Aberrations of normal development and involution (ANDI)

ANDI classification of benign breast disorder:

Normal →	disorder →	Disease

- *Early reproductive yrs. 15-25 yrs.*

1) Lobular development	fibroadenoma →	Giant fibroadenoma
2) Stromal development	Adolescent hypertrophy→	Gigantomastia
3) Nipple eversion	Nipple inversion	*subareolar abscess
		*Mammary duct – fistula.

- Later reproductive year 25-40 years.

Cyclic changes of menstruation	Cyclic mastalgia and nodularity	Incapacitating mastalgia
Epithelial hyperplasia of pregnancy	Bloody nipple discharge.	

- *Involution*

Lobular involution	Macrocyst	
duct involution		Periductal mastitis.
- dilation	Duct ectasia	
- sclerosis	Nipple retraction	
- Epithelial hyperplasia	Epithelial hyperplasia	Epithelial hyperplasia with atypia.

- The breast is dynamic structure undergoes changes through the female's reproductive life, giving rise to the menstrual cycle.
- The pathogenesis of ANDI involve disturbance in the breast physiology extending form an extreme of normality to well defined disease process.
- The main symptoms of ANDI are 1) lumpiness (seldom discrete & 2) Breast pain (mastalgia).
- Lumpiness may be bilateral, commonly in the upper outer quadrant or confined to one guardant in one breast. The changes may be cyclical with increase in both lumpiness & tenderness before menstrual period.
- Non cyclic mastalgia is commoner the perimenopausal period.

It may be due to ANDI or Periductal mastitis.

Pathology

The disease consists essentially of four features which may vary in extent and degree in any one breast.

1. **Cyst formation**. Cysts are almost inevitable and very variable in size.
2. **Fibrosis.** Fat and elastic tissue disappears and is replaced by dense white fibrous trabeculae. The interstitial tissue is infiltrated with chronic inflammatory cells.
3. **Hyperplasia of epithelium** in the lining of the ducts and acini may occur with or without atypia.
4. **Papillomatosis.** The epithelial hyperplasia may be so extensive that it results in papillomatous overgrowth within the ducts.

Management of ANDI

- It depends on the symptom or the disease result from the disturbance in the breast physiology.

In case of lumpy breast and mastalgia, CA should be excluded.
If the clinician is confident that he is not dealing with discrete abnormality (by mammogram & ultrasound), the female should initially reassured. It is good to review the patient at different points in the menstrual cycle e.g. 6 weeks after the initial visit.
For cyclic mastalgia it is also important to exclude CA.
Mastalgia may be cyclical or non-cyclical.

For cyclic mastalgia,

1) Reassure the patient that there is no associated CA.
2) Explain the etiology to the patient. Advice the patient to avoid caffeine and to wear appropriate fitted and supportive bra throughout the day and soft bra thought-out the night.

It is helpful also to make a symptom dairy, this will help her to chart symptom pattern (pain), throughout the month & thus determine whether this is cyclic or non-cyclic.

3) If reassurance is not adequate, plan treatment as follow;

- Evening primrose oil which has better effect in female over 40 years. Given for 3 months.
- Danazole (antigonadotrophin) 100 mg /day then increase.
- For intractable pain, prolactine inhibitor e.g. boromcriptine.
- Very rarely an antiestrogen e.g. tamoxifen or LHRH agonist to deprive the breast epithelia of estrogen drive.
- ***For non-cyclical mastalgia*** it is important to exclude extra mammary cause such as chest wall pain. Some time it is necessary to carry out a biopsy on a much localized area of tenderness that may harbor a sub clinical cancer.
- ***For fibroadenoma*** when diagnosed by fine needle aspiration, it can be enucleated through a cosmetically appropriate incision.
- In patient less than 30 years, do not require excision unless associated with suspicious cytology or if they become very large or if the patient wants the lump to be removed.

Giant fibroadenoma can also be enucleated through sub mammary incision.

- ***For duct ectasia***

If mass or nipple retraction, exclude CA by negative cytology or histology and by mammography. If the mass is suspicious, remove the mass.
Surgery is the main option for cure and consists of excision of the entire major duct (Hadfield's operation).
Antibiotics tired as augmentin or flucloxaciline + metronidazole.
For nipple retraction, there are many types of nipple retraction;
1) Simple nipple inversion which occur at puberty. It usually resolves during pregnancy and lactation. Mechanical suction has an effect in eversion of the nipple.
2) Recent retraction of the nipple may be considered pathological, significant.
3) Slit like retraction of the nipple, may be due to duct ectasia.
4) Circumferential retraction with or without underlying lump may well indicate underlying CA.

It is important in case of nipple retraction to exclude CA and to reach the cause by applying the triple assessment (history & clinical examination + radiological investigation as ultrasound + mammogram + pathological investigation as cytological & histological examination.
Then the treatment will be accordingly

The principles of treatment of nipple discharge are;

a) first exclude CA
b) Reassure the patient if there is no malignancy.
c) If no malignancy & the discharge is intractable, remove the duct or ducts, by microdochectomy or by cone excision of major lactiferous ducts (if the duct of origin of nipple bleeding is uncertain, when there is bleeding or discharge from multiple ducts).

- ***For diffuse hypertrophy*** which occur due to an alteration of the normal sensitivity of the breast to estrogenic hormones & may be treated by giving antiestrogen in some cases.
- The used treatment is by reduction mammoplasty.
- ***For breast abscess*** ⇒ drain the abscess though a cosmetically appropriate incision.
- ***For breast cyst*** which occur due to non integrated involution of the stroma and epithelia, they are managed as follow:

- Aspirate the cyst. If they resolve completely & if the fluid is not bloody, so no further treatment. If cyst reappears, re aspirate.
- Aspirate the cyst. If there is residual lump & if fluid is blood stained, do core biopsy or local excision for histological diagnosis.

Galactocele

Galactocele, which is rare, usually presents as a solitary, subareolar cyst, and always dates from lactation. It contains milk and in long-standing cases its walls tend to calcify. It can become enormous.

Fibroadenoma

These usually arise in the fully developed breast during the 15—25-year period, although occasionally they occur in much older women. They arise from hyperplasia of a single lobule, and usually grow up to 2—3 cm in size. They are surrounded by a well-marked capsule and can thus be enucleated through a cosmetically appropriate incision. However, in a patient under 30 years these do not require excision unless associated with suspicious cytology, or if they become very large, or if the patient expressly desires the lump to be removed. Giant fibroadenomas occur occasionally during puberty. They are over 5cm in diameter and are often rapidly growing, but in other respects are similar .to smaller fibroadenomas and can be enucleated through a submammary incision.

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