


# Pathology of the breast

- 
- Inflammatory and reactive conditions
  - Benign proliferative lesions
  - Benign tumors
  - Malignant tumors

# Inflammatory and reactive conditions

## Fat necrosis

- can simulate carcinoma clinically and mammographically
- history of antecedent trauma, prior surgical intervention
- histiocytes with foamy cytoplasm
- lipid-filled cysts
- fibrosis, calcifications, egg shell on mammography

# Inflammatory and reactive conditions

## Hemorrhagic necrosis with coagulopathy

- Warfarin treatment – shortly after initiation
- edema, hemorrhage, necrosis (thrombi in small blood vessels )

## Puerperal mastitis

- early stages (2<sup>nd</sup> and 3<sup>rd</sup> W) of lactation – 5%
- stasis of milk in distended ducts + **staphylococci**
  - abscess formation (AB, incision and drainage)

## Granulomatous Lobular Mastitis

- etiology unknown,
- **Mammary duct ectasia**
- periductal inflammation, duct sclerosis
- intermittent nipple discharge

## Tuberculosis

- less developed regions - serious condition
- lactating breast, inoculation via the lactiferous ducts
- slowly growing, solitary, painless mass

# Benign proliferative lesions

- pathologic spectrum of seemingly related clinically benign breast abnormalities
- palpably irregular and painful breasts
- discrete lumps, multiple nodules, cystically dilated ducts, apocrine metaplasia, interlobular and intralobular fibrosis
- intraductal epithelial proliferation
  - fibrocystic disease, **fibrocystic changes**
- extremely common (58% F)

# Benign proliferative lesions

## Adenosis

- elongation of the terminal ductules
- sclerosing adenosis
- apocrine adenosis
- tubular adenosis
- nonpalpable lesion, recognized in mammograms
- microcalcifications!

# Proliferative changes

- ductal and lobular hyperplasia
- atypical ductal and lobular hyperplasia
- higher risk for the cancer than "normal" population
- associated w. microcalcifications (!mammography!)
- incidental histological finding
- atypical hyperplasia = precancerous lesion

# Benign tumors

## Fibroadenoma

- proliferation of epithelial and stromal elements
- most common breast tumor in adolescent and young adult women (peak age = third decade)
- well-circumscribed, freely movable, nonpainful mass
- regress with age if left untreated
- ducts distorted elongated                      slit-like structures

## Tubular adenoma

- far less common than fibroadenomas
- young women, discrete, freely movable masses
- uniform sized ducts

## Lactating Adenoma

- enlarging masses during lactation or pregnancy
- prominent secretory change

## Intraductal papilloma

- in the mammary ducts, subareolar lactiferous ducts
- periductal inflammation, duct sclerosis
- serous or bloody nipple discharge

