

PATHOLOGY OF THE BREAST

Dr. Melinda Hajdu

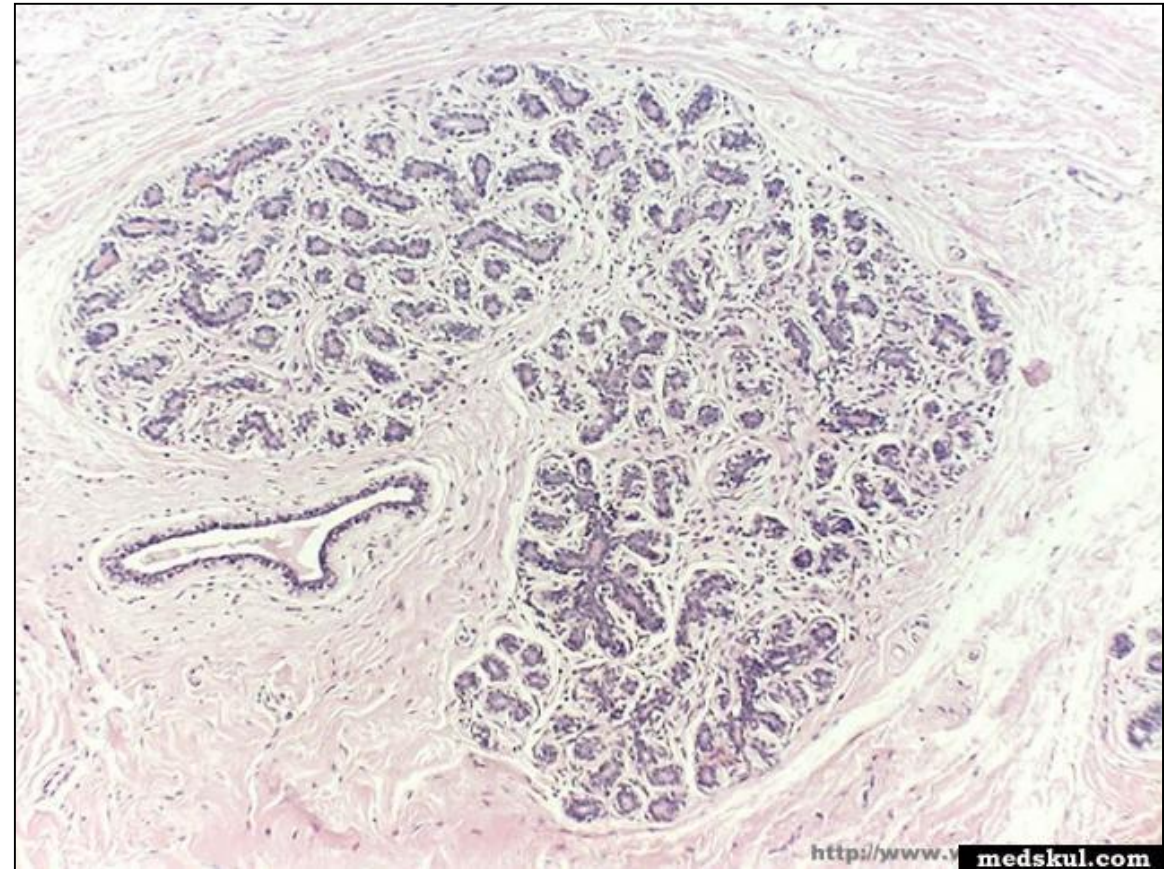
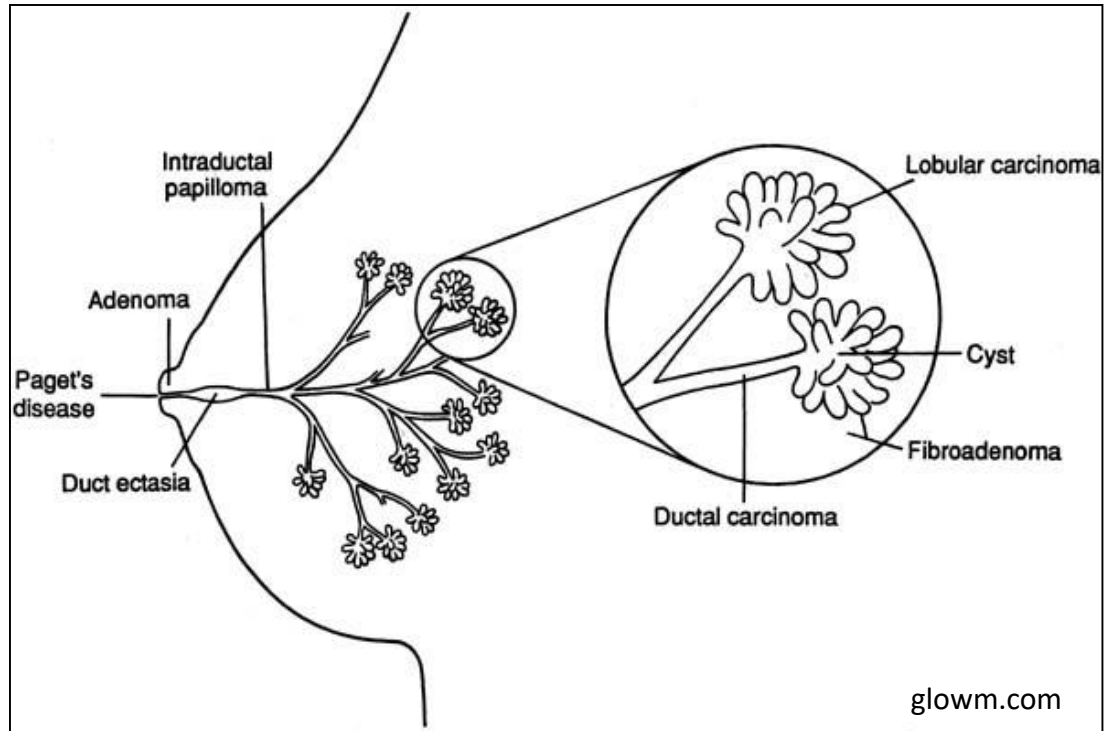
***1st Dept of Pathology and Experimental
Cancer Research***

