Examination of a Breast Lump

Inspection

Expose the patient from the waist up. First do comparative inspection of both breasts and then inspect the affected breast.

Position (for comparative inspection)

1. Sitting erect, with both arms by the side.
2. Sitting erect, with both arms raised above the head.
3. With the patient bending forwards. (In carcinoma the affected breast will not fall freely and lags behind).

Do Comparative Inspection for:

1. Visible lump or bulge (note the quadrant in which it is situated)
2. Compare the level of the nipples (the nipple will be at a higher level if it's fixed by a malignancy, this is more pronounced when arms are above the head)

If the breasts are identical, measure the vertical distance from the clavicle and horizontal distance from the midline (to know the exact displacement of the nipple)

Auchincloss's method: the visible signs of breast carcinoma become more prominent on raising the arms. In this position inspect the undersurface of the breasts; also inspect both axillae for swelling.

Inspection of the affected breast (nipple and areola)

Nipple

1) Nipple displacement: check to see if it is:

- Towards the lump (carcinoma)
- Away from the lump (bening lump)

2) Nipple retraction: check to see if it is recent or congenital, it is usually associated with diminished size of areola. Recent retraction is highly suggestive of carcinoma.

3) Nipple discharge: (check underwear for color and amount of discharge)

- Bright red discharge:
  - Carcinoma
  - Duct papilloma
- Blackish red discharge
  - Duct papilloma with obstructed duct
- Clear watery or greenish discharge
  - Fibroadenomas
- Mily white discharge
  - Lactation
  - Galactocele
  - Mammary ductectasia
  - Galactorrhea
- Purulent discharge
  - Acute mastitis
  - Chronic abscess with duct ectasia

Areola

- Cracks
- Fissures
- Eczema
    - Unilateral with destruction of the nipple: Padget's
    - Bilateral and itching: allergic eczema

Overlying skin, inspection of:

1. Redness, shininess, edema (inflammatory) and dilated veins (suggest sarcoma rather than carcinoma)
2. Retraction and puckering
3. Peau d'Orange appearance (due to cutaneous lymphedema with pitting at the site of hair follicles where the skin is firmly attached)
4. Ulcers and nodules

Lastly insect the arm for edema

Review

Inspection

1. Inspect both breasts simultaneously
    - For asymmetry and lump
    - For level of nipples
2. Inspect the nipple and areola
    - Nipple
        - For deviation, displacement
        - Retraction, cracks
        - Nipple discharge
    - Areola
        - For cracks, fissures
        - Eczema
3. Inspect the sign over the breast
    - For redness, shininess, edema and dilated veins
    - Retraction, puckering
    - Peau d'Orange appearance
    - Ulcers and skin nodules
4. Inspect the arm for lymphedema
    - Lympatic obstruction in axilla

Palpation

Let the patient lie supine on the examination table. Note the skin temperature over the lump comparing it to the normal breast. Then notice the consistency of the normal breast tissue on the normal side before palpating the affected breast.

First palpate with a flat hand rolling and feeling the breast between the palmar surface of the fingers and the underlying chest wall to identify any breast lump. Then palpate between the fingers and the thumb to note the consistency of the breast tissue. Palpate the four quadrants of the breast and then the tissue beneath the areola and then the axillary tail.

Once the lump is identified with a flat hand, palpate it between the fingers and the thumb to note its characteristics:

1. Size of the lump (in cm)
2. Shape
3. Surface: smooth/irregular
4. Edge: well-defined/ill-defined
5. Consistency: soft, firm, hard or cystic

Now press from the periphery towards the nipple in a squeezing action in each of the quadrants and look for nipple discharge. If this fails to bring a nipple discharge, compress the breast tissue under the breast and the areola between the thumb and other fingers. Note:

- Black discharge in duct papilloma.
- Milky discharge during lactation. In a newborn child, a milky discharge maybe expressed for the first few days due to the effect of maternal hormones on the child (Witch's milk)

If the swelling is soft and cystic as in galactocele, chronic abscess, or cystic hygroma then test for fluctuation and trans-illumination. Trans-illumination should be carried out in a dark room with a powerful torch. Place the torch on the undersurface of the breast. Normal breast tissue is translucent. A cystic hygroma maybe transilluinant, but most other breast swellings are opaque and cast a negative shadow.

