Breast diseases

Dr. Amal Abdulkareem sound lecture

Surgery team:
Fatima Alkhashram, Sarah bin hussain

The breast is divided into 4 quadrants

The upper outer quadrant is the most important one, why? Because most of it is a fibrous tissue and mostly all malignancy occur in this area, but remember nothing is absolute you can get malignancy in anywhere in the breast.

Nipple: if we have 18 years girls we will found it at the level of the 4th rib (or 4th inter costal space), but it could be anywhere higher or lower, "various level".

Areola: the pigmented area surrounding the nipple.

Gland of Montgomery: it is little gland in the areola, why it is important? It lubricates nipple and areola during lactation, sometime the patient thinks she has a serious problem, but it is simply an occlusion (obstruction) of this gland.

Breast is group of glands and ducts, it contain from 15-20 lobe which are divided into lobule, which are formed of important part which are the alveoli (contain milk producing cells) and the lactiferous duct (which drain into opening in the nipple), located at the end of the breast tissue.

The breasts compose of 3 types of tissues: glandular, fibrous and fatty tissue.

Cooper ligaments: fibrous band that extend from the muscle (the deep fascia of the pectorals major m.) to the skin of the breast, Why it`s present? To support the breast. During any mass or edema it will retract the breast tissue and give the breast the appearance of **peau de'orange** and dimpling "or tethering" of the skin.

The importance of the fatty tissue: it gives the shape of the breast; it varies and depends on the amount of the present fatty tissue.

Lymph node: the lymphatic is so important for the breast.

Divided into two group:

The superficial group of LN, which drains the skin of the breast, so any pathology of the skin and the subcutaneous can involve the superficial LN, it drains directly to axilla.

Deep group of LN, which drain into the deeper part of axilla (most important thing we have to know), these group of lymph node are (axillaries, supraclavicular, internal mammary group). Internal mammary group you can`t feel them because they are beneath the sterna. Axillary group you can feel them, they are enlarged most of the time.

We can divide the lymph node according to malignancy into level.

Based on what when we divide them into level? On the tendon of the pectorals minor muscle, which attach to the humeral and divide the axillary LNs to level.

Difference between group and level of the axillaries LN.

The axillary 5 **group**s are: anterior, posterior, medial (apical), lateral, central

The axillaries LN **levels** are: (upper, lower and higher level)

Anything **below** the tendon of pectorals minor muscle we can call it level one lymph node, **behind it** level two and **above it** level three, it is important in the metastasis of the breast malignancies.

"we have to palpate: axillary and supraclavicular"

Pathology of the breast.

Variation present in the breast:

- Accessory breast tissue.
- Accessory nipple
- Asymmetry of the breast.

All of them can be considered as disease of the breast but not pathological.

We can see accessory nipple along the milk line (at or around it), it appears b\c of congenital process.

The only variation could appear not cause of congenital reason is the accessory breast during any hormonal change (during lactation, pregnancy and puberty"development"). Accessory nipple could be inside the breast itself, so it can produce milk because it is made of breast tissue.

Asymmetrical breast: that is the biggest problem with teenager. Because they concern about how they look, they try to find solution anywhere because of psychological problems and difficulty wearing bra, what can we do for them? Nothing, because they are at the development period (we are not going to do a reduction of the breast tissue).

Breast went under change during puberty, pregnancy, lactation and during post menopause "goes under involution", which is benign and consist of fatty tissue → soft breast.

Why we cannot do mammogram for young age lady? Because she has a dense tissue, most of it is gland tissue, so increasing age lead to the replacing of the glandular tissue with the fatty tissue and fat is lucent, so any mass or abnormality can be seen by mammogram.

Physical Examination

You have to know how to examine the breast. In semi setting or supine position, left up her arm, etc.

Check for inframammery cord, axilla, evidence of tethering or abnormal mass and ask the patient to press against her hip, to contract the pectorals muscle, any mass or tethering will be visible.

Tethering"skin dimpling": important to check contour of the breast, any change could indicate pathology (can be malignant, infection or post-surgery). Tethering indicate malignant feature of breast.

Dimpling in elderly patient Considered normal, because all the breast tissue will be atrophied so the cooper ligament now will be attached and give the appearance of tethering يعني مو حد يروح يشوف جدته ويقولها عندكmalignancy

Skin dimpling and mass can be considered as malignant.

Inverted nipple: (have lots of pathology):

First thing you have to exclude malignancy, also It could be normal.

If women presented with inverted nipple very early in her life it can be of congenital reason, the problem she may face is difficulty during lactation and repeated infection.

Nipple discharge:

galactorrhea: That can be considered normal, women who are not lactating can be present with galactorrhea, she can have pituitary tumor so, anything present with Bilateral nipple discharge usually b\c of systemic reason not localized breast pathology.

Benign disorder of the breast:

Most important one is fibrocystic change, it is the commonest pathology of the breast, and it consists of fibrous tissue and cyst.