April 23, 2020



BREAST

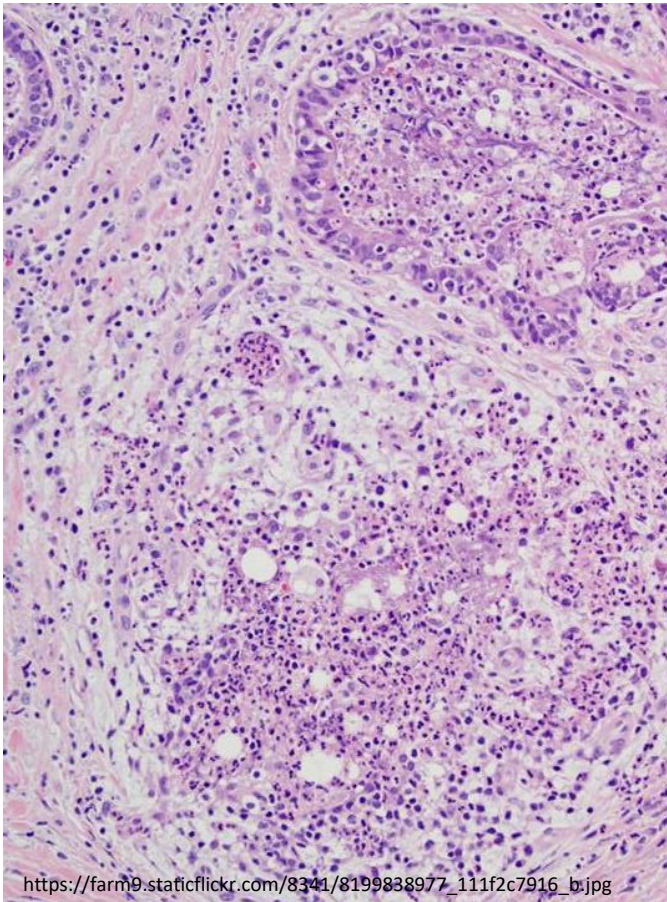
TDLU – terminal ductal-lobular unit



MASTITIS

Acute

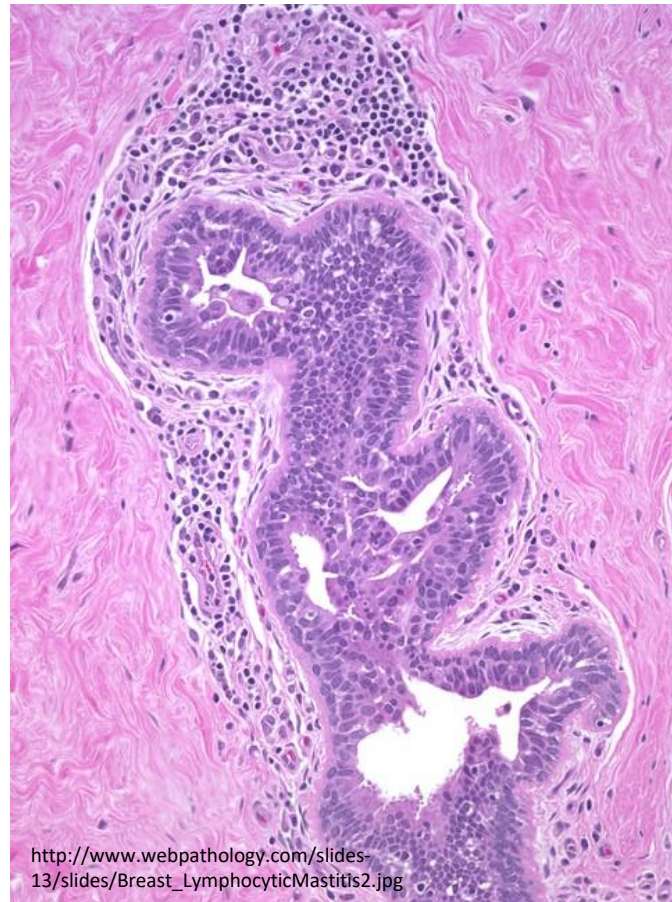
Staphylococcus aureus
During lactation



Chronic

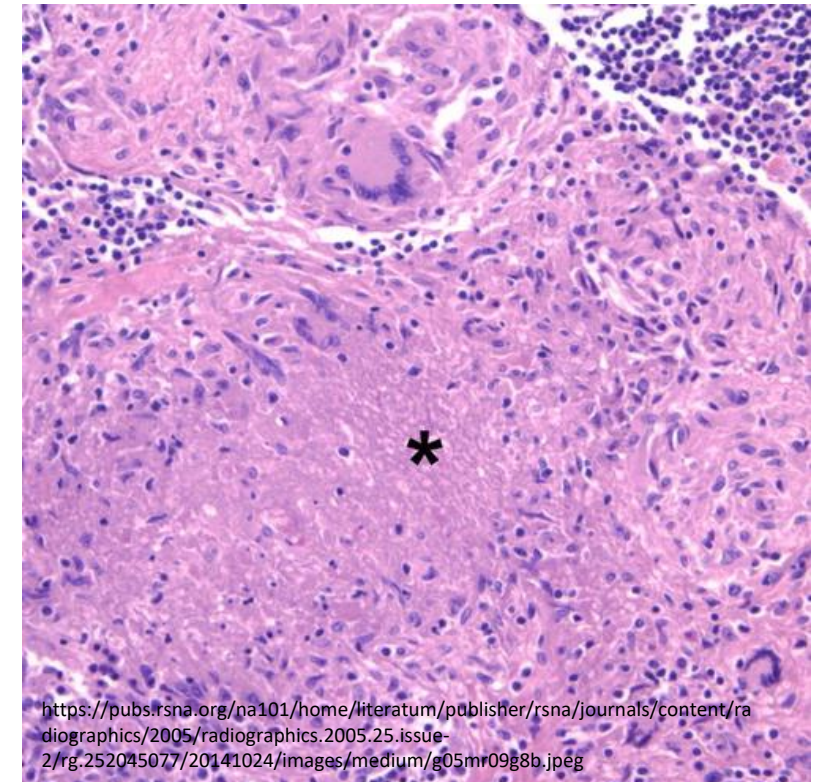
Lymphocytic

Diabetic mastopathy



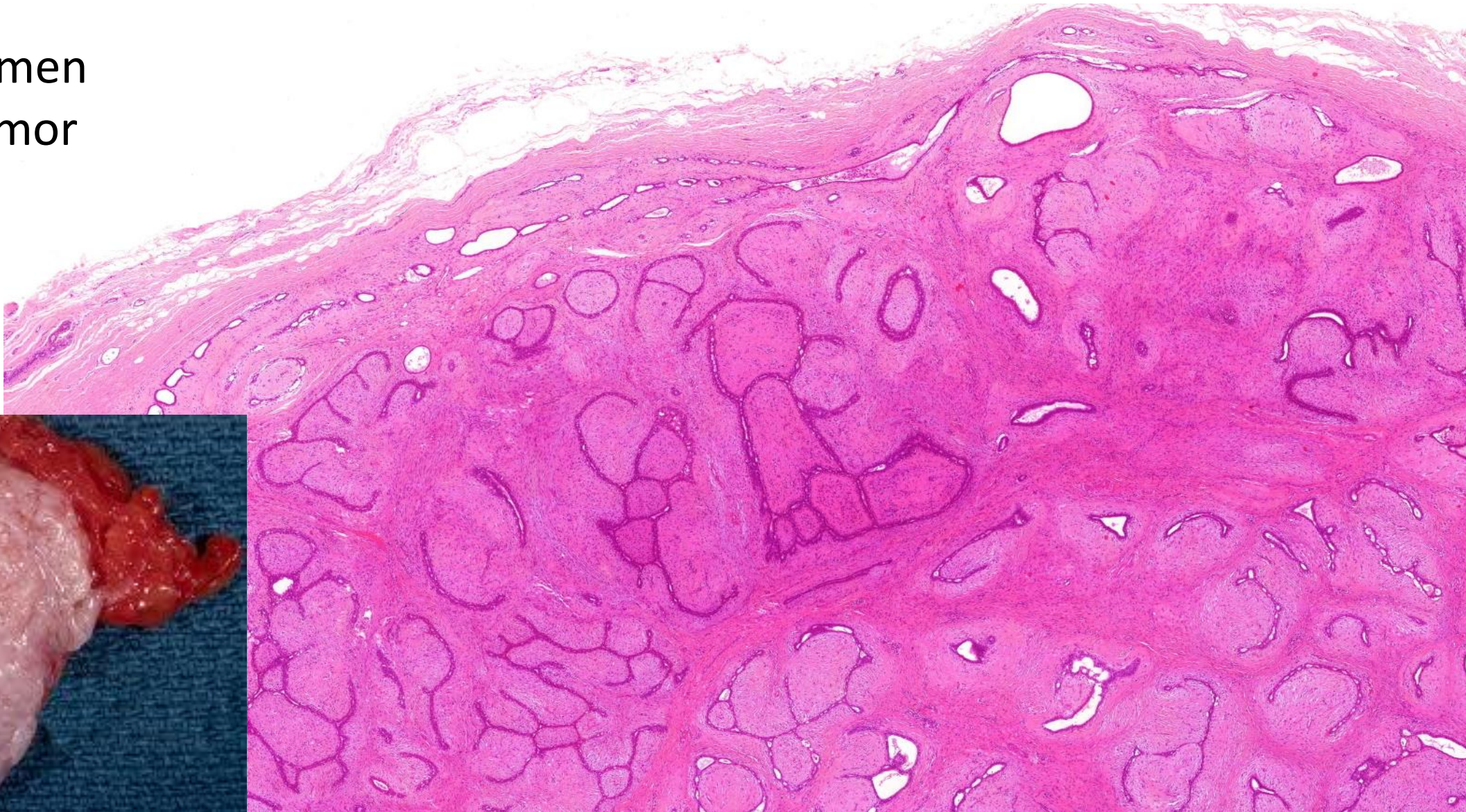
Granulomatous

Idiopathic
Tuberculosis
Sarcoidosis



FIBROEPITHELIAL TUMOR: FIBROADENOMA

Young women
Benign tumor



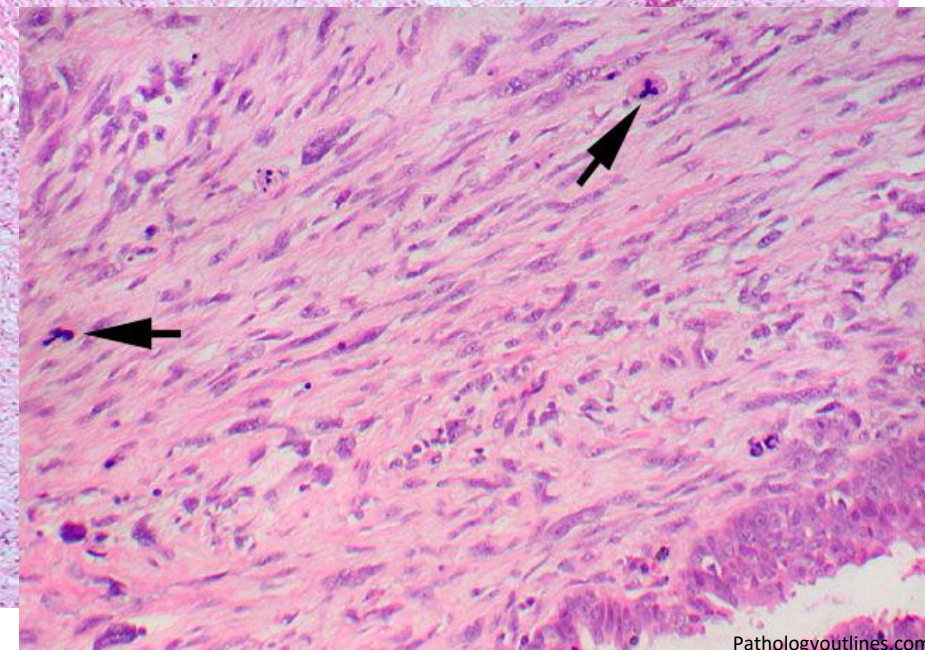
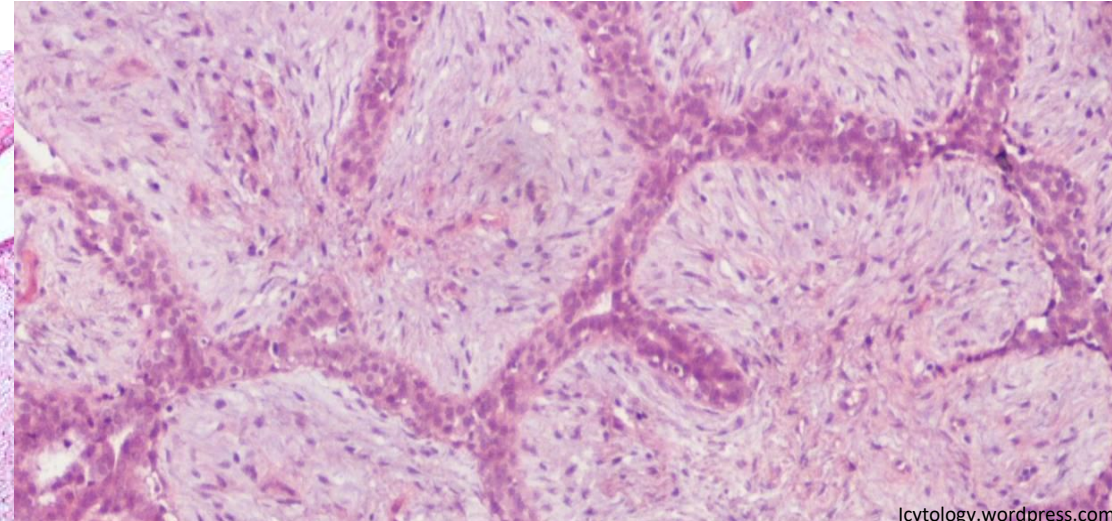
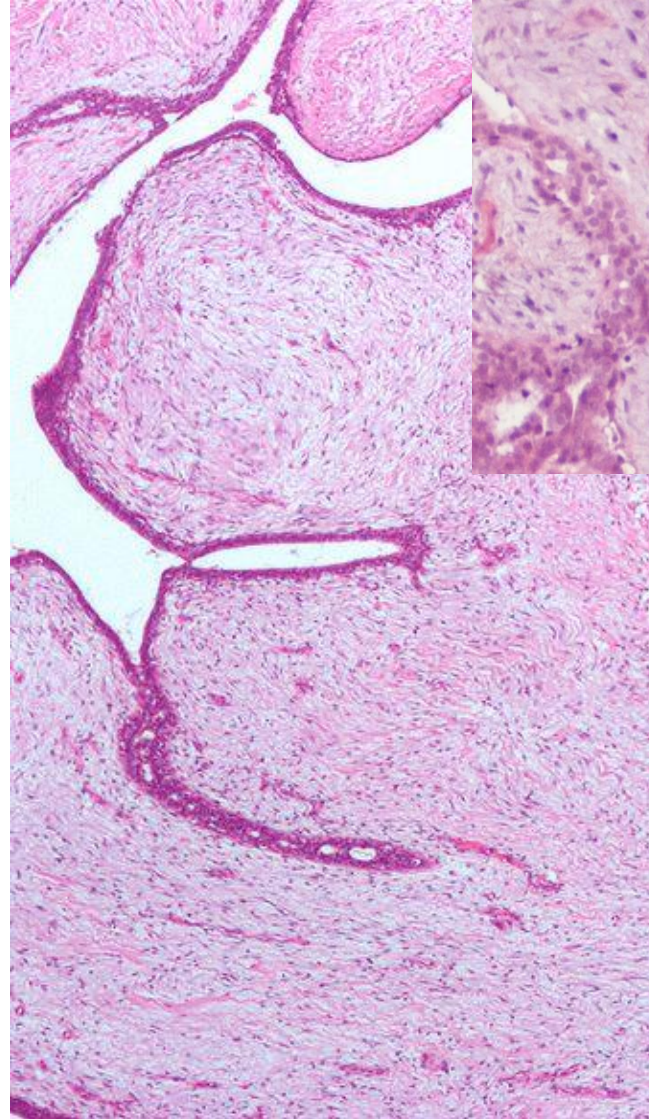
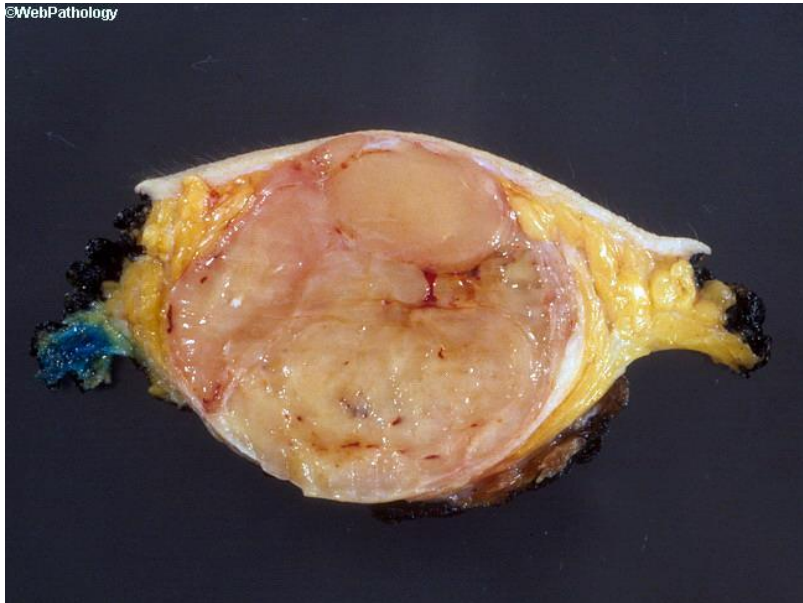
FIBROEPITHELIAL TUMOR: PHYLLODES TUMOR

40-50 year old women

Risk of local relapse

>> Wide local excision

- Benign
- Borderline
- Malignant



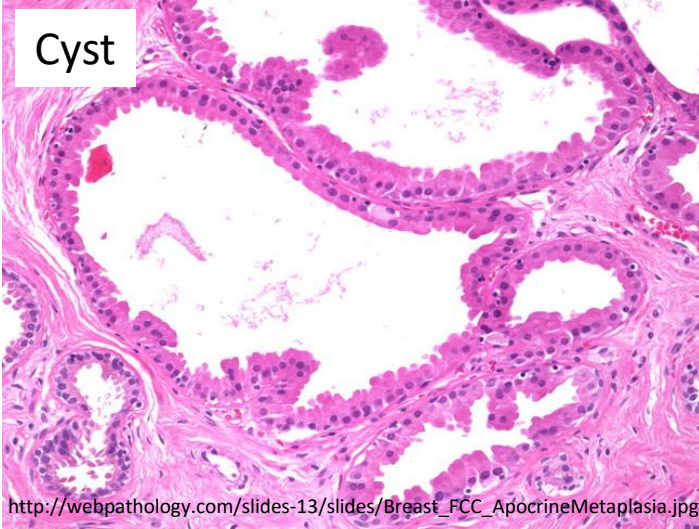
lcytology.wordpress.com

Pathologyoutlines.com

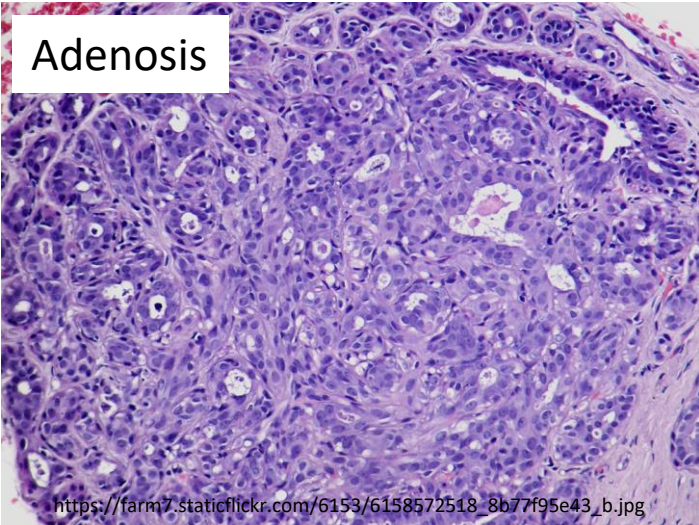
BENIGN EPITHELIAL LESIONS

Non-proliferative lesions

Cyst

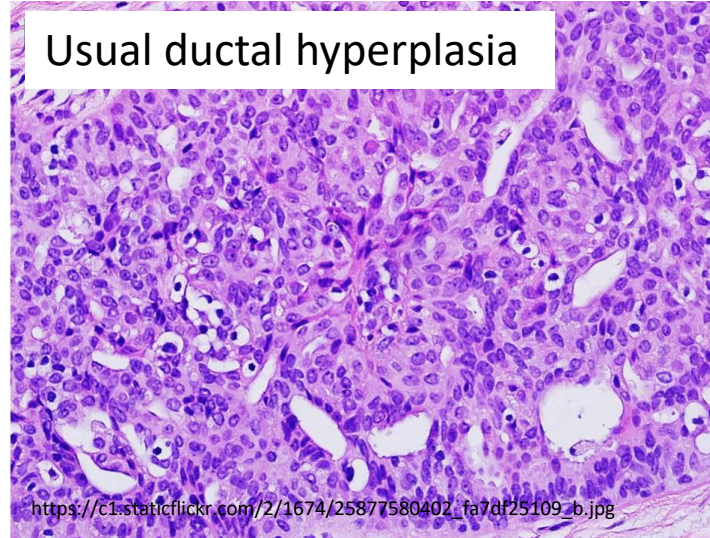


Adenosis

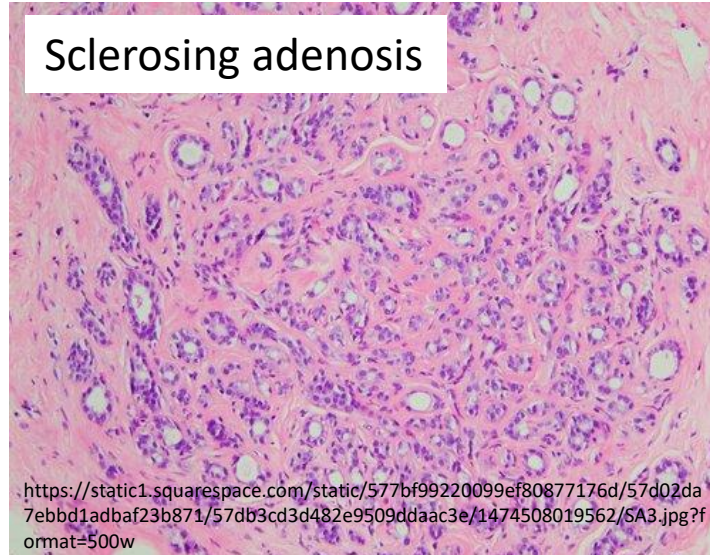


Proliferative lesions without atypia

Usual ductal hyperplasia

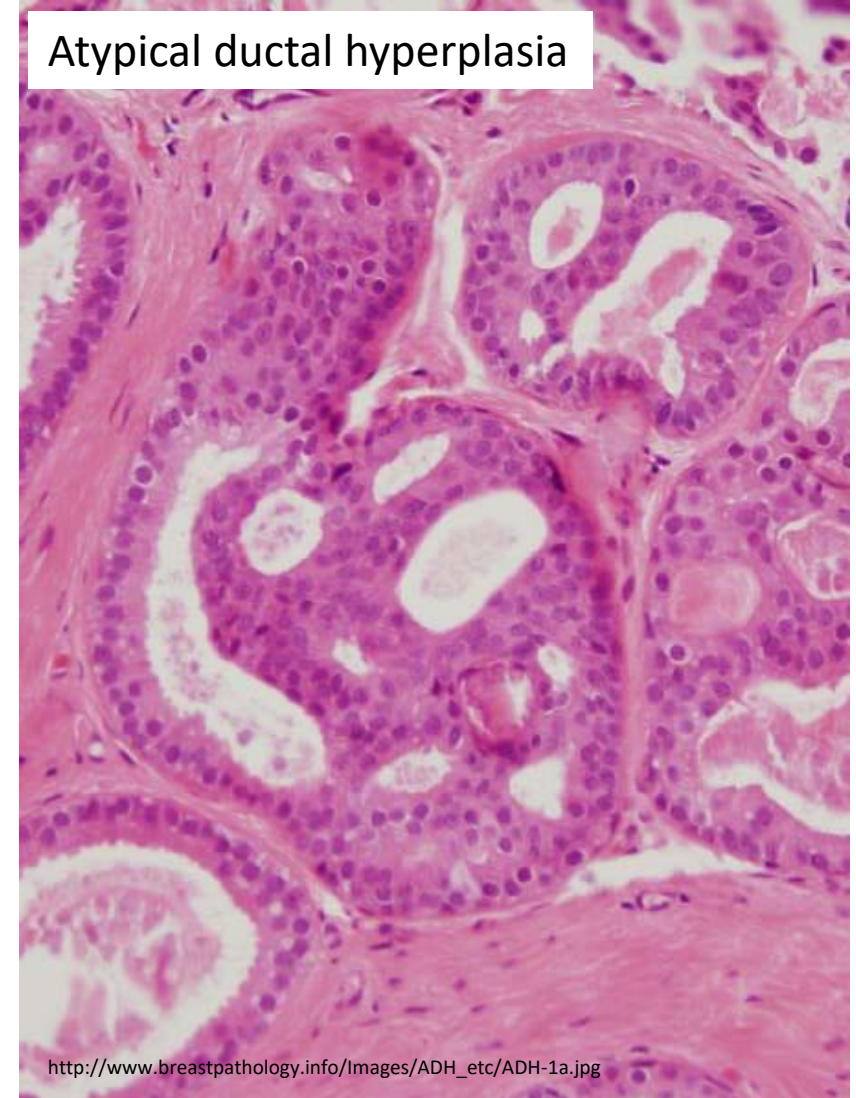


Sclerosing adenosis



Proliferative lesions with atypia

Atypical ductal hyperplasia



BREAST CARCINOMA - EPIDEMIOLOGY

1 out of 7-8 women

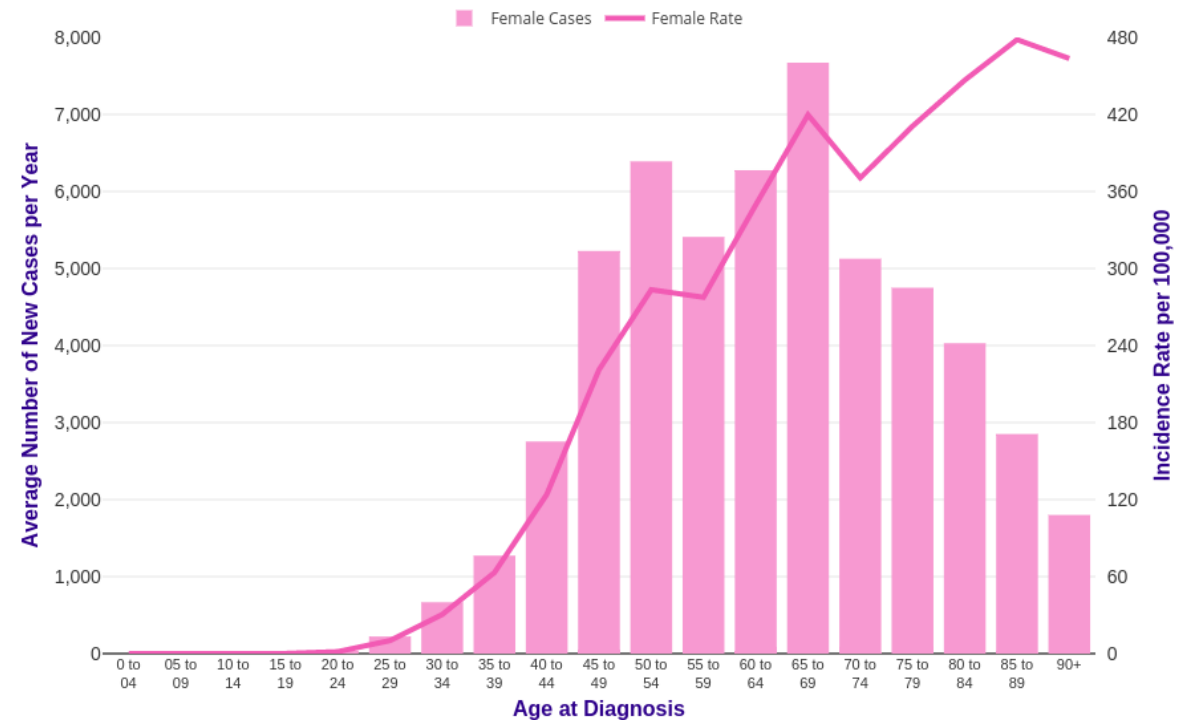
Most frequent malignant tumor in women

Leading cause of cancer deaths in women

5-year survival: 80-90%

Risk factors

- Female gender
- Age
- Obesity
- Nulliparity
- Smoking
- Family history
- BRCA1/2 mutations

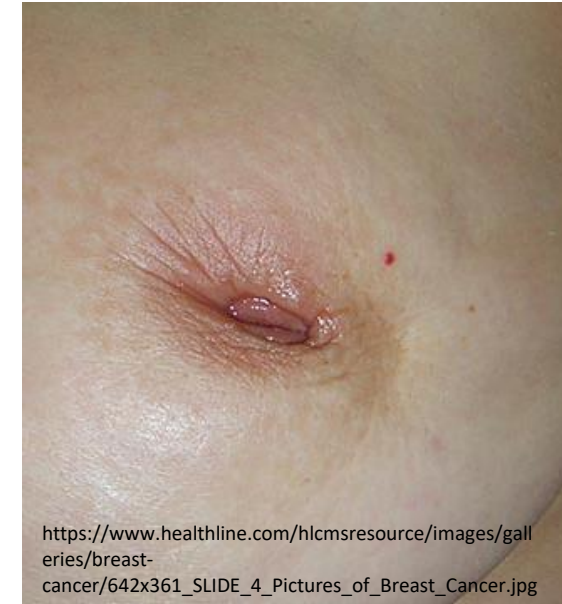


CLINICAL SIGNS OF BREAST CARCINOMA

Majority: no symptoms!



