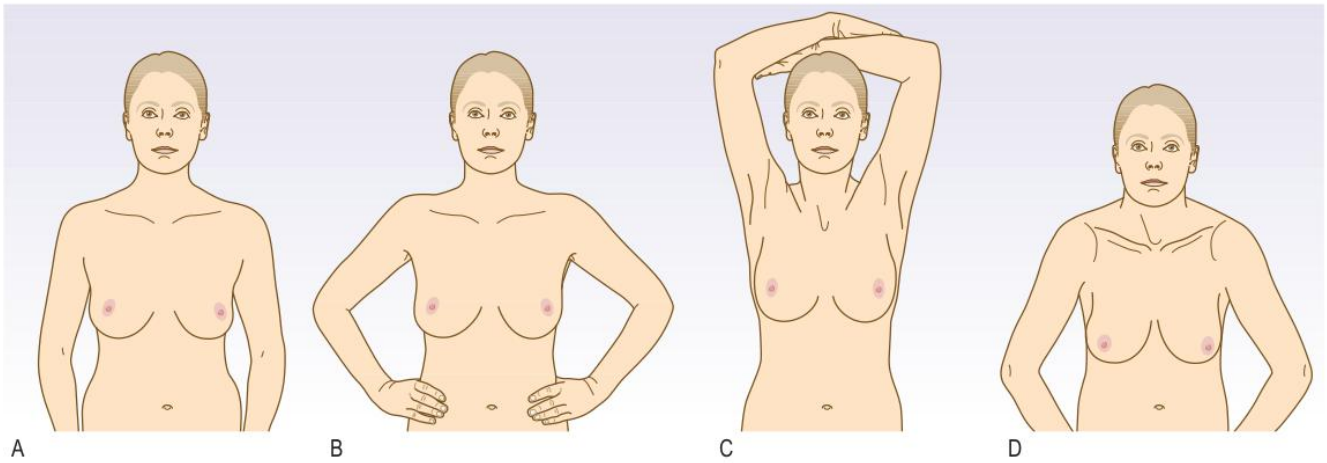


Fig. 11.9 Positions for inspecting the breasts. A Hands resting on the thighs. B Hands pressed on to the hips. C Arms above the head. D Leaning forward with the breasts pendulous.

Areas to inspect, palpate and comment on

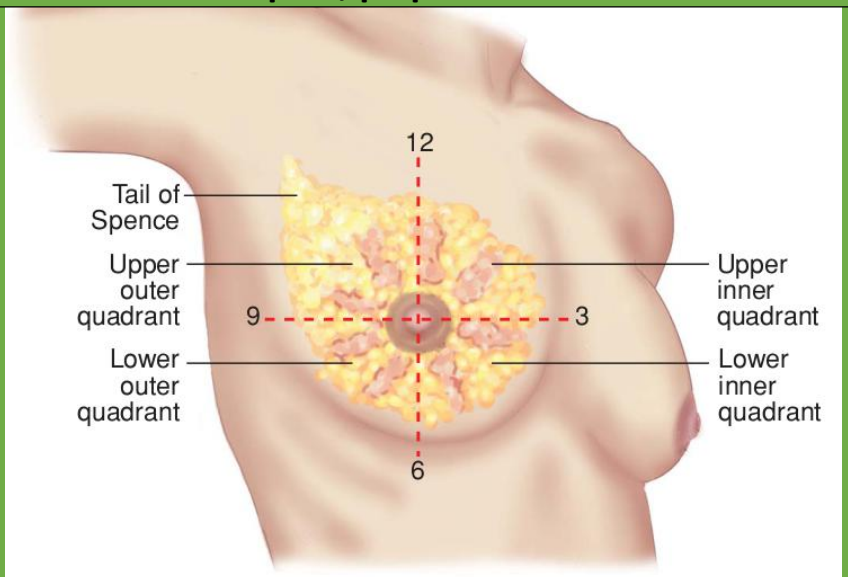


FIGURE 10-2. Breast quadrants.

--Inspect while the patient is sitting--

1- Relax pectoral muscles (by asking the patient to rest her hands on her thighs) - fig-(A).

2- Look for :

- Breast Asymmetry.
- Any Masses.
- Skin lesions.
- Ulceration.

- Skin/Nipple changes (discharge/ulceration/retractions/skin dimpling/scars).