Breast pain:

Most of women at least experience cyclic pain once in their life especially in the outer upper quadrant, the pain getting worse a week before menstruation and improve during period, why it improves? First cyst is formed then fluid start to accumulate inside it under the effect of estrogen and progesterone so women will present with fibrocystic changes.

Fibrocystic change (FCC)are called lumpy bumpy breast, if you check your breast you may find nodule, most of the time it is a feature of fibrocystic change, but not all the time a present of nodule indicate FCC "women with a lot of gland in her breast could feel it lumpy not considered pathology" . 30-80% of female will have it during their life, affect 30-50 years old female, incidence decrease with the decreasing of age, usually caused by hormonal imbalance and get cure by hormonal therapy. Most of them present with pain, some time they present with cyst that they feel it as a mass (single or multiple), or may present with asymmetry of the breast due to the FCC. Do cytology to make sure there is no underlying malignancy.

After menopause most of symptom will settlement, provide that patient doesn't take hormonal therapy. Treatment: analgesia is the best treatment, non steroidal and wearing good supported bra "full cup to support breast against chest wall" (don't wear will cause more flood so get worse more painful & more cyst formation) and ask the patient to reduce the intake of coffee and tea which increase the fluid retention "some time they give them diuretics", some time we give the patient oral contraceptive, why? To stop ovulation (stop the estrogen surge during ovulation, that cause the congestions. "But try to avoid playing with hormones".

Sever cases (danazole, Tamoxifen) can be used in intractable pain

Fibroadenoma "صديقة الجميع"☺:

It consist of fibrous tissue and glandular tissue, benign, well –capsulated tumor, arises in the breast and usually affect young age ladies (15-35 years), they say it is common in black, but it is really common here in Middle East. **It is never being malignant**.

There are the multiple fibroadenoma, regular, nodular, giant and phyllodes. (Doctor said go and read about them, no time to cover all of them).

Most important to know that the giant fibroadenoma is anything above 5 cm, it has to be excised the only reason is that it is big and will compress the breast tissue.

Phyllodes fibroadenoma (Cystosarcoma phylloides**):** it is variation of fibroadenoma there is a tendency for local recurrence if not completely excised and a chance to be malignant, (but remember fibroadenoma alone never be malignant)

biopsy → found it phylloide→ reportable case of malignancy.

For fibroadenoma, you don't have to remove it, except if it is:

Painful, more than 5cm, phylloide, or have family history of malignant (Only for psychological reason because patient will keep thinking it was malignant). If it was multiple only remove the painful and big one, pt have no access for regular follow up or if she has cancer phobia.

What will happen if I left it? It can stay as it is, or grow slowly (during lactation or pregnancy) or it can dislikely be smaller in size, how? necrosis happen in the center → it will shrink.

Image: by doing US. "Most likely it will come in young people"

*Calcified mean long standing but no problem with it.

Wisdom from doc☺: "NEVER assure pts based on the examination & US you have to do tissue diagnosis (biopsy)"

Intraductal papilloma:

Remember ducts normally 2-3 mm in size. The commonest presentation will be the bloody discharge from the nipple, small grow in the epithilum tissue, never palpable (but it can be, if the duct get block because of the accumulation of the secretion. It is phylloed like lesion, usually it is single and located in the terminal duct, and it can involve the whole length of duct.

We have to do US or mammogram according to the age? Why? To exclude other malignancy or other pathology

Papilloma have two type intraductal papilloma (single which is totally benign) and there is intraductal papillomatosis which consider premalignant condition

*Tosis (mean growth of tissue).

Management most of the time you can assure the patient, do ductogram and be sure it was single papilloma , we cannot do biopsy because it's too small, if it improve with time no more nipple or blood discharge you can assure her and follow with US, BUT IF blood is persistent you can excite the ductal tissue. Papillomatosis you get it out.

As we said before if the discharge came through a single duct, unilateral and spontaneous we can call it pathological discharge, but when it is bilateral and came through multiple duct we cannot consider it as pathology of the breast (caused by systemic reason ex: hormonal imbalance..).

Duct ectasia: it is a common pathology in women in the late 30s to the end of their life, it is a dilation of the lactiferous duct, it happens due to pregnant, lactation and by age process. It is a physiological change "can't say it is pathological" the main problem in ductetectasis is the prominent discharge (yellowish, greenish) some time it present with breast infection.

They also present with inverted nipple, the most important thing is to differentiate it from malignancy. The slip like nipple is most likely to come with ductectasia ,how? Dilation of the duct , present of the cooper ligament any dilation will pull the nipple down so give you the appearance of inverted nipple slip like but you have to be sure it is not malignant.

You have to differentiate inverted nipple b\c of duct ectasia or b\c of malignancy, how? by mammogram, US and if there is a mass take biopsy, if you assure it is a ductectasia , send secretion for cytology and do culture, the only problem that can face her is breast infection which is called periductal mastitis or periductal abscess which was treated by antibiotic and if there is abscess drain it .

In the periductal mastitis: present with multiple organism “opposite to lactating women”, because it is a chronic process where we usually get multiple organism. Dose it affect breast feeding? No, she only has to clean it before she start. What bother them is the hygiene they don’t feel that they are clean, but it is not a disease.