Palpable mass



Nipple inversion



Peau d'orange



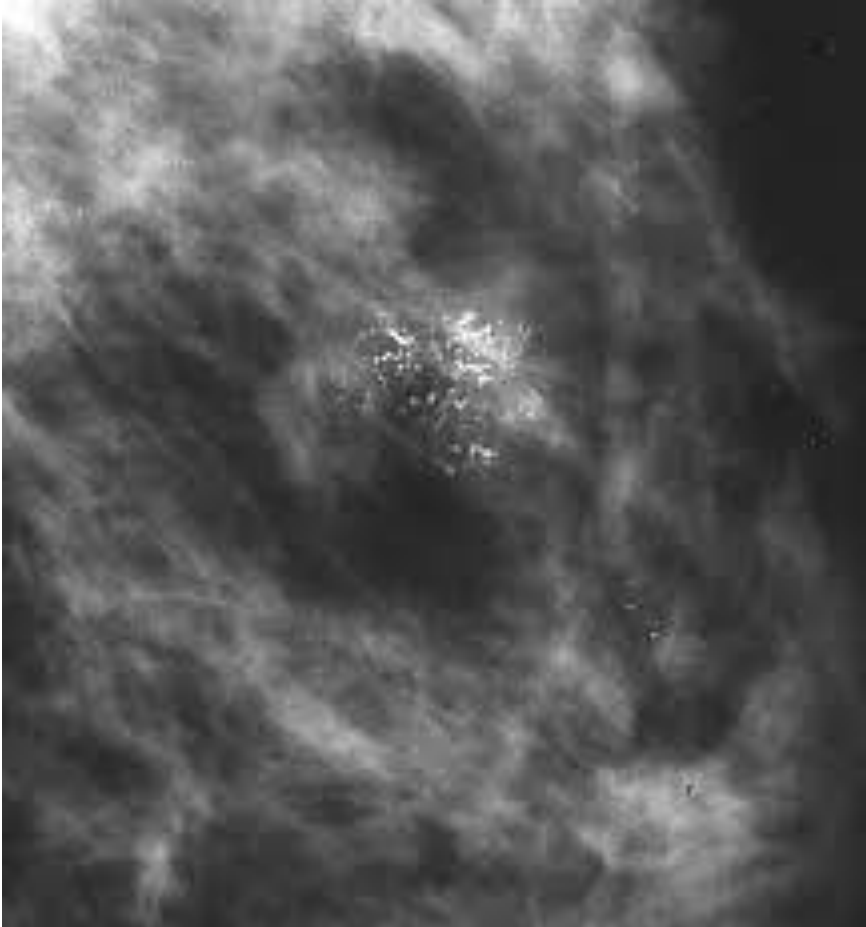
Nipple discharge



Inflammatory carcinoma

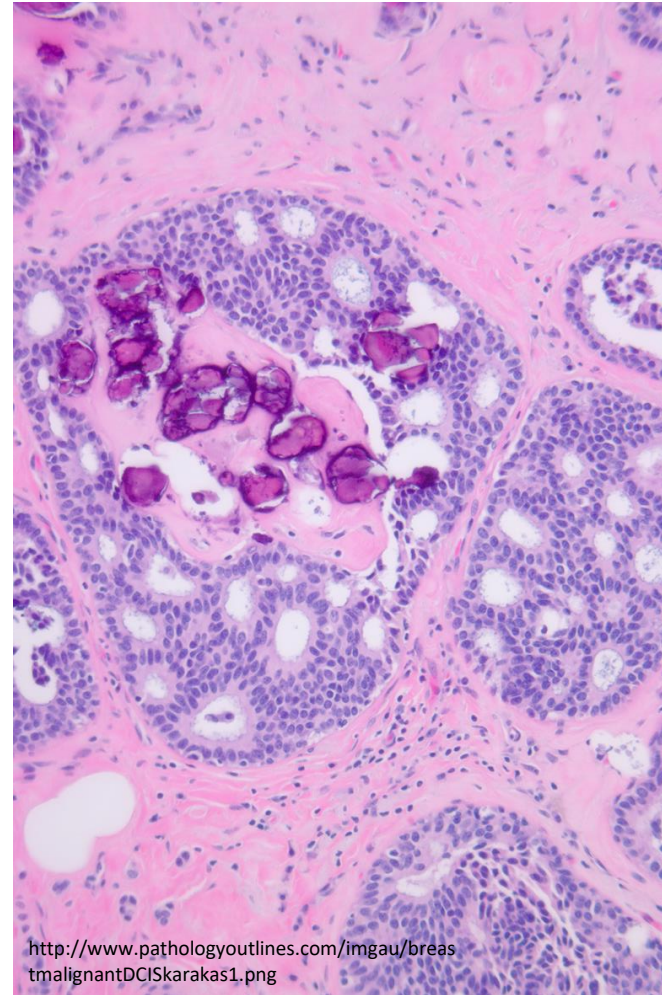
NON-INVASIVE: DUCTAL CARCINOMA IN SITU (DCIS)

Mammography

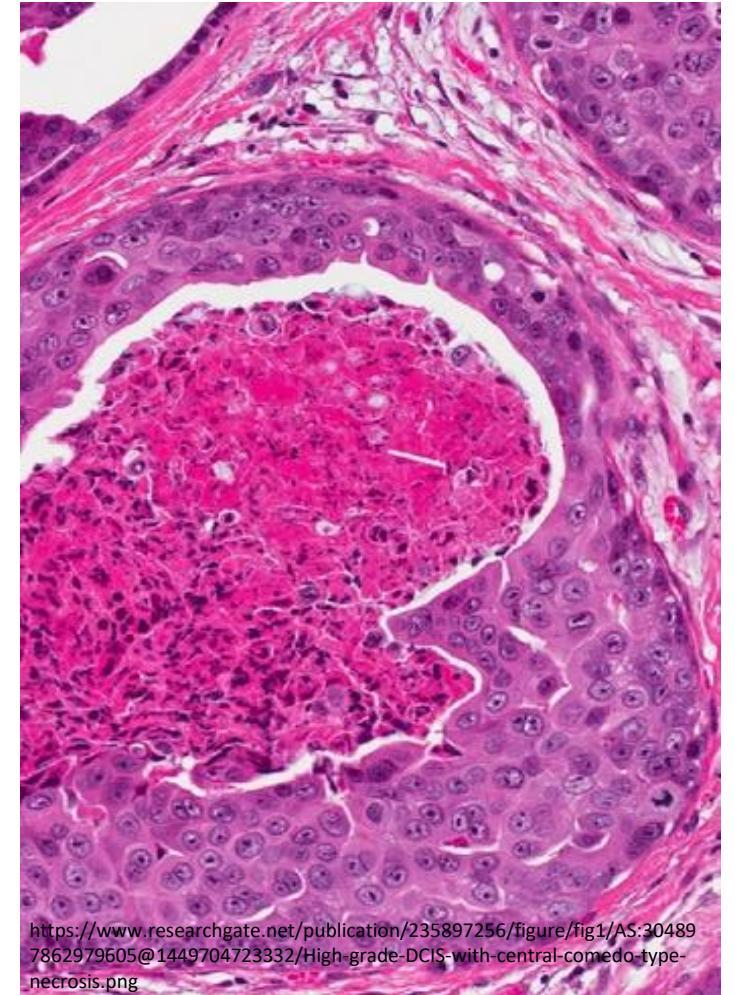


microcalcifications!

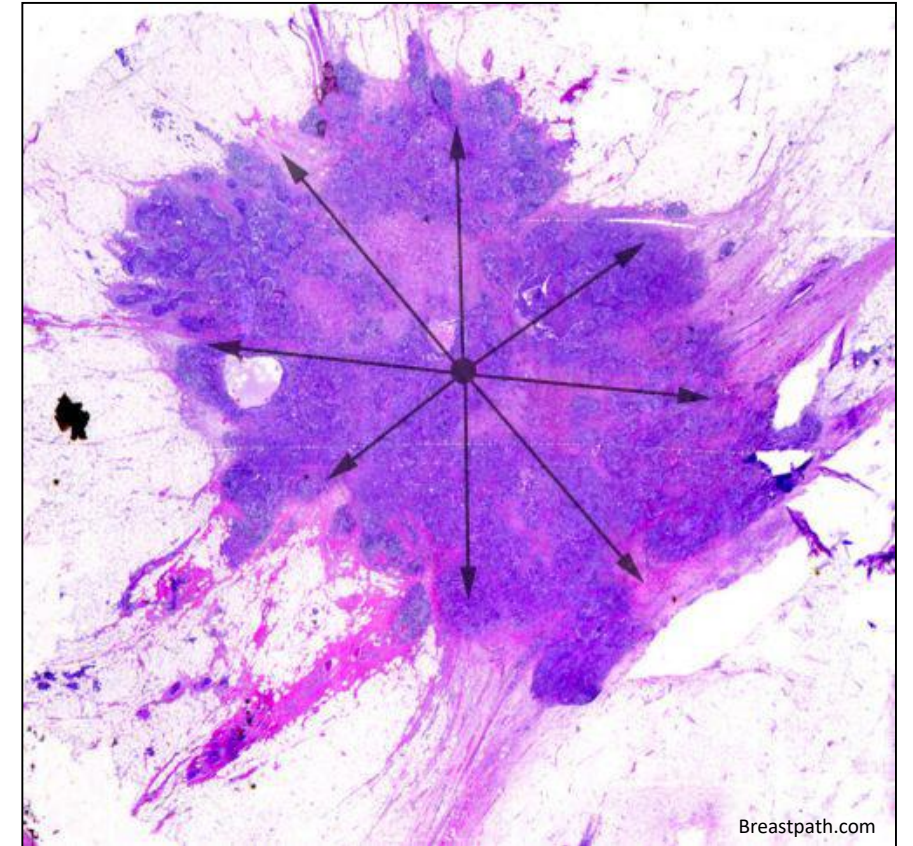
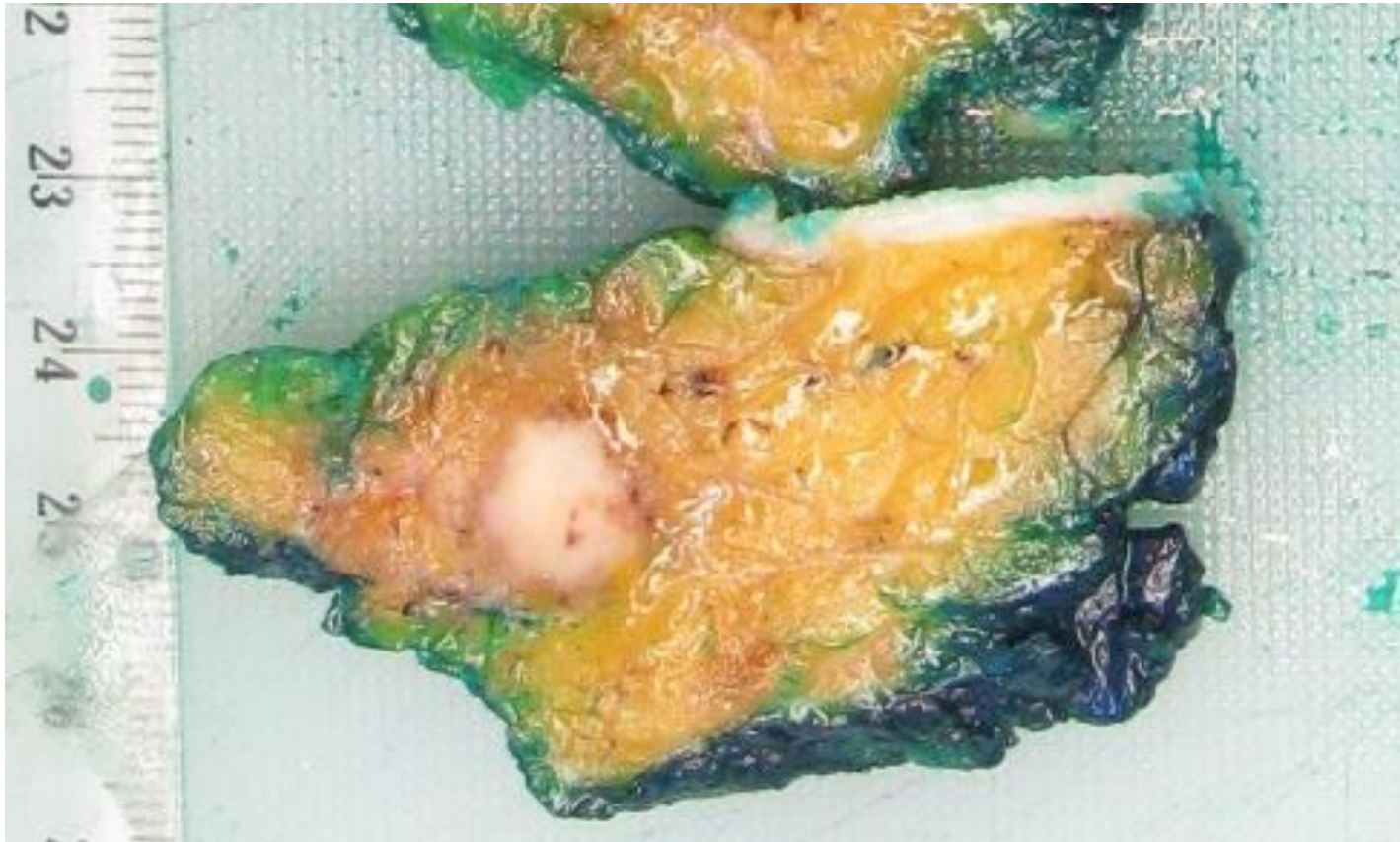
Low grade