3- Comment out your findings.

Eg : On inspection, the two breasts aren't symmetrical, there's a breast mass at the upper right outer quadrant at 10'clock, there is nipple inversion on the left breast.

4- Contract pectoral muscles (by asking the patient to press her hands firmly on her hips) and inspect again adding any new changes and if the previously inspected mass moves with muscle contractions or it's free. fig-(B)

5- Comment your findings.

6- Exacerbate skin dimpling technique (by asking the patient to place her hands behind her head and lean forward), inspect and comment out your findings. Fig-(C)

--Palpate while the patient is lying down--

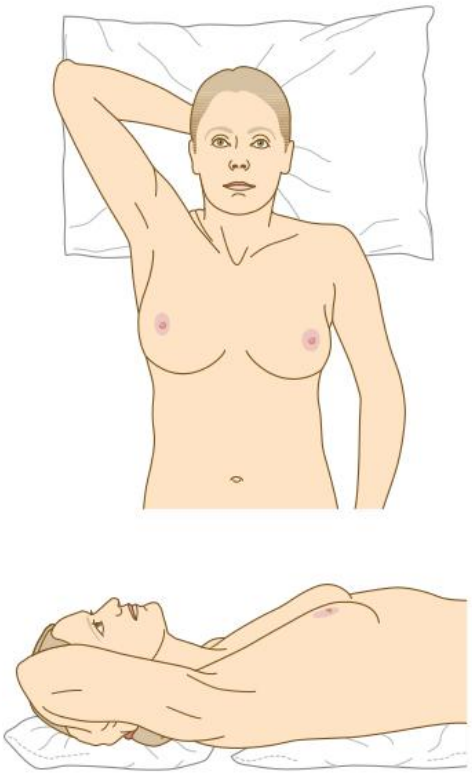
Position for examination (starting from the healthy breast)


Fig. 11.10 Position for examination of the right breast.

Examination technique

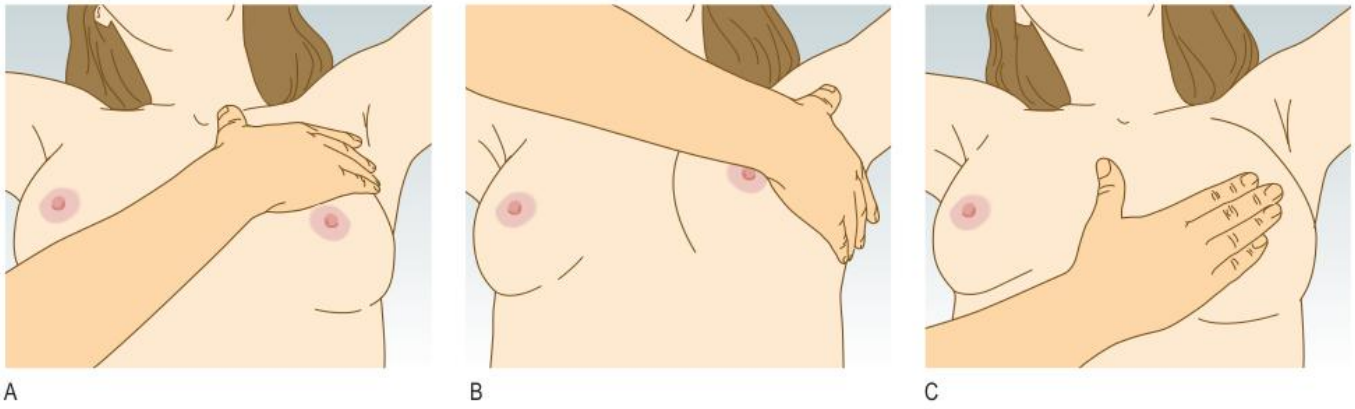


Fig. 11.11 **Clinical examination of the breast.** Palpating clockwise to cover all of the breast.

Palpate the nipple

FIGURE 10-14. Palpate the nipple.

Test for any nipple discharge

FIGURE 10-15. Compress the areola for nipple discharge.

- ✓ Palpate circularly in a clockwise manner starting from the outside and moving inwards.
- ✓ Palpate the nipple and areola for any changes and discharge.
- ✓ Elevate the breast with your hands and inspect for any skin dimpling (suggests an underlying tumor).
- ✓ Examine the axillary tail (by holding it between fingers).