Test fixity:

- To the skin
- To the breast tissue
- To the pectoral fascia and muscle
- To the chest wall

1) Fixity to the skin

If the skin is puckered, ulcerated or infiltrated then the lump is obviously fixed to the skin. If not, then slide the skin over the lump and test its mobility. Also, try to pinch the skin over the swelling. If the skin is not fixed to the lump, move the lump from side to side and see if the skin gets dimpled. If there is dimpling then the lump is tethered to the skin.

2) Fixity to the breast tissue

Stretch and fix the breast tissue over the lump with stretched thumb and middle fingers of the left hand. Now try to move the lump in all directions with the right hand.

- Fibroadenoma is freely mobile and not fixed to the breast tissue. Often it is so freely mobile within the breast tissue that it is termed as a breast mouse.
- A malignant lump that is fixed to the breast tissue becomes immobile when the breast tissue is fixed by stretching.

3) Fixity to the Pectoralis major and Serratus anterior

Ask the patient to place her hands on her waist. First test the mobility of the lump in the direction of the fibers of the Pectoralis major and at a right angle to it while the muscle is relaxed. Now ask the patient to press her hands firmly over the hip. Palpate the anterior fold of axilla to confirm that the Pectoralis major is contracted and taut. Move the lump again in the same two directions. Any restriction of mobility on contraction of Pectoralis muscle suggests the fixity of the lump to the Pectoralis muscle or fascia.

If the lump is in the outer and lower quadrant, it lies on the Serratus anterior, so we test fixity to Serratus anterior. Let the patient stand at arm's length from a wall with the palms resting on the wall. Test the mobility of the lump in horizontal and vertical directions. Now ask the patient to push against the wall with outstretched hands, this contacts the Serratus anterior. Now test the mobility again. Any restriction of mobility indicates fixity of the lump to the Serratus anterior. Now inspect the scapulae as the patient is pushing against the wall. If there is winging of the scapula on the affected side, it indicates paralysis of the Serratus anterior due to involvement of the long thoracic nerve.

4) Fixity to the chest wall

If the tumor is fixed and immobile even when the Pectoralis major is relaxed then it is fixed to the chest wall.

Review

Palpation:

1. Temperature and tenderness
2. Size, shape, surface and edge of the swelling
3. Consistency
4. If cystic: fluctuation and trans-illumination
5. Nipple discharge
6. Fixity to surrounding structures

Examination of lymph nodes

With the patient in sitting position ask her to keep the arm hanging loosely by the side.

- First palpate against the medial wall of the axilla (along the chest wall) for the **central** group of lymph nodes.
- Move the hand higher up for the **apical** group.
- Then palpate under the anterior axillary fold for **pectoral** group of lymph nodes and under the posterior axillary fold for the **subscapular** group.
- Now palpate the lateral wall of the axilla against the upper end of humerus for the **brachial** group of nodes.
- Then palpate below the clavicle in the deltopectoral groove for the deltopectoral (**infraclavicular**) group.
- Now stand behind the patient and palpate the base of the anterior triangle of the neck behind the middle of the clavicle. Lift the patient's arm with the other hand to relax the muscles and the cervical fascia. This is the **supraclavicular** group of lymph nodes.
- Next palpate the opposite axilla in the same manner. If any one or more groups of lymph nodes are palpable note their site, number, consistency and mobility.
- If the lymph nodes are enlarged examine the arm, forearm and dorsum of the hand on the affected side for edema and compare it with the opposite arm. Edema of the arm indicates lymphatic obstruction in the axillar or axillary vein thrombosis.

Systemic examination

1. Abdomen for hepatomegaly and free fluid
2. Per-vaginal and Per-rectal examination
3. Chest for effusion and consolidation
4. Bony swellings and tenderness