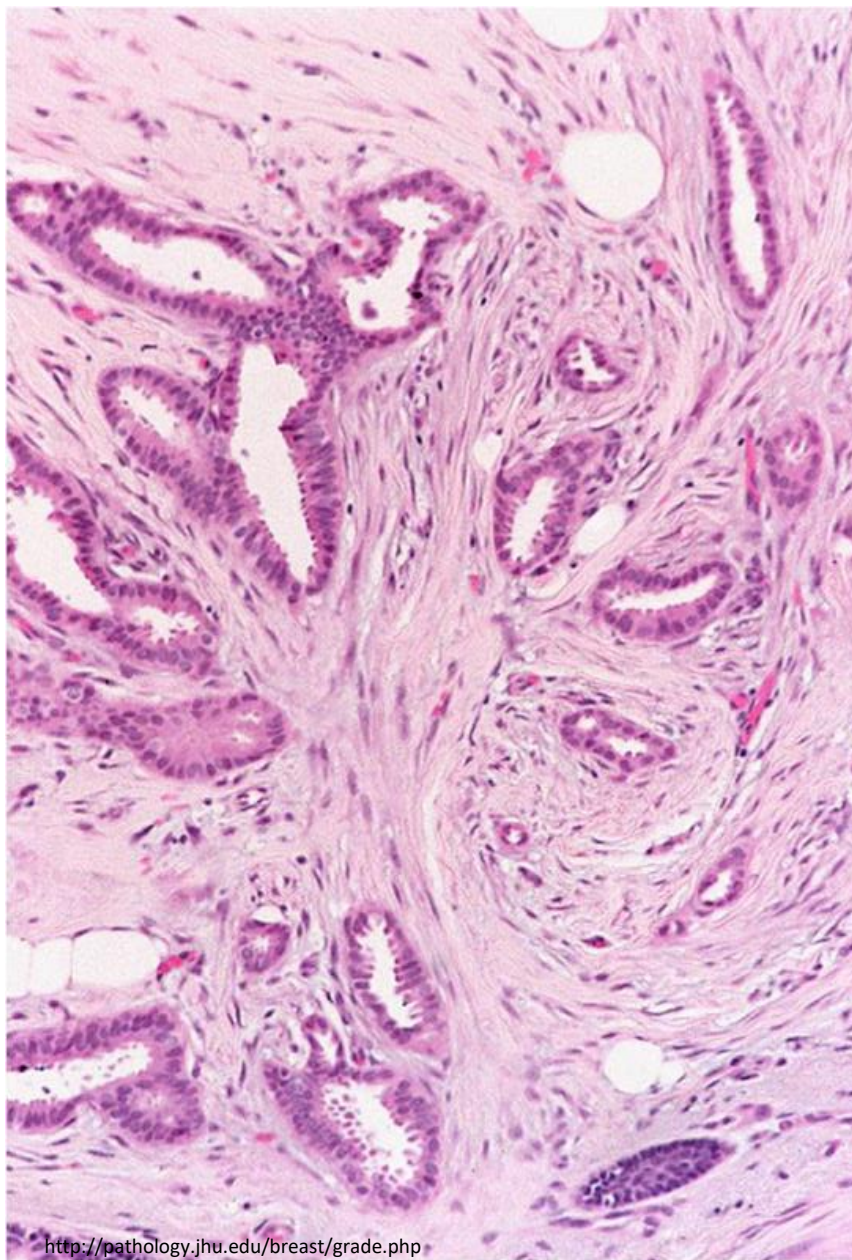
High grade (with necrosis)