✓ If you have found a mass, comment it out :

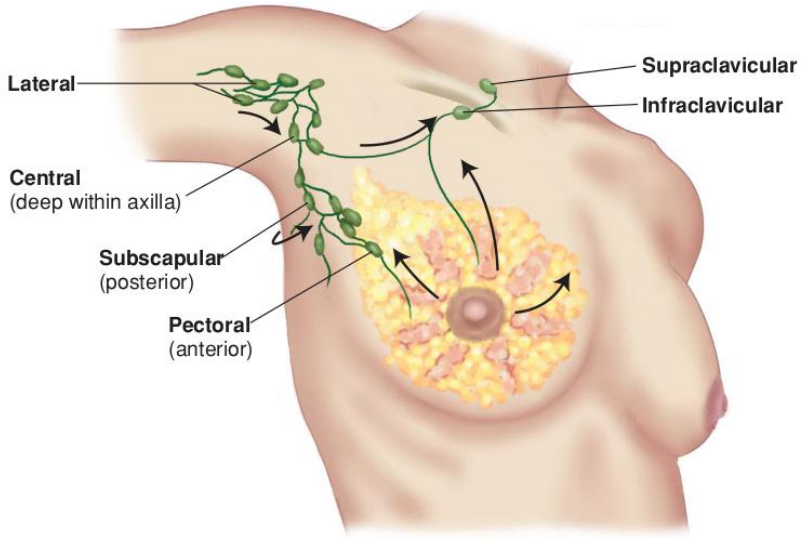
3.8 Features to note in any lump or swelling (SPACESPIT)

- Size
- Position
- Attachments
- Consistency
- Edge
- Surface and shape
- Pulsation, thrills and bruits
- Inflammation:
  - Redness
  - Tenderness
  - Warmth
- Transillumination

✓ Check if the mass is fixed :

- ◆ To the underlying skin -- by grasping a skin fold abve the mass and moving it around.
- ◆ To the underlying muscles and fascia -- by asking the patient to tense her hands on her hips (contract the pectorals) while holding the mass.

--Palpate regional lymph nodes--

Direction of flow	Groups
 FIGURE 10-6. Direction of lymph flow.	Within the Axilla : ✓ Lateral Group ✓ Central/Deep Group ✓ Anterior Group (Pectoral) ✓ Posterior Group (Subscapular). Within the clavicular region : ✓ Supraclavicular Group. ✓ Infraclavicular group. Within the Head and neck. NB : not all the lymphatics of the breast drain into the axilla. Malignant cells from a breast cancer may spread directly to the infraclavicular nodes or into the internal mammary chain of lymph nodes within the chest.

--Percussion--

- On the vertebra : for vertebral column metastasis via the azygos~external vertebral plexus route.
- On the lung.

--Check for SMJN (Sister Mary Joseph Nodule, but beware it's not specific to the breast carcinoma--

Last to know

Investigations for breast lumps :