Some of the patient have هوس في النظافة so they Suck or squeeze their nipple all time to clean it, the repeating will stimulate milk secretion so you see pus, milk and blood coming out of the nipple and it can injure the duct then blood came out, so we have to ask them how the blood came by itself or by squeezing the nipple, if it was by itself → consider it pathology, if it was by squeezing the nipple ➔ you can ignore it.

Multiple colors of discharge usually not considered as pathology

Mastitis:

commonly affects lactating women or ladies with congenital problem like inverted nipple. The entire breast will be involved, full of milk, high blood flow there, if any crack in the nipple or the sucking child introduce some source of infection to the mother she will present with mastitis, it is equal to cellulites but when it happen in the breast we call it mastitis. We treat it as we treat cellulitis with analgesia (it is painful) and I.V antibiotic (penicillin or cephalex if allergic to them erythromycin), most of the time lactating women will be infected with staph.aures.

Some child colonized by MRSA penicillin resistance, treat her with vancomycin but it’s not common.

She don’t have to stop lactating if she worried about antibiotics she can empty her breast.

If we see women with diffuse mastitis you have to differentiate it from inflammatory malignancy (carcinoma): diffuse swelling with **peau de’orange** appearance in non-lactating women, sometime women above 40-50 or menopause it is not usual to have mastitis at this age, so here make sure it is not inflammatory carcinoma.

“Get hint when she wear lactating bra its mastitis b\c of lactation”

In the inflammatory carcinoma you will see the **peau de’orange** appearance, but there will be no feature of inflammation, no fever, sever pain, rigor, nipple discharge or pus and she is not lactating. So why it give us impression of mastitis? Because of all thickening, cooper **ligament and the blood flow.**

What will happen if we not fully treat mastitis? It will cause abscess, how? Because our bodies try to localize the infection with macrophage and phagocyte→ localized and form abscess, could present with nipple discharge, pus, blood, fever, rigor, and it was very painful how to treat it? By antibiotic according to the sensitivity, drainage of abscess and analgesic, before drain you can some time do aspiration (cytology, culture) to be assured.

Imp: Where to drain the abscess? At the abscess area, “at most thin area in the centre”.

Fat necrosis: patient will present with diffuse lump, most of the time it is not painful and she don`t remember when she have trauma, but then few month later she will present with diffuse mass carrying the feature of malignancy, if you do mammogram or US according to her age, will show diffuse calcified nodule, speculation, how to make sure?? by biopsy

We don’t treat her only assure the patient, it will resolve with time.

Phyllodes tumor: we already talk about it, it is a **variant** of fibroadenoma, it is a giant fibroadenoma, but don't put in your mind that it have to be giant it could be small fibroadenoma of only (2-3 cm).

different between it and fibroadenoma: the fibroadenoma (it`s a glandular tissue +fibrous tissue), but the phyllodes have more fibrous tissue, so it is more like sarcoma.

Have to treat it from the beginning; if it was benign you have to take it completely, if it was malignant you have to treat it as malignant "as the sarcoma" and usually it doesn't metastasis by the lymph node. It metastasis by blood

Gynacomastia: enlargement of male breast tissue, the most important thing is to exclude underlying malignancies like Estrogens producing tumor (testicular tumor, adrenal tumor) or extra-adrenal secreting tumor like lung malignancies, in male we are worried about non-breast tissue problem (other source of hormones).

Male don't have breast tissue so it difficult to do mammogram in male.

You expect enlargement breast in obese patient but you have to do US to exclude pathology.

Nipple discharge:

Most important thing about the nipple discharge is to exclude malignancies.

Imp: the most common cause of bloody discharge is intraductal papilloma (MCQ)

And the commonest cause of general nipple discharge is fibrocystic change and ductectasia. Also it could be of non-breast pathology (thyroid, pituitary and adrenal).

Malignancies of the breast:

There are 2 types: ductile carcinoma and Lobular carcinoma

Ductile carcinoma: it is the commonest problem in the breast. There is ductile carcinoma in situ and invasive ductile carcinoma.

How to stage patient with invasive carcinoma:

- Stage 1: anything less than 2cm localized to the breast.
- Stage2: anything with axillary lymph node
- Stage3: if there is any skin changes or fixed axillary lymph node.
- Stage4: any metastasis mass.

Stage 1 and 2: surgery (mastectomy, lumpectomy), and chemotherapy

Stage3: they need to have the neoadjuvant, chemotherapy before the operation to reduce the size of the tumor and then you operate for them

Stage 4: go directly for chemotherapy

Lobular carcinoma:

The same apply here for lobular carcinoma but the only different is that it is multicentric (came in more than one area), different than multifocal (same area have multifocal). And there is tendency to come in the other breast (bilateral) so its imp to ask in history about other breast problem.

Other Rare pathology of breast: sarcoma, cystosarcoma, lymphoma

Gold slandered: mammogram and US and **biopsy Imp.**