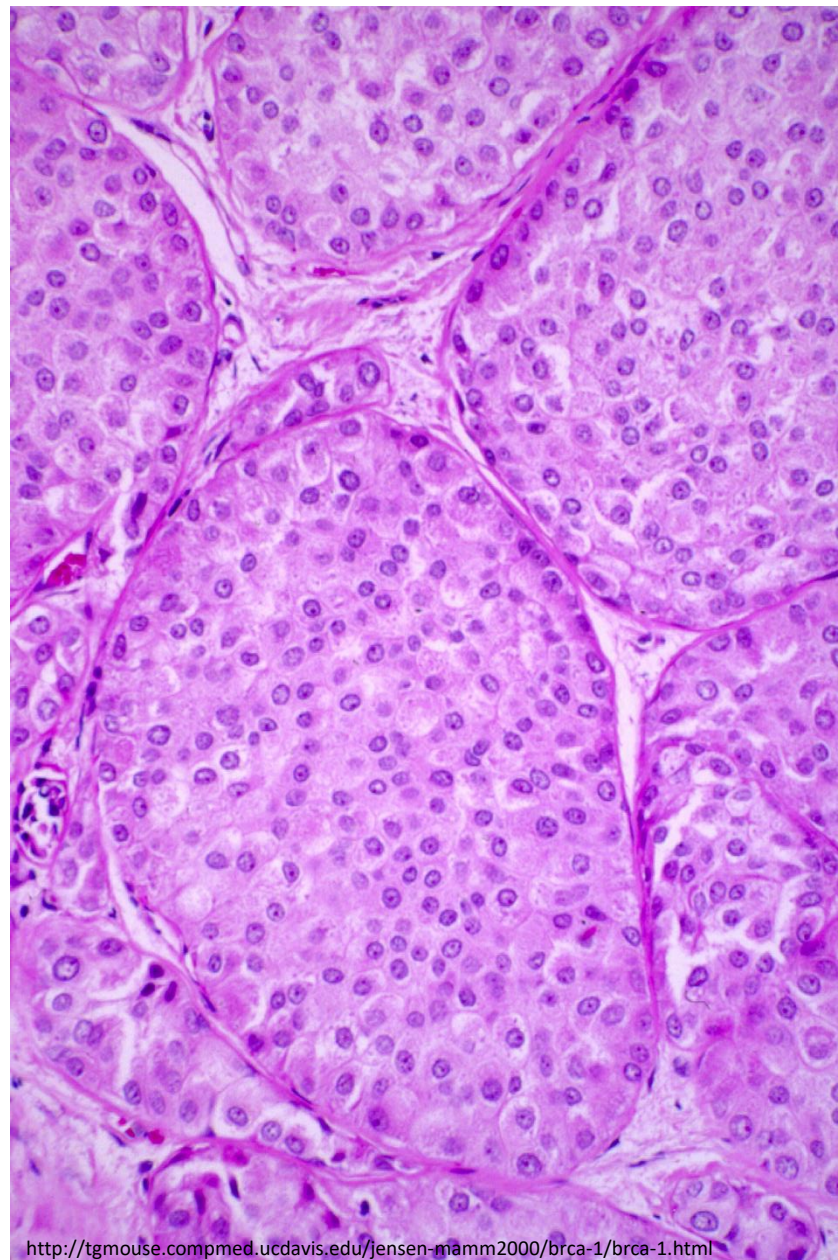
***INVASIVE CARCINOMA, NO SPECIAL TYPE
(INVASIVE DUCTAL CARCINOMA)
(70-80%)***



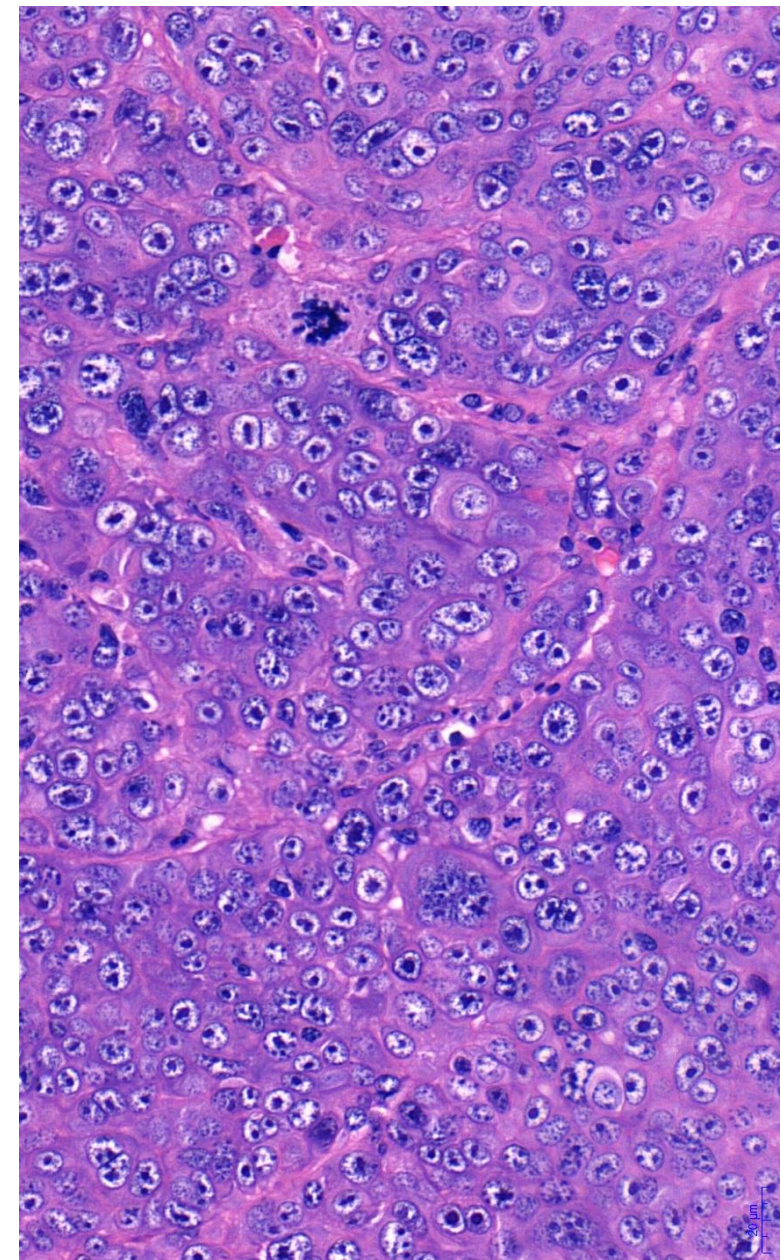
Grade 1



Grade 2

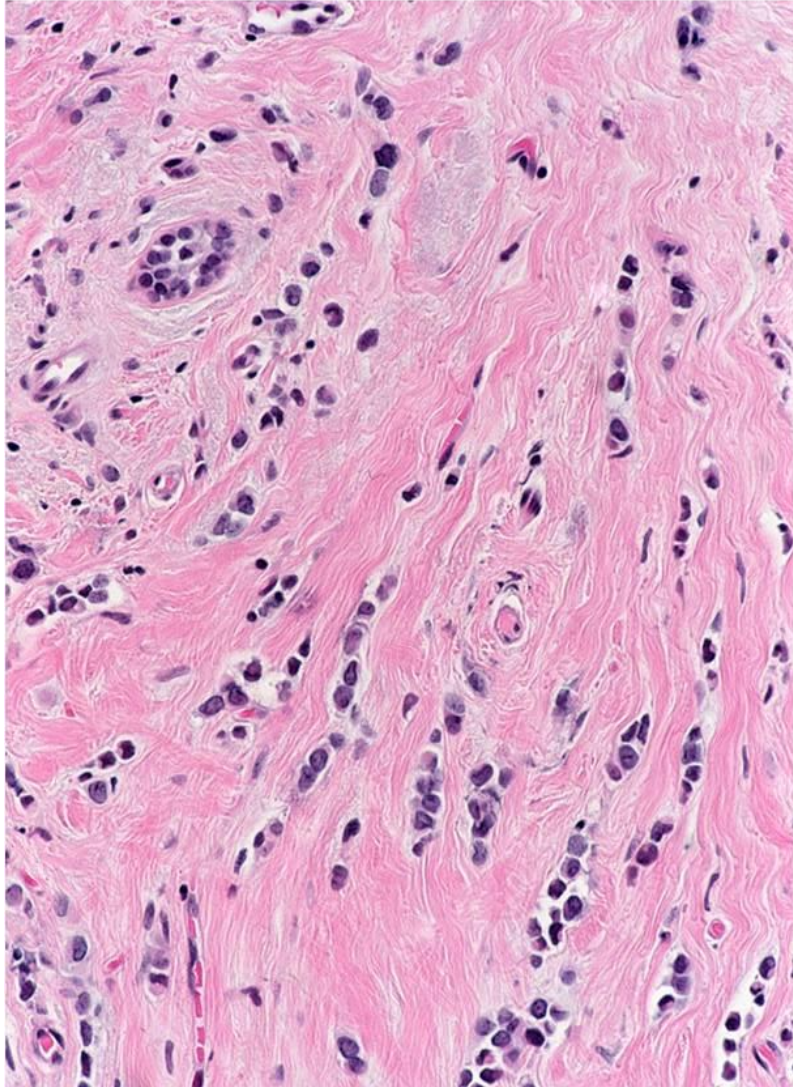


Grade 3

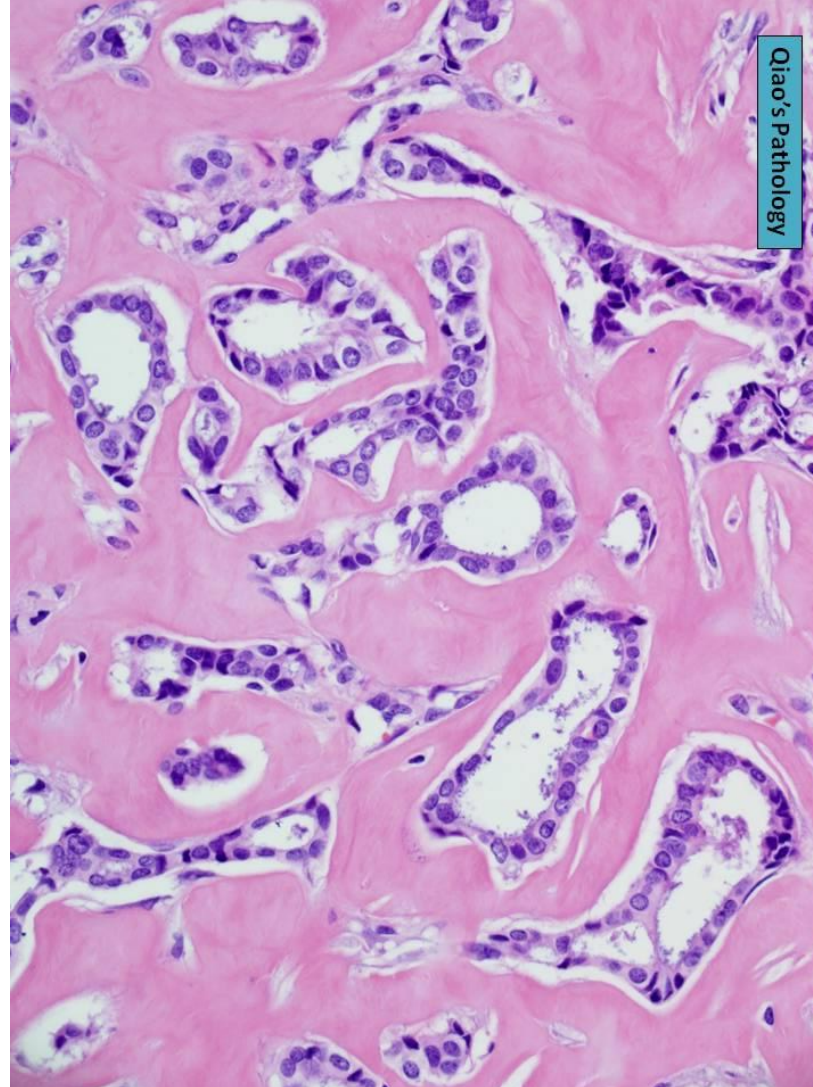


SPECIAL TYPES

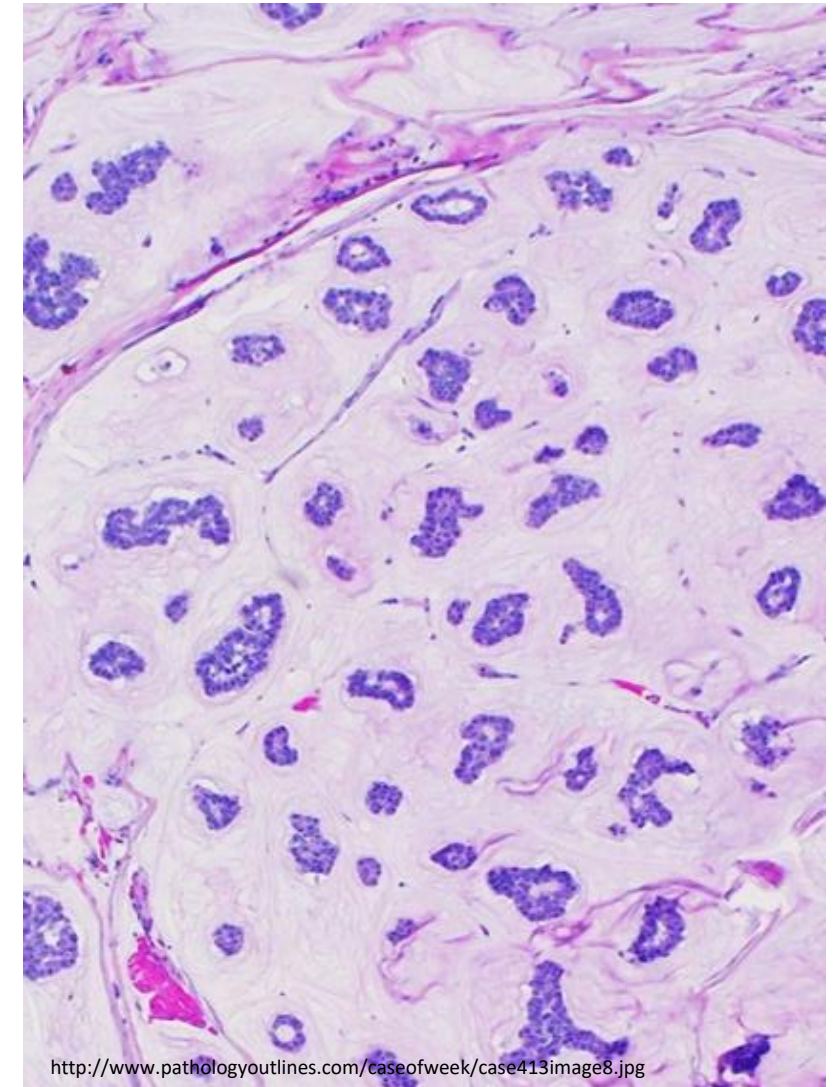
Invasive lobular carcinoma



Tubular carcinoma

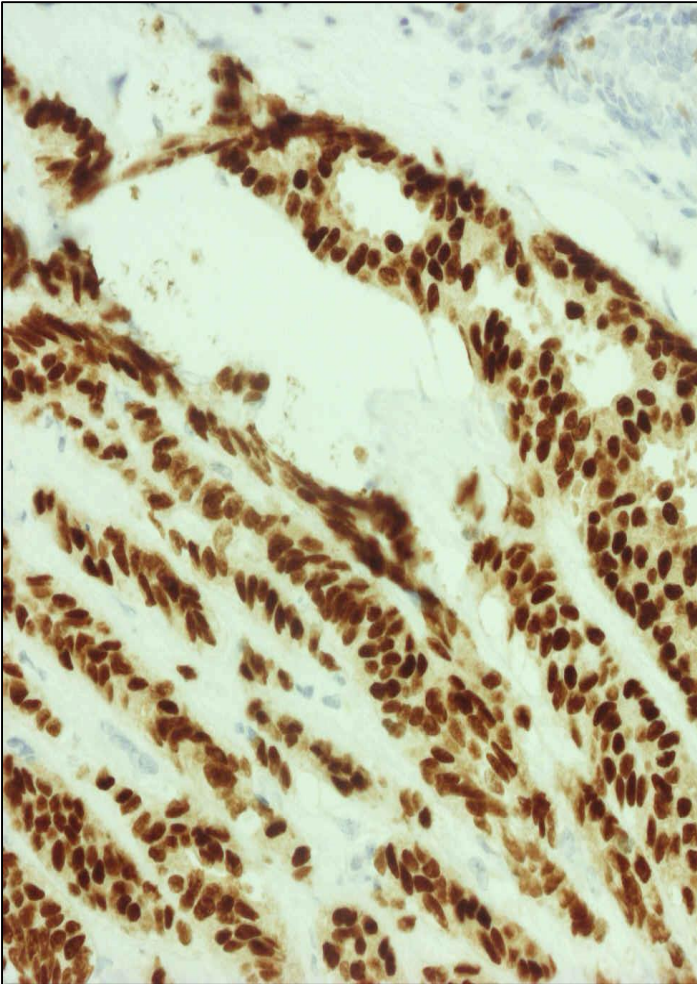


Mucinous carcinoma

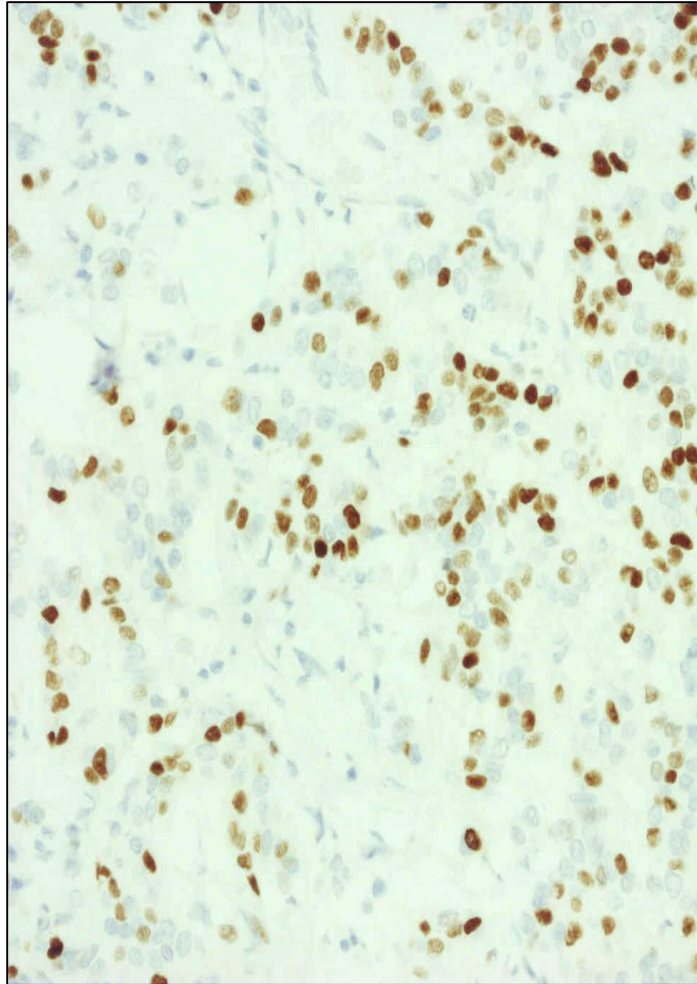


PREDICTIVE FACTORS

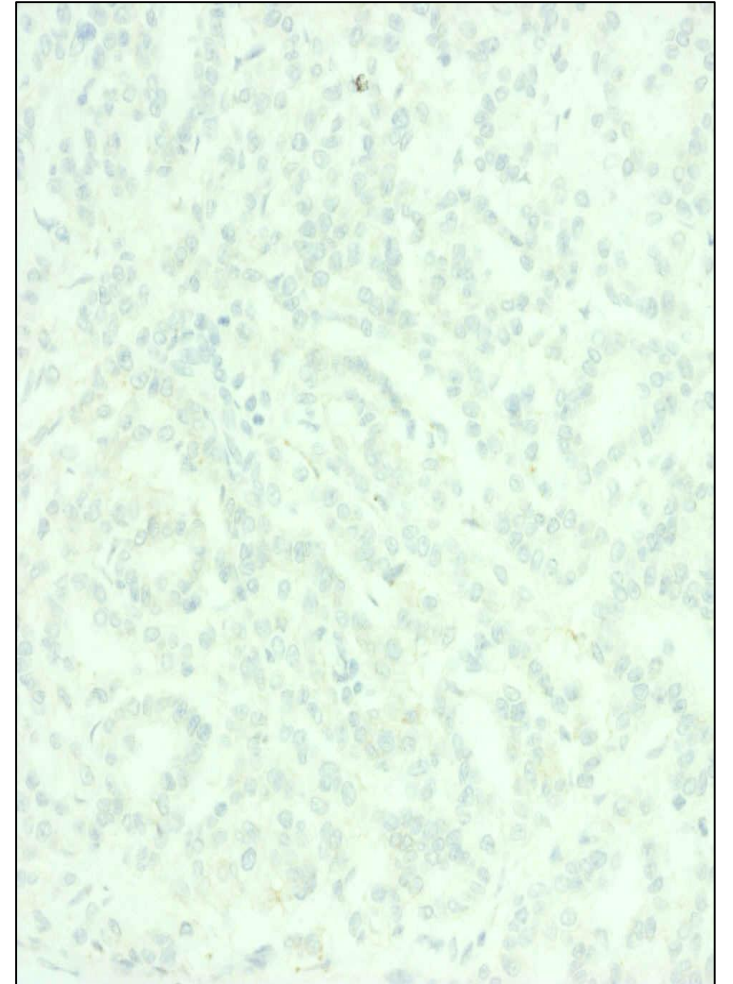
ER



PR

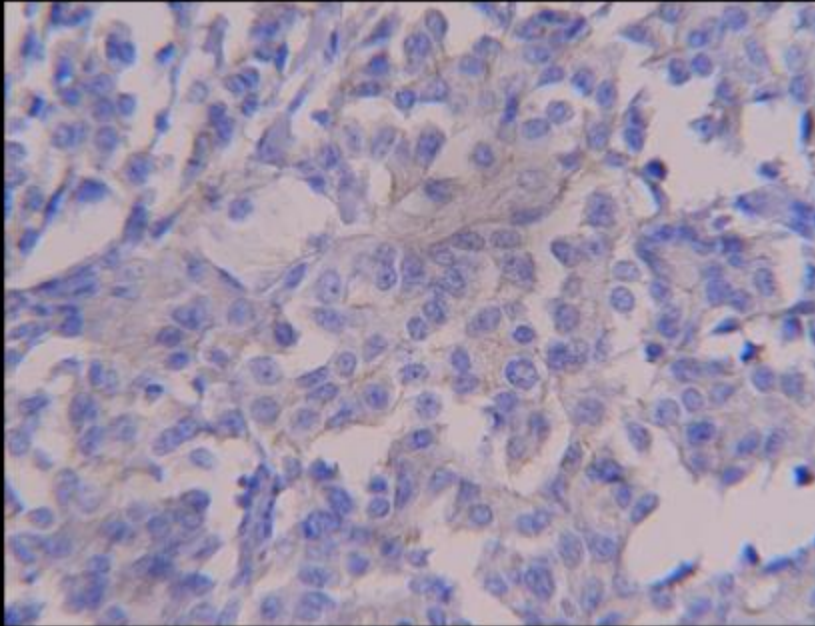


HER-2

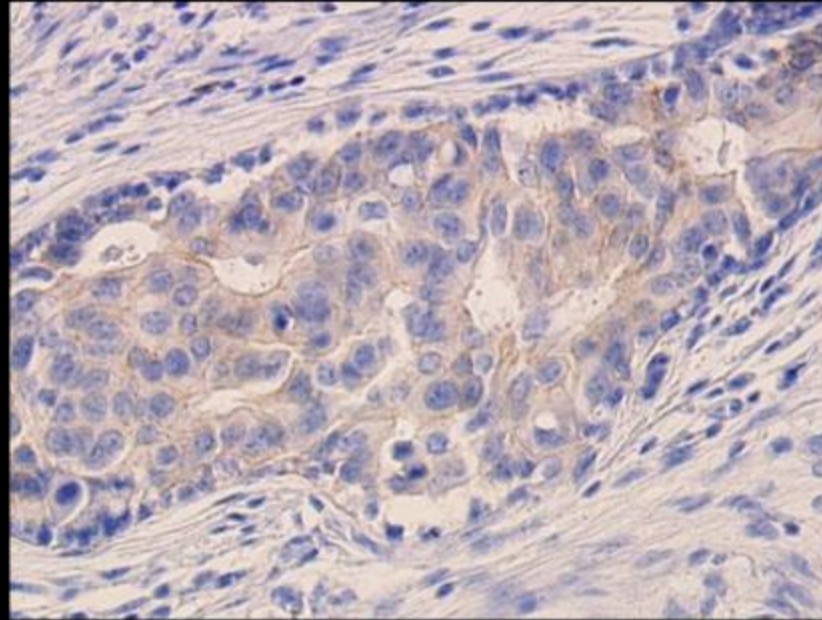


HER-2

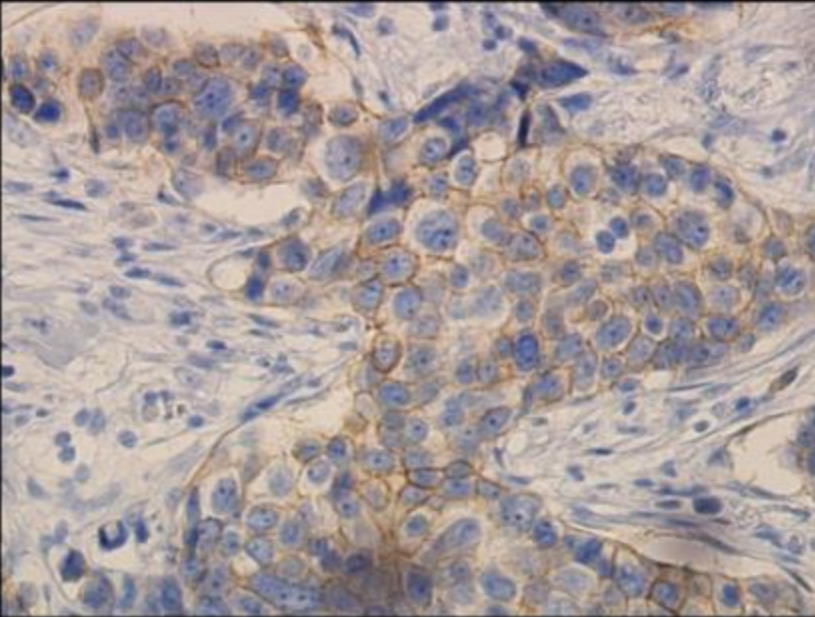
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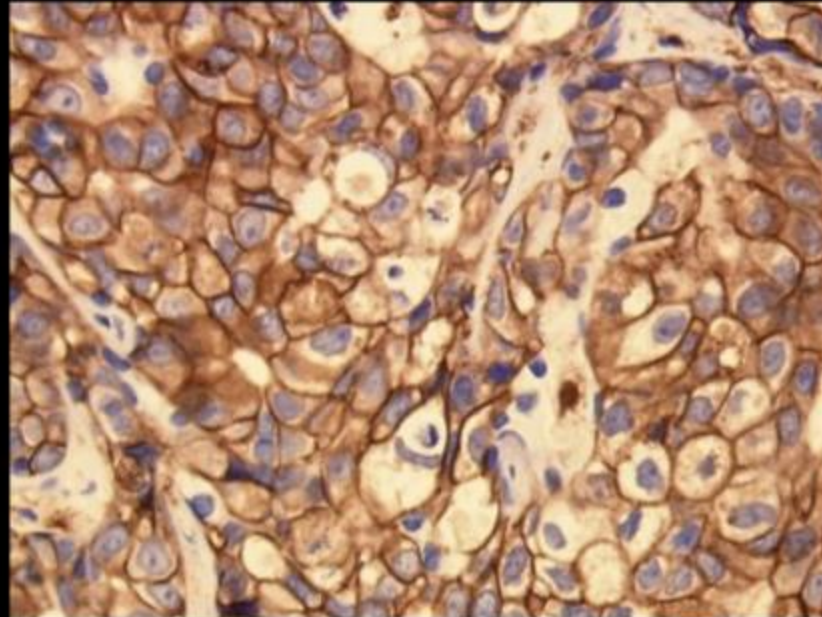
1+