11.2 Investigation of breast lumps

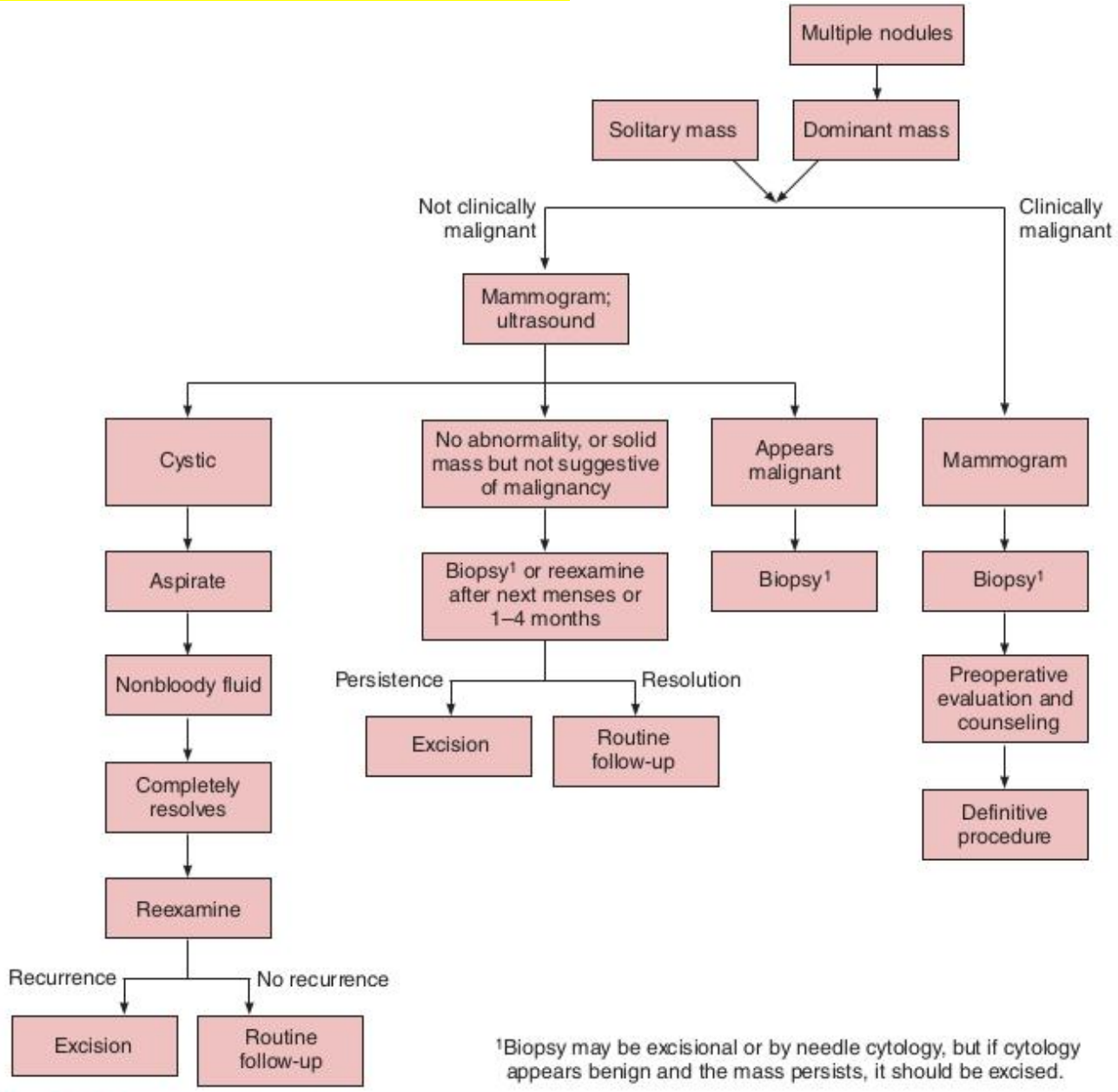
Investigation	Indication/comment
Ultrasound	Lump
Mammography	Should not be used in women under 40 unless there is a strong suspicion of cancer
Magnetic resonance imaging	Dense breasts, ruptured implant, *BRCA1/2* mutation
Fine-needle aspiration	Should not be used to diagnose primary cancer but still useful for assessing lymph nodes
Core biopsy	To differentiate invasive or in situ cancer
Large-core vacuum-assisted core biopsy	Useful for large areas of diffuse change
Open surgical biopsy	Used as a last resort when multiple core biopsies have not provided a definite diagnosis

Risk factors for developing breast cancer

Table 17–2. Factors associated with increased risk of breast cancer.

Race	White
Age	Older
Family history	Breast cancer in parent, sibling, or child especially bilateral or premenopausal)
Genetics	*BRCA1* or *BRCA2* mutation
Previous medical history	Endometrial cancer Proliferative forms of fibrocystic disease Cancer in other breast
Menstrual history	Early menarche (under age 12) Late menopause (after age 50)
Reproductive history	Nulliparous or late first pregnancy

Evaluation of breast lump :



▲ **Figure 17–6.** Evaluation of breast masses in premenopausal women. (Adapted, with permission, from Chang S, Haigh PI, Giuliano AE. Breast disease. In: Berek JS, Hacker NF, eds. *Practical Gynecologic Oncology*, 4th ed. LWW, 2004.)