# phyllodes tumor

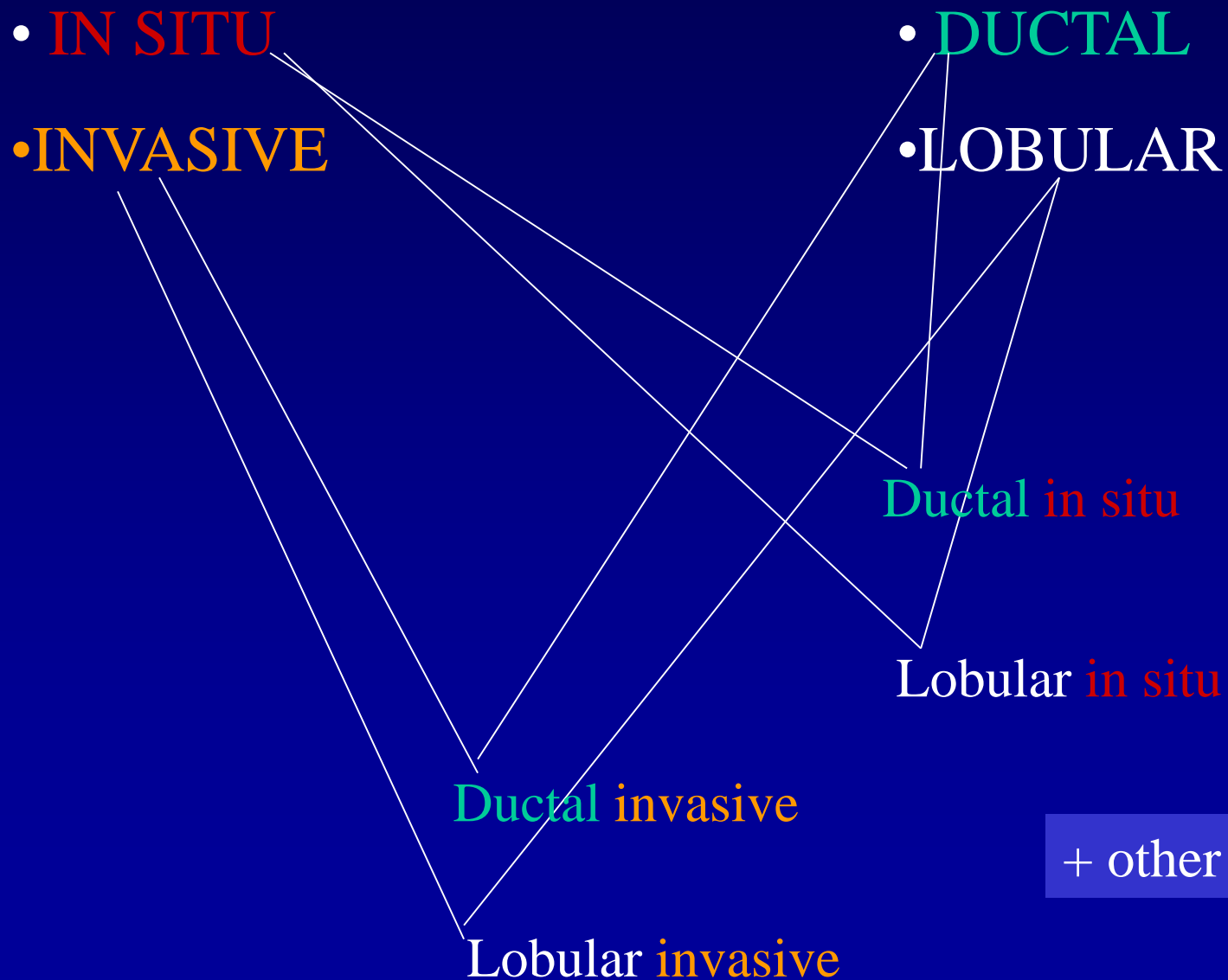
- initial description - over 150 years ago - fleshy tumor, leaf-like pattern and cysts on cut surface
- circumscribed, 1-15 cm
- less than 1 % of breast tumors
- benign,
- malignant
  - low grade
  - high grade

# Breast carcinoma

- most frequent malignant tumor in females
- highest incidence – developed countries
  - 2<sup>nd</sup> killer among cancers (1<sup>st</sup> = lung ca)
- risk factors: genetic predisposition (breast ca in close (1<sup>st</sup> degree) relatives), proliferative changes, early menarche, late menopause, history of ca (breast, ovary, endometrium)
- importance of preventive controls! – early diagnosis better prognosis



# Breast carcinoma - classification



+ other types (12)

# Carcinoma in situ

- preinvasive - does not form a palpable tumor
- not detected clinically (only X-ray – screening !!!)
- multicentricity and bilaterality (LCIS)
- continuum: *bland hyperplasia - increasing atypism - carcinoma in situ*
- no metastatic spread (basement membrane)
- risk of invasion depending on grade

# Invasive carcinoma

## Invasive ductal carcinoma

- largest group (65 to 80 % of mammary carcinomas)
- mid to late fifties
- stellate, white, firm (desmoplasia)
- less often circumscribed, soft (medullary ca)
- hormonally dependent (estrogen, progesterone)

## Invasive lobular carcinoma

- uniform cells, infiltrative growth (linear arrangement - indian file pattern)

# Invasive carcinoma

- other types: tubular, mucinous, medullary, inflammatory – together about 10 % of breast ca
- metastases: regional lymph nodes (axillary, parasternal), lungs, liver, bone, brain
- treatment: surgery (radical – mastectomy, breast conserving surgery – lumpectomy),  
radiotherapy  
antihormonal therapy (Tamoxifen)  
chemotherapy

# Paget's disease of the nipple

- result of intraepithelial spread of intraductal carcinoma
- limited to the nipple or extend to the areola
- pain or itching, scaling and redness, mistaken for eczema
- ulceration, crusting, and serous or bloody discharge

# Pathology of the male breast

## Gynecomastia

- most common clinical and pathologic abnormality of the male breast
- increase in subareolar tissue
- associated with hyperthyroidism, cirrhosis of the liver, chronic renal failure, chronic pulmonary disease, and hypogonadism, use of hormones - estrogens, androgens, and other drugs (digitalis, cimetidine, spironolactone, marihuana, and tricyclic antidepressants)

## Carcinoma of the male breast

- uncommon < 1 % of all breast cancers