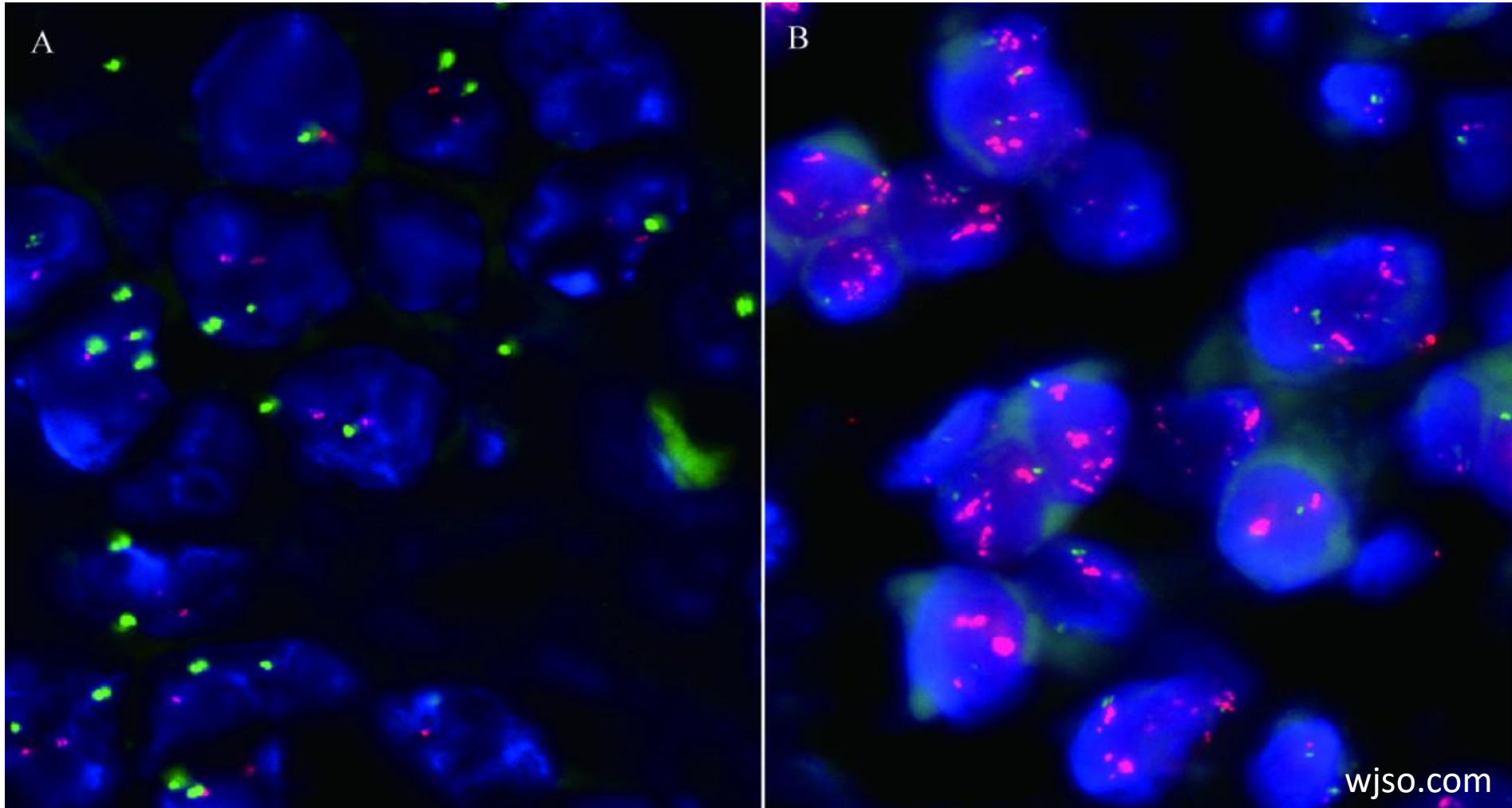
2+



3+



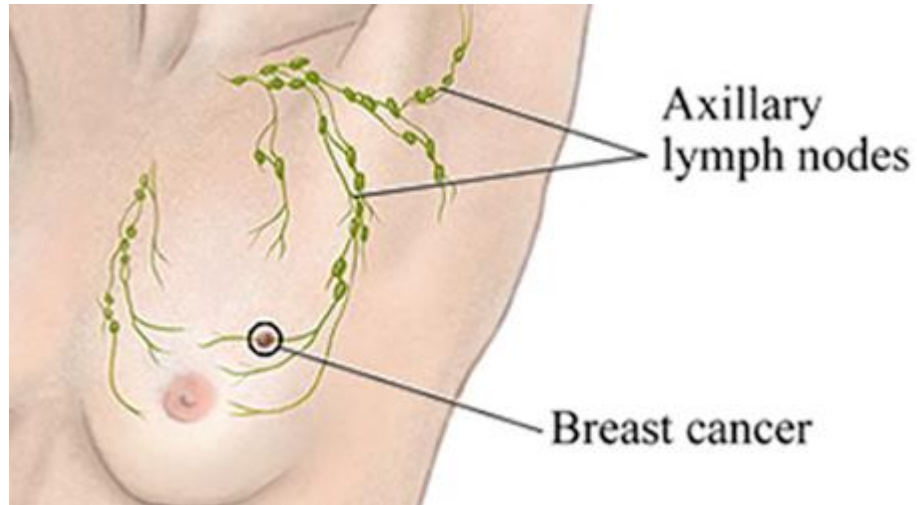
HER-2 FISH



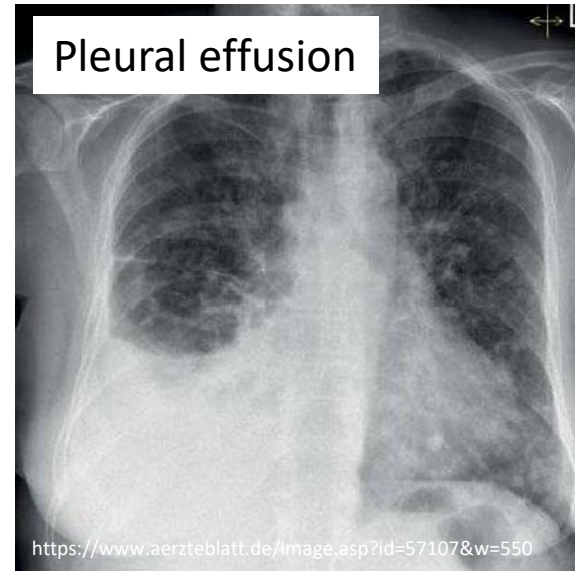
HER-2 probe
chromosome 17 centromeric probe

Amplification

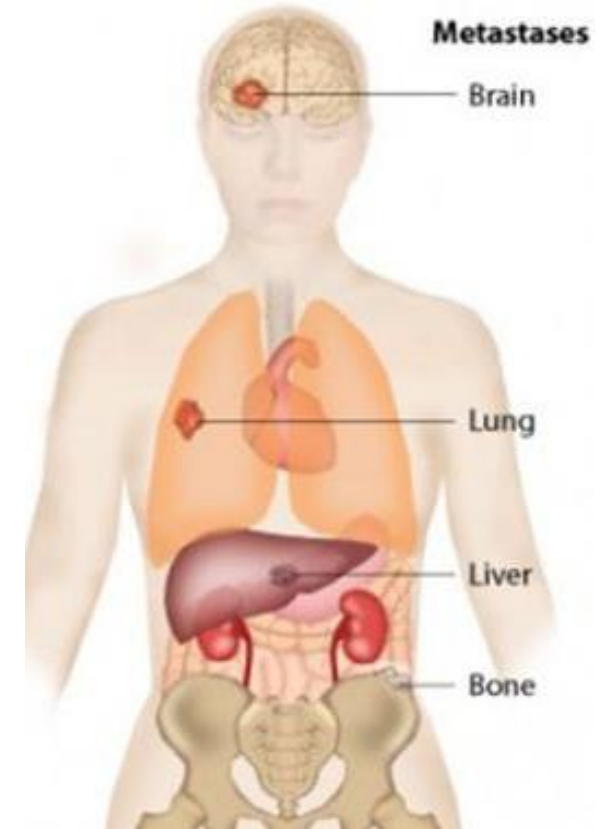
BREAST CARCINOMA - SPREAD



<https://breastcancersurgery.com/wp-content/uploads/2016/12/img-lymph-node.jpg>

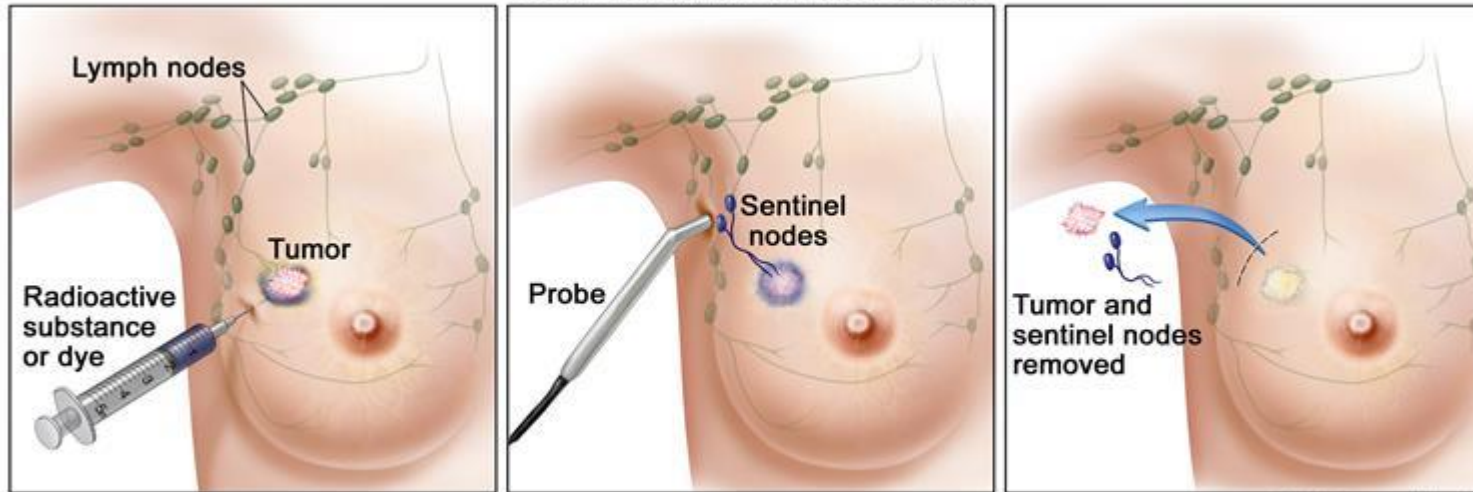


<https://www.aerzteblatt.de/image.asp?id=57107&w=550>



<http://cdn.healthandsymptoms.com/wp-content/uploads/2016/09/The-Basics-of-Stage-4-Breast-Cancer-in-the-Lungs-featured-720x381.jpg>

Sentinel Lymph Node Biopsy

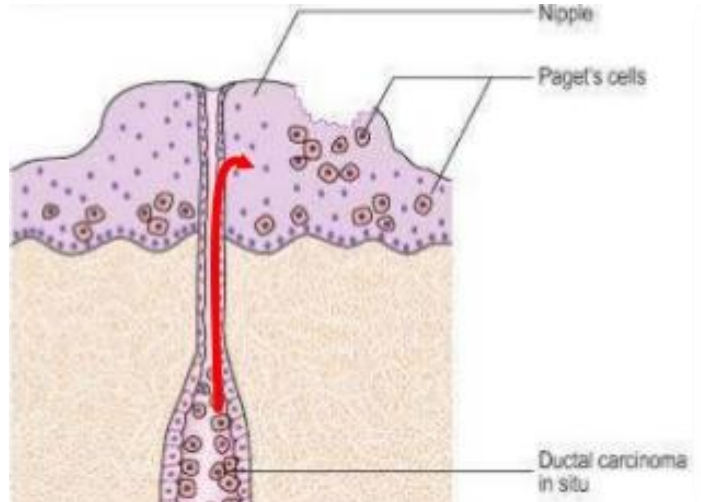


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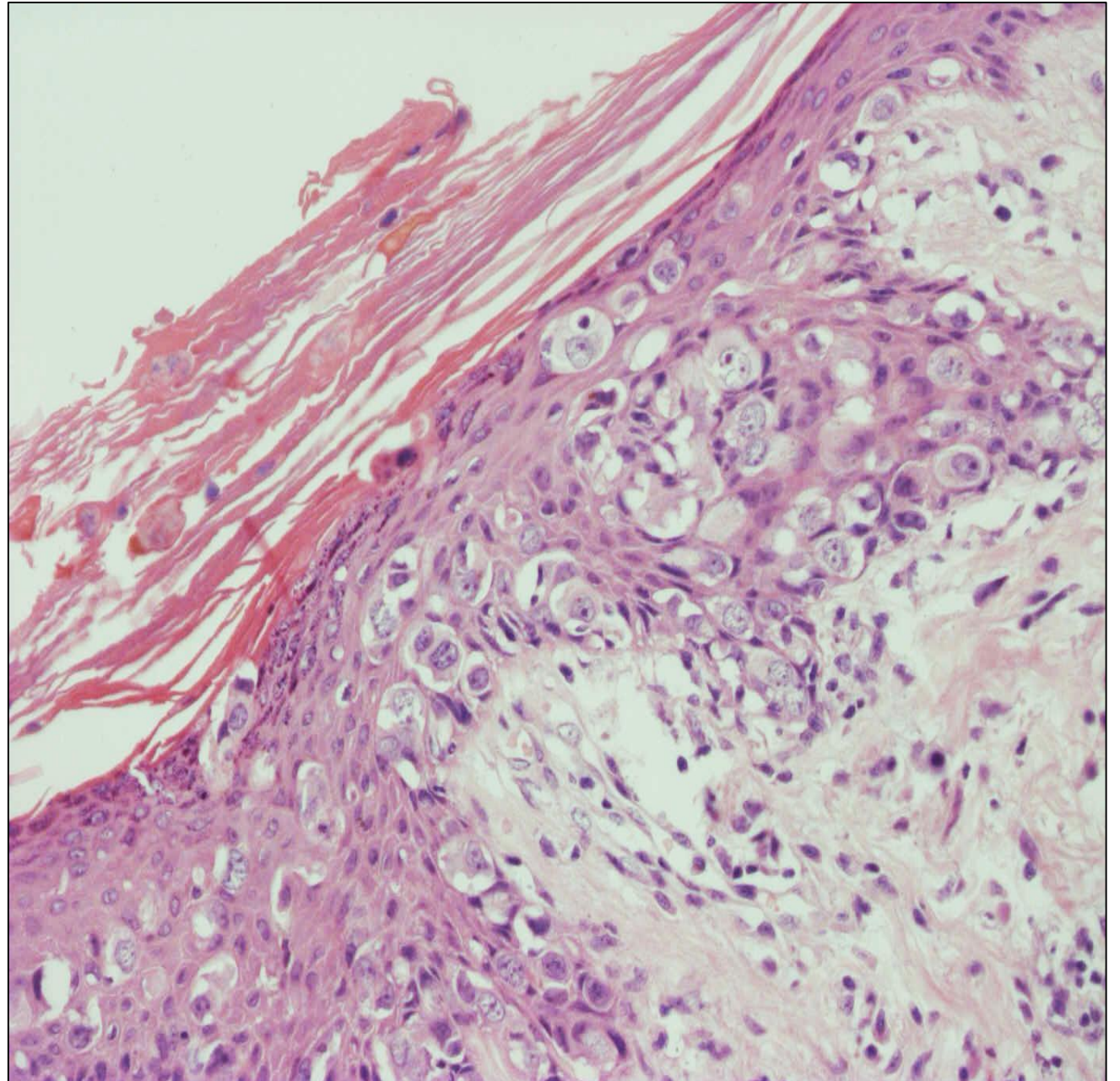
PAGET DISEASE OF THE NIPPLE

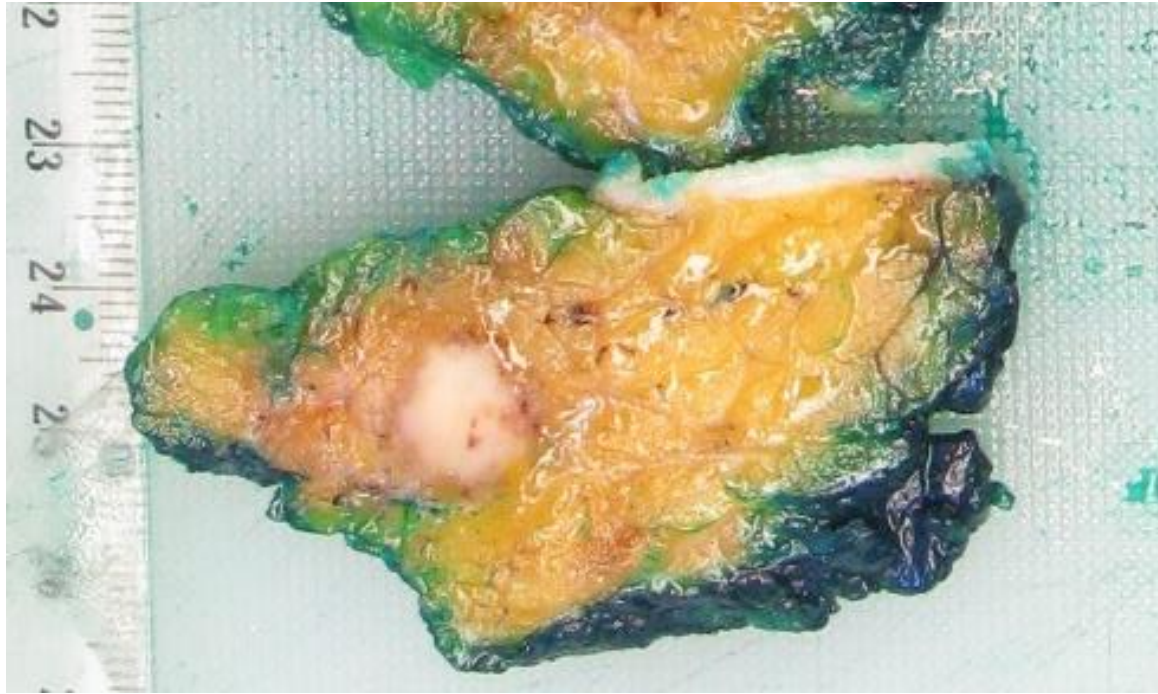
Underlying:

- Invasive breast carcinoma
- Ductalis carcinoma in situ



<https://image.slidesharecdn.com/cpc-4-131112175945-phpapp01/95/breast-pathology-lecture-2013-70-638.jpg?cb=1384286182>

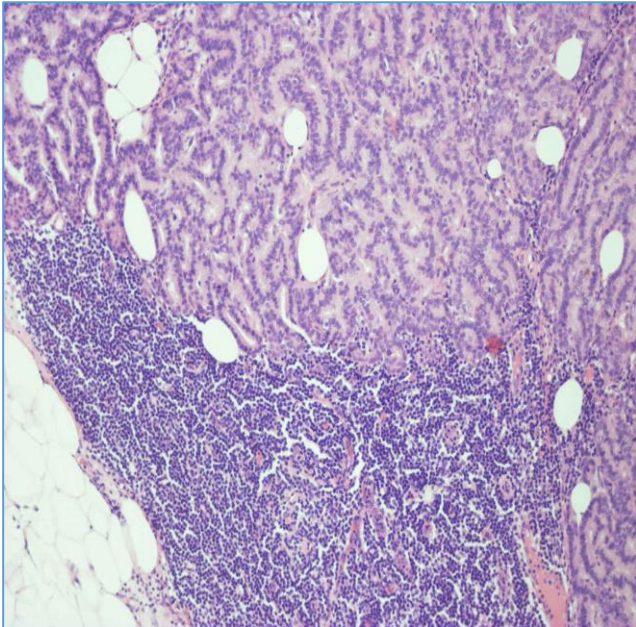




SURGERY

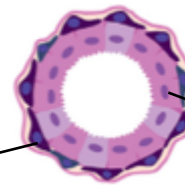
Breast:

- ***Sectorectomy***
- ***Mastectomy***



Lymph nodes:

- ***Sentinel lymph node biopsy***
- ***Axillary block dissection***



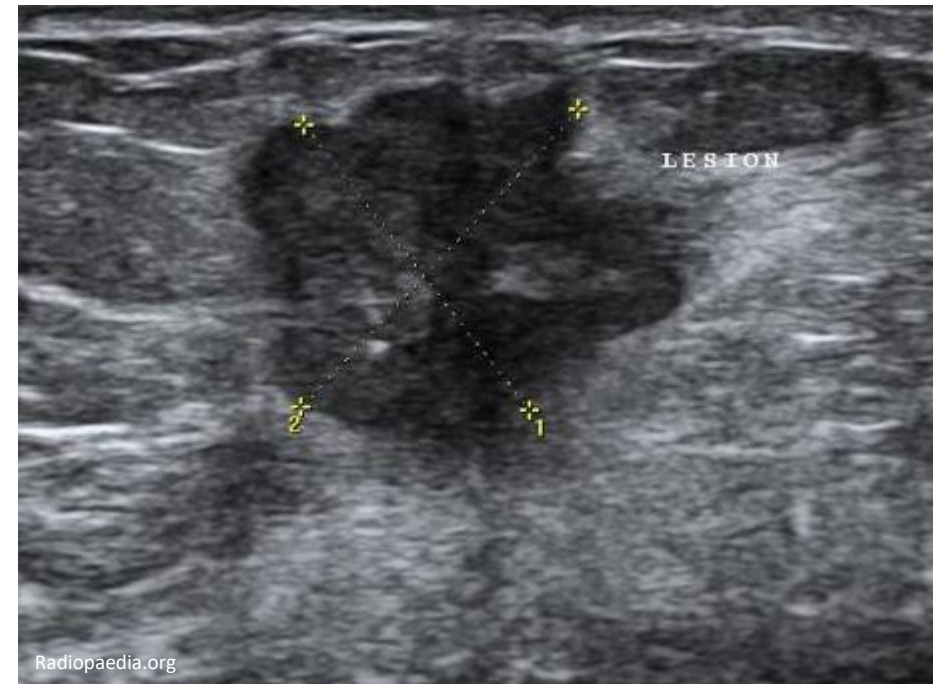
Phenotype of tumor cell	Basal	Basoluminal		Luminal
Molecular subtype	Triple negative	HER-2+	Luminal B	Luminal A
% of breast cancers	15-20%	10-15%	20%	40%
Receptor expression		HER-2	ER+/PR+	
Histological grade	Grade 3			Grade 1/2
Prognosis	Poor			Good
Therapeutic response	Chemotherapy	Herceptin	Endocrine	

IMAGING

Screening: mammography

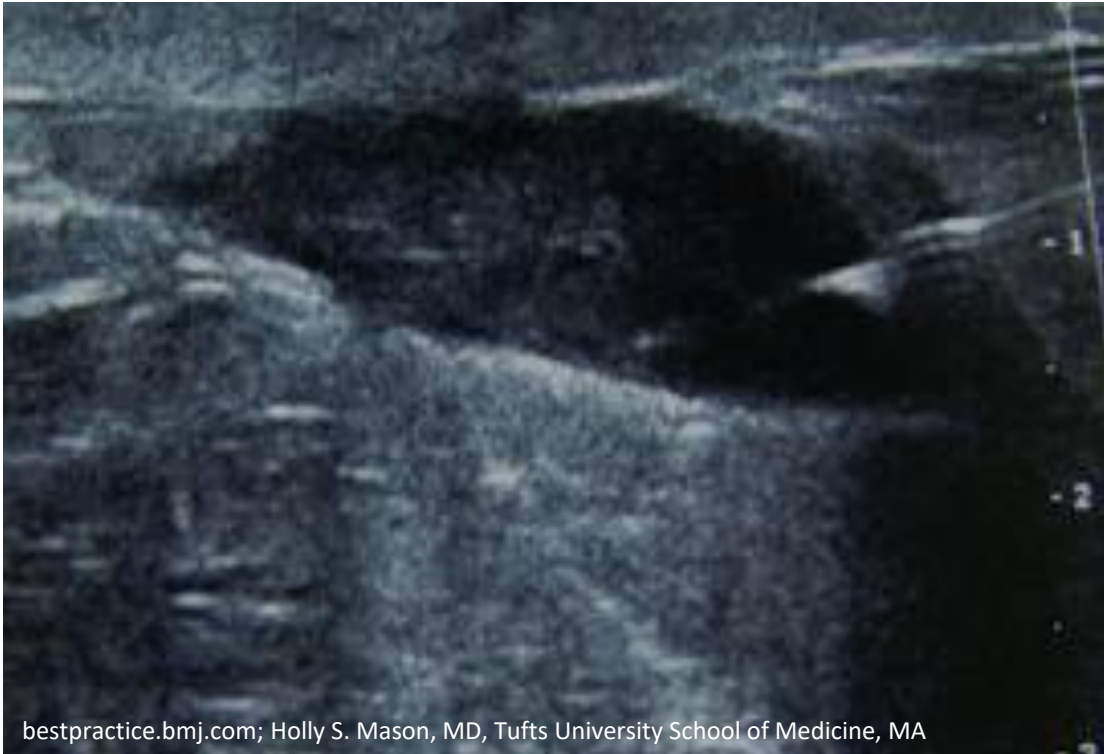


Ultrasound

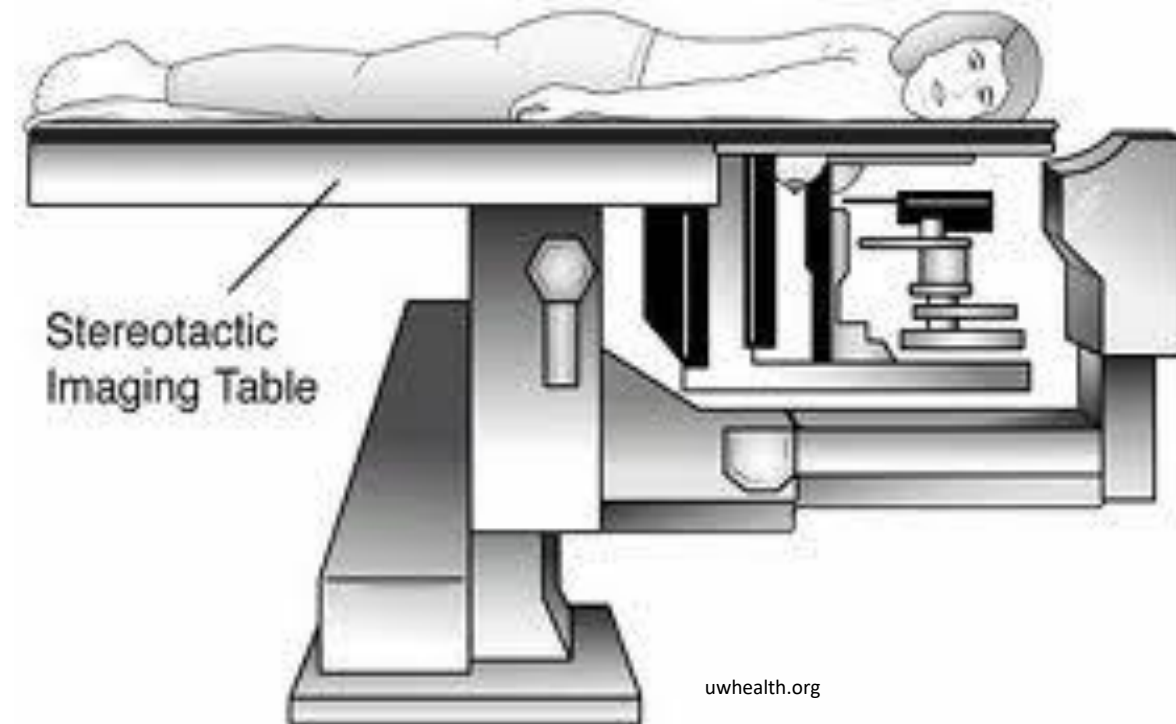


PREOPERATIVE SAMPLING

Ultrasound-guided

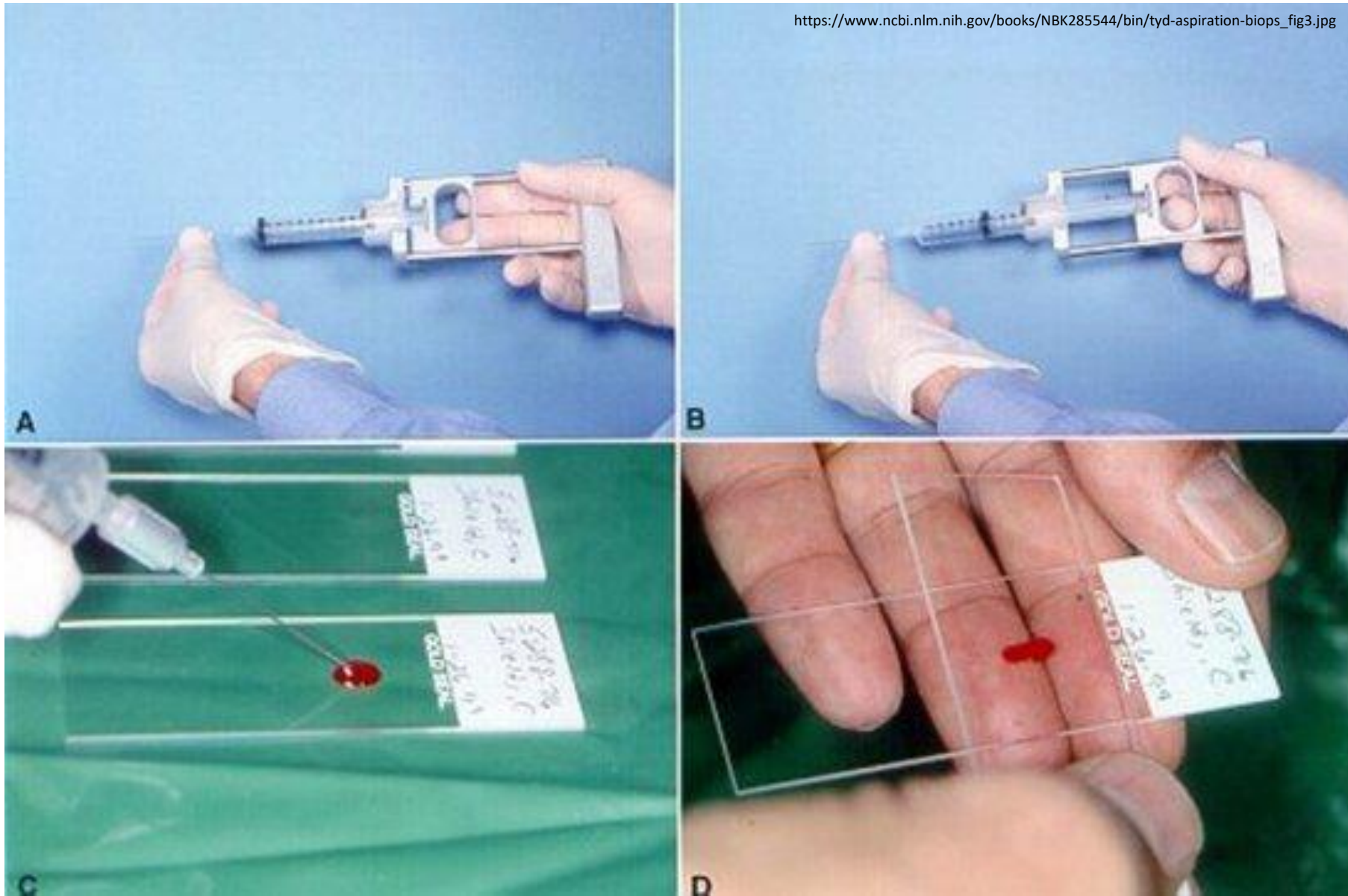


Stereotactic

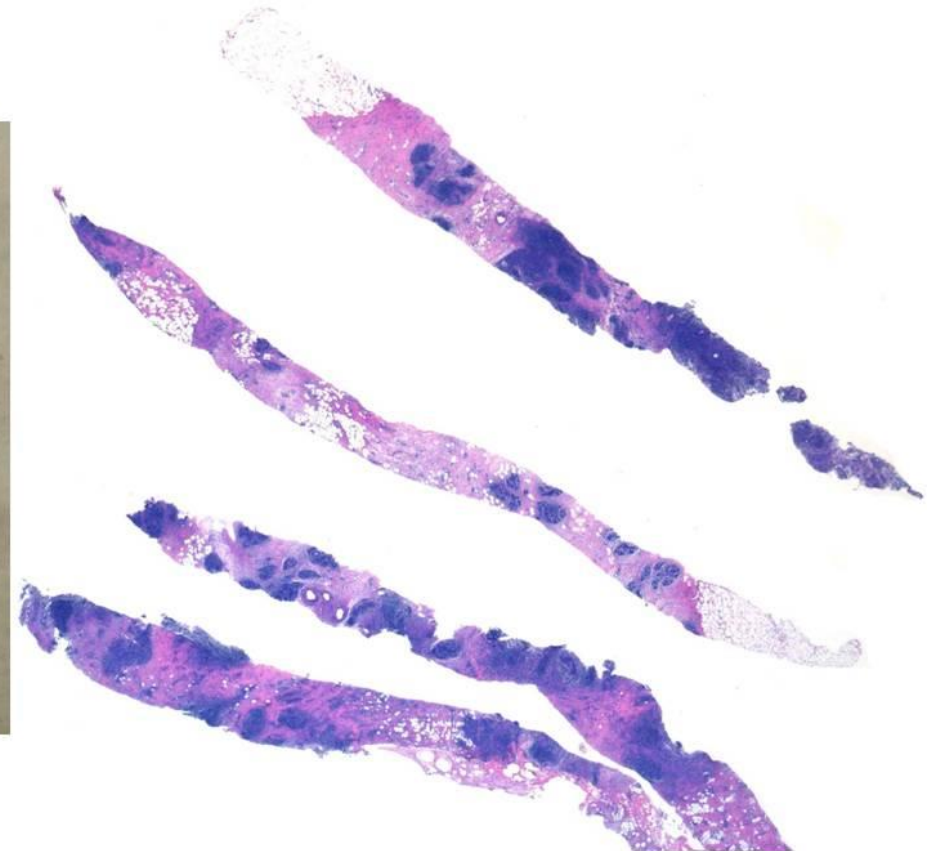


CYTOLOGY

FNAB/FNAC: fine needle aspiration biopsy/cytology



CORE BIOPSY



WHICH ONE TO CHOOSE?

FNAB

- Quick
- Cheap
- High diagnostic accuracy in the hand of a trained cytopathologist
- Trained cytopathologist required

Core biopsy

- Histological diagnosis
- Workup of microcalcifications
- Markers for primary systemic therapy
- Danger of tumor inoculation
- Local anesthesia required

CORE BIOPSY IS NECESSARY:

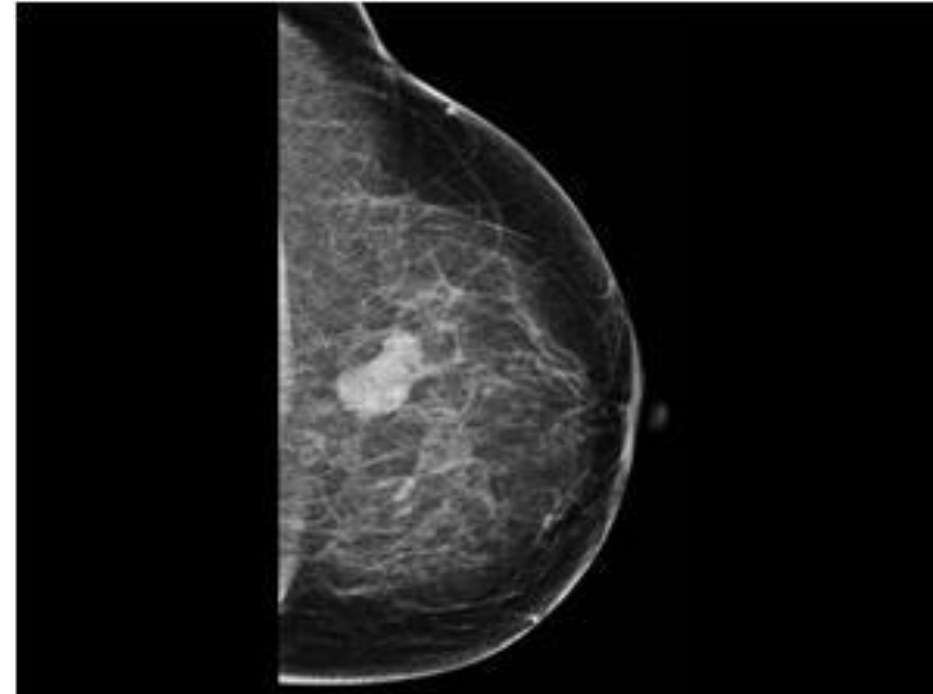
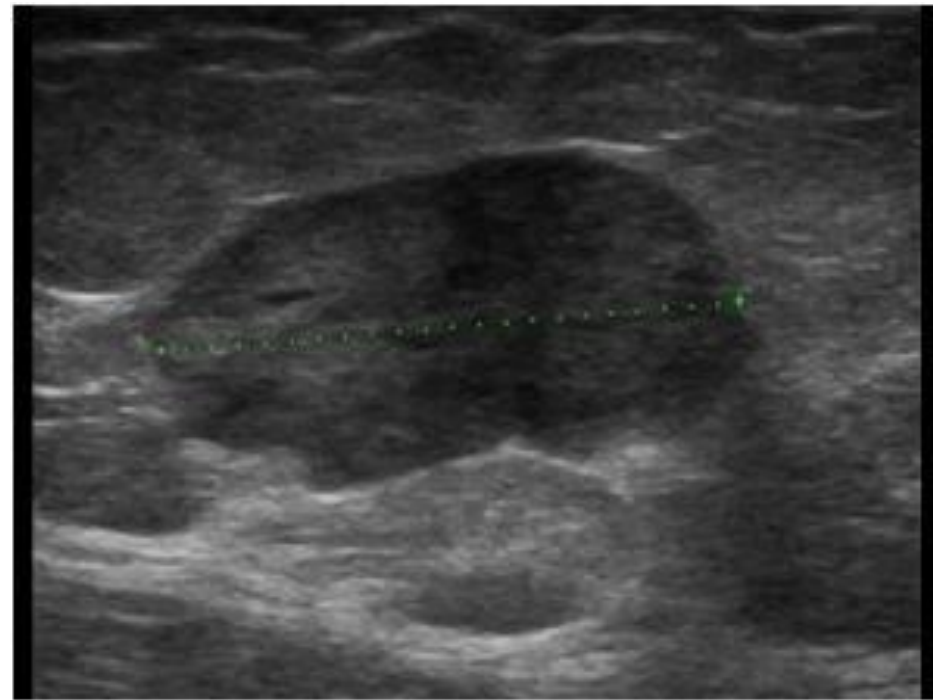
- **Lack of trained cytopathologist**
- **Primary systemic therapy is expected**
- **If mastectomy is indicated**
- **Inconclusive FNAB**
- **Workup of microcalcifications**
- **Diagnostic discrepancy**