Last Record your findings :

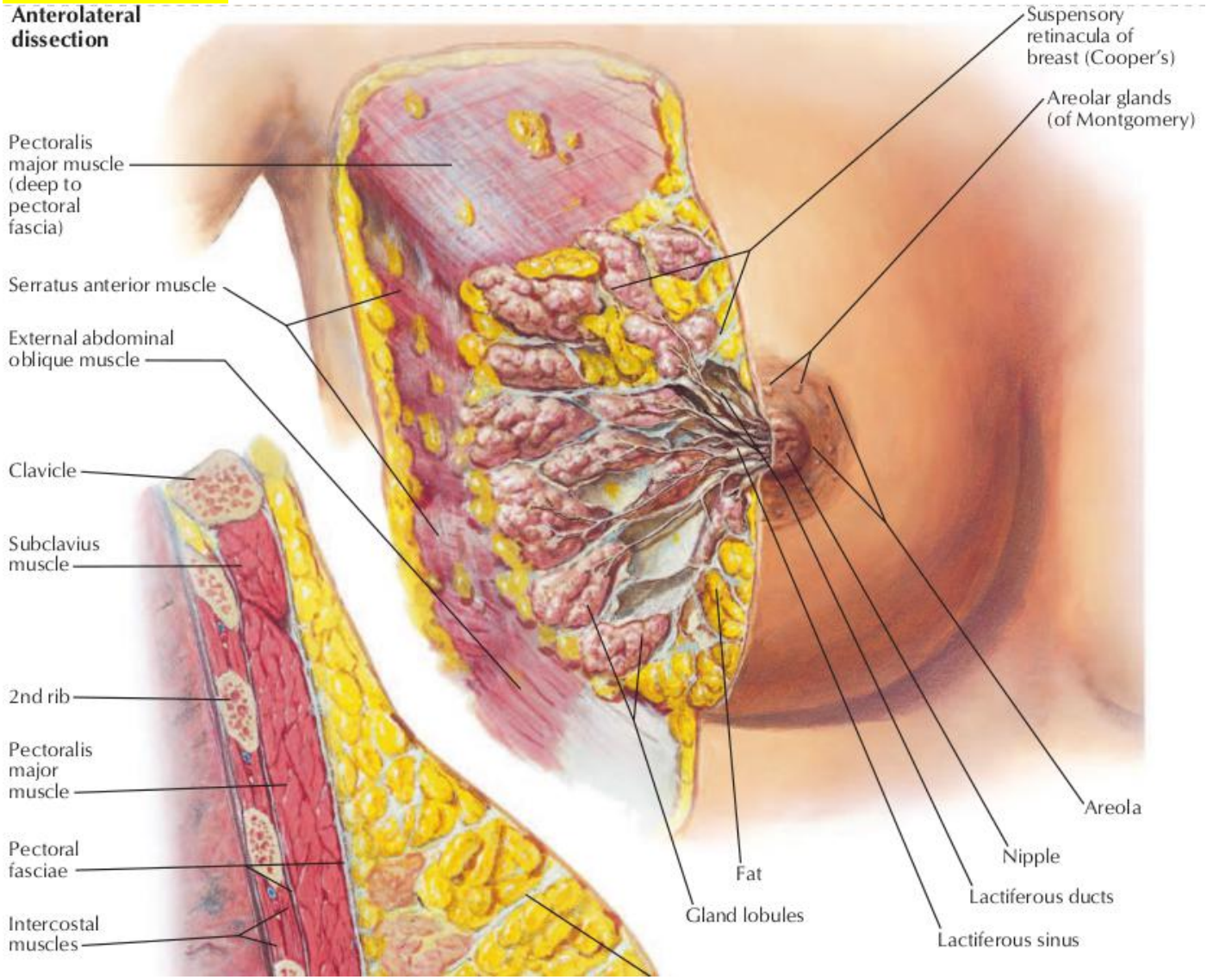
Recording the Breasts and Axillae Examination

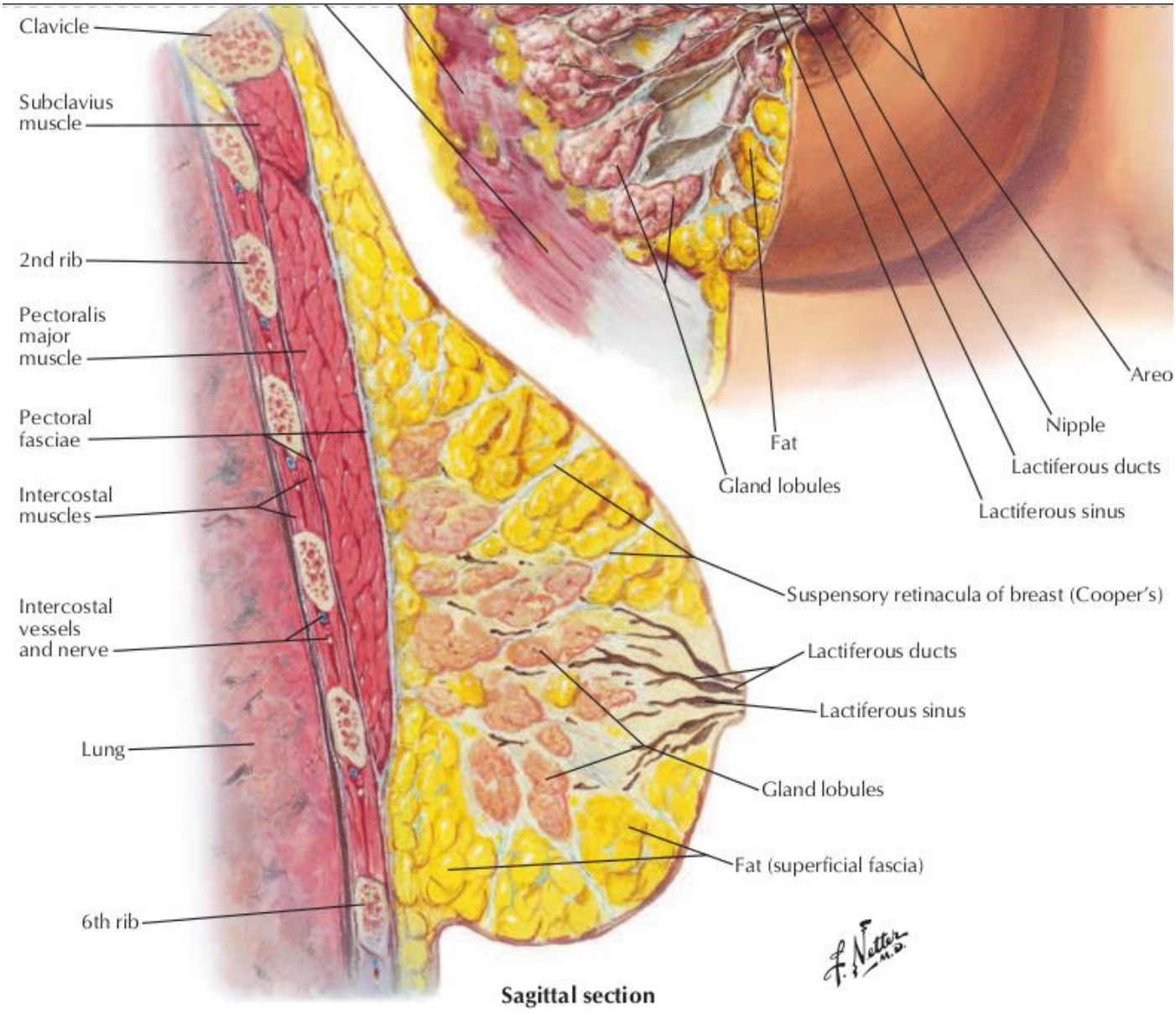
"Breasts symmetric and smooth without nodules or masses. Nipples without discharge." (Axillary adenopathy usually included after Neck in section on Lymph Nodes; see p. 266.)
OR
"Breasts pendulous with diffuse fibrocystic changes. Single firm 1 × 1 cm mass, mobile and nontender, with overlying peau d'orange appearance in right breast, upper outer quadrant at 11 o'clock, 2 cm from the nipple."

These findings suggest possible breast cancer.