CASE PRESENTATION

- 37-yr old woman
- palpated a mass in her breast
- solid 3 cm mass in the upper outer quadrant of the left breast

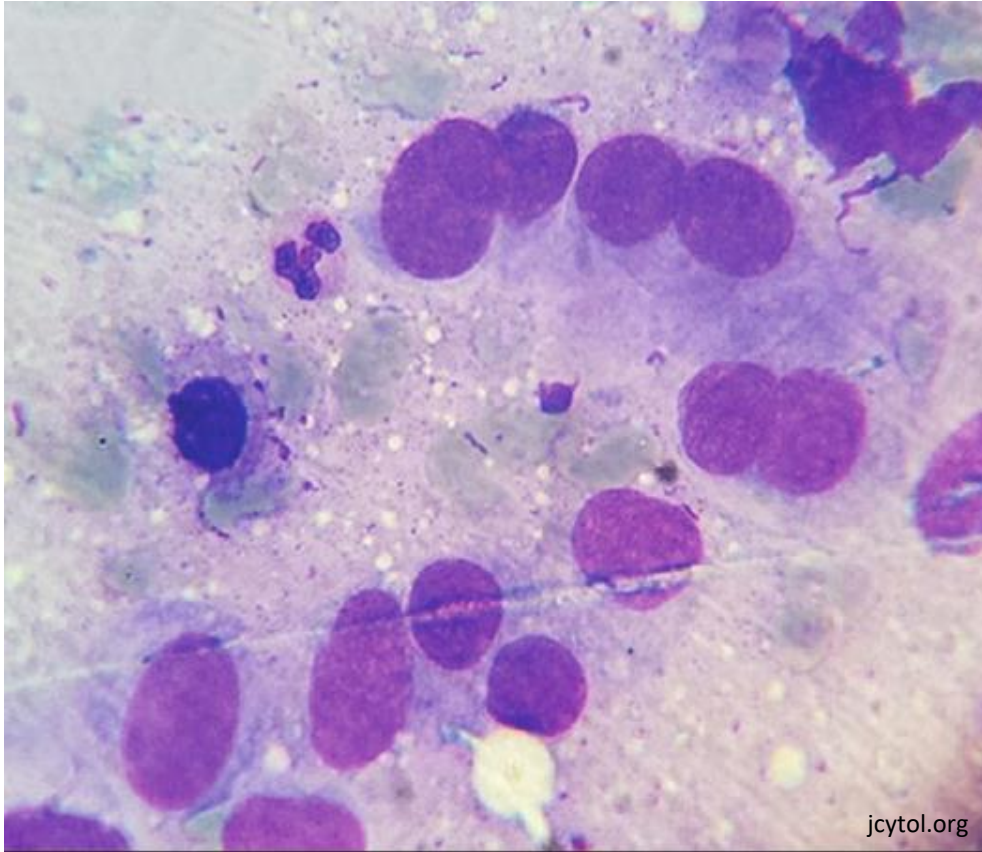
Radiological diagnosis:

Probably benign; consistent with a fibroadenoma.



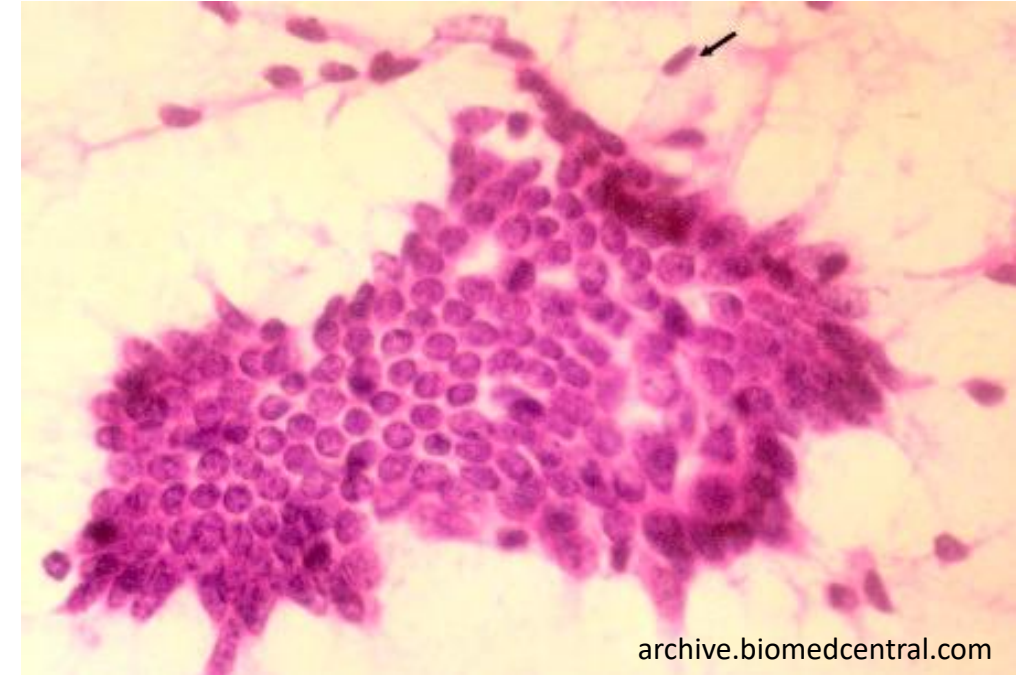
FNAB

Examined lesion



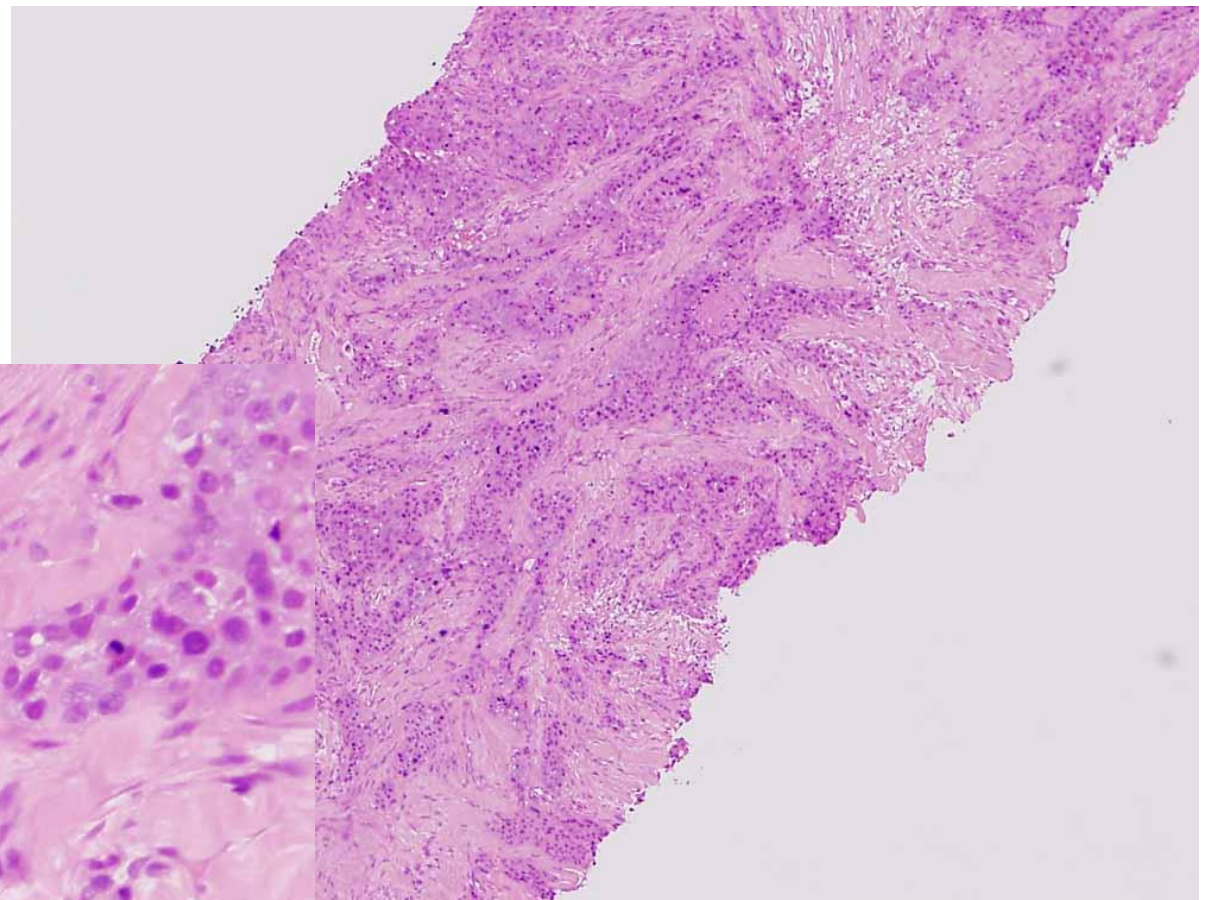
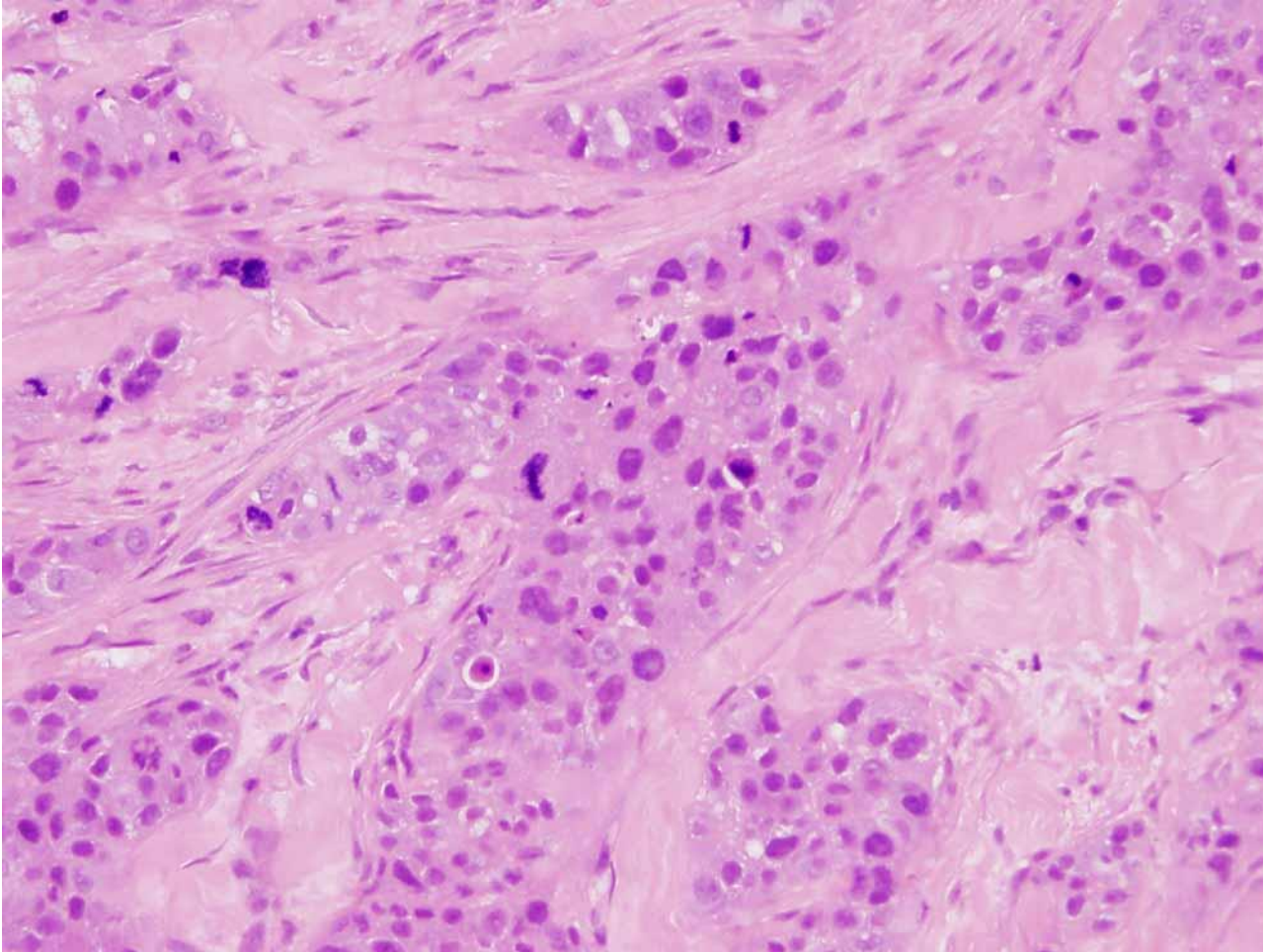
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Reference: Fibroadenoma



Dg.: Cytology: indicative of malignancy!
Radiology and cytology are contradictory. Core biopsy suggested.

Core biopsy

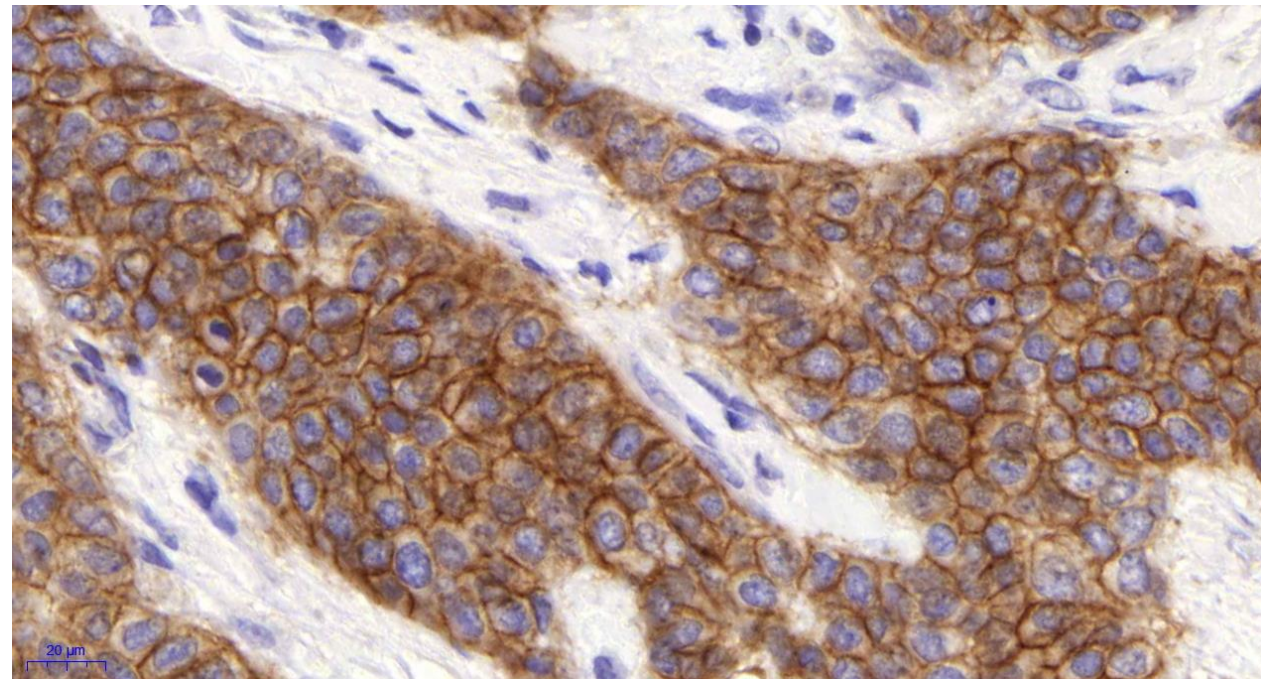


Dg.: Invasive carcinoma, NST
(no special type).
Grade 3.

ER



HER-2



3+ !!!