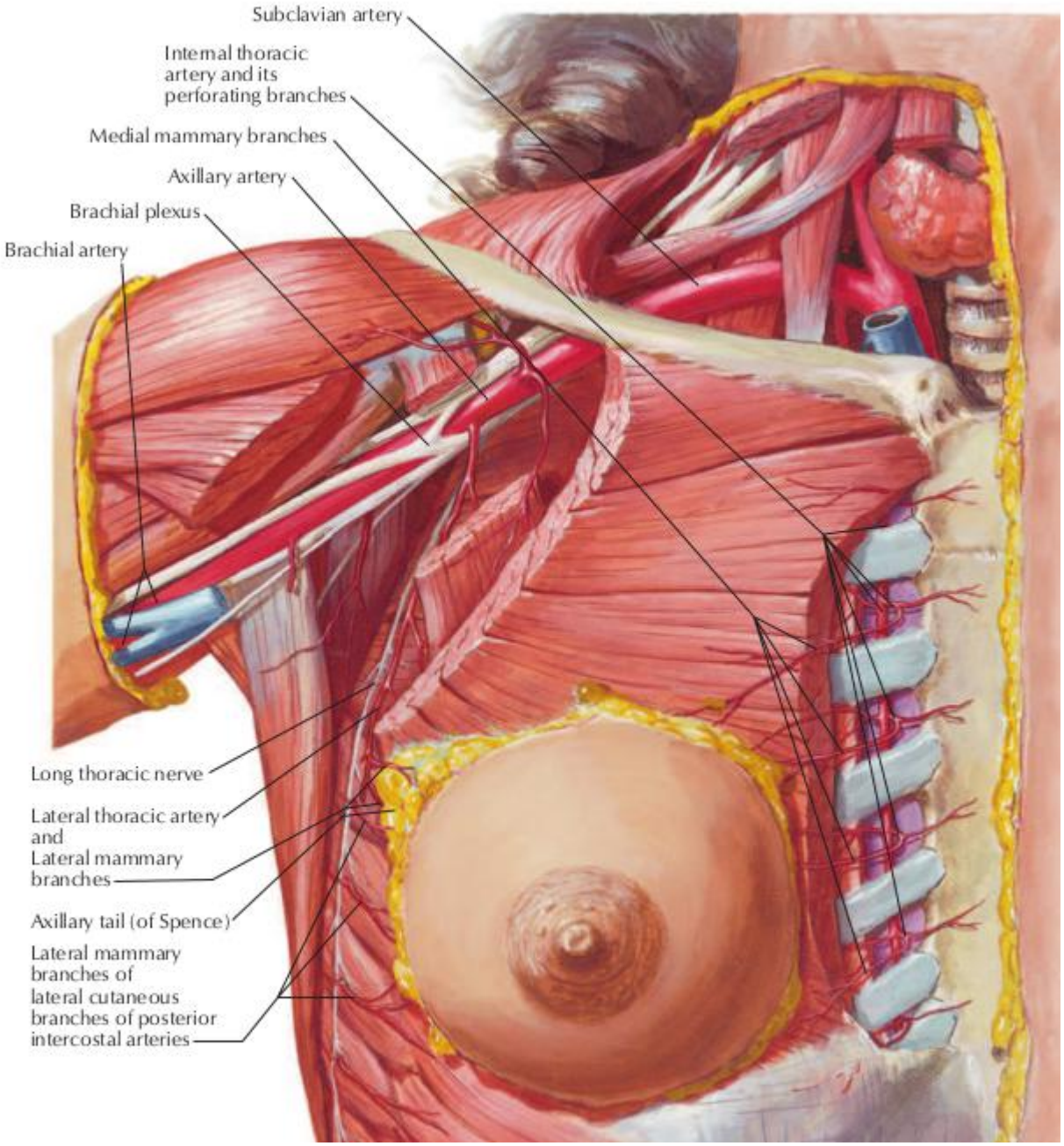
Thumbnails

Anatomy :





Sagittal section



- Breast is suspended by the suspensory retincula of breast (Cooper's Ligaments).
- Cooper's ligaments arise from the pectoral fascia.
- Breast = 15 - 20 lobes
- 1 lobe has 1 major lactiferous duct.
- 1 lobe = 20 - 40 lobules
- 1 lobule = several Alveoli + ductule.

Fig. 11.4 Skin dimpling due to underlying malignancy.

Fig. 11.5 *Peau d'orange* of the breast.

Fig. 11.6 Paget's disease of the nipple.

Fig. 11.7 **Breast cancer presenting as indrawing of the nipple.** Note the bloody discharge on the underclothing.

Fig. 11.8 Drug-induced gynaecomastia caused by cimetidine.

Resources :

1) Macleod’s Clinical examination.
2) Bate’s Guide to physical examination.
3) Netter’s Atlas of human anatomy.
4) Current Surgery 14th edition.