

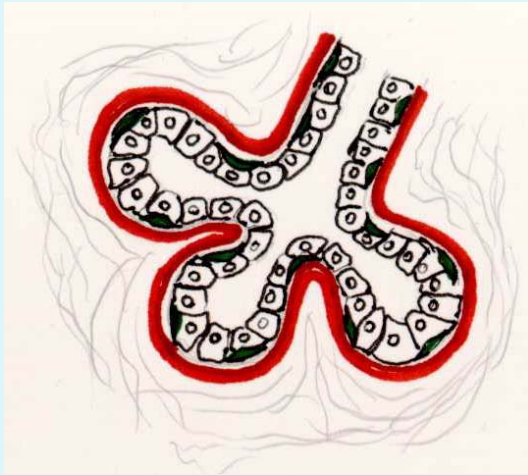
# Breast Pathology

Helge Stalsberg MD

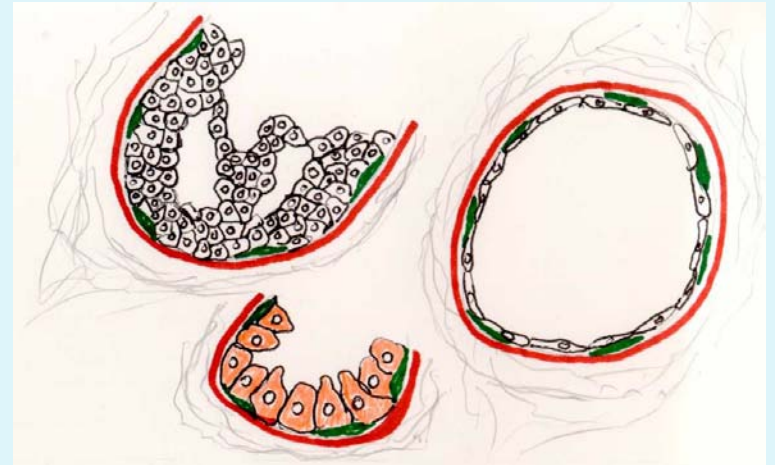
University Hospital of North Norway



# Major classes of breast disease



Normal breast



Benign breast disease



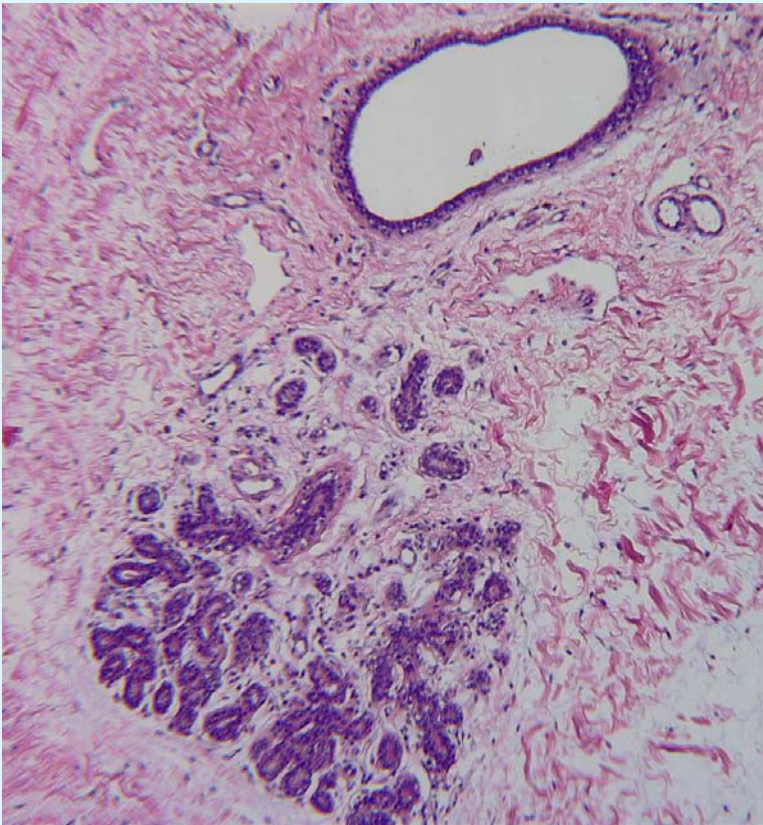
Carcinoma in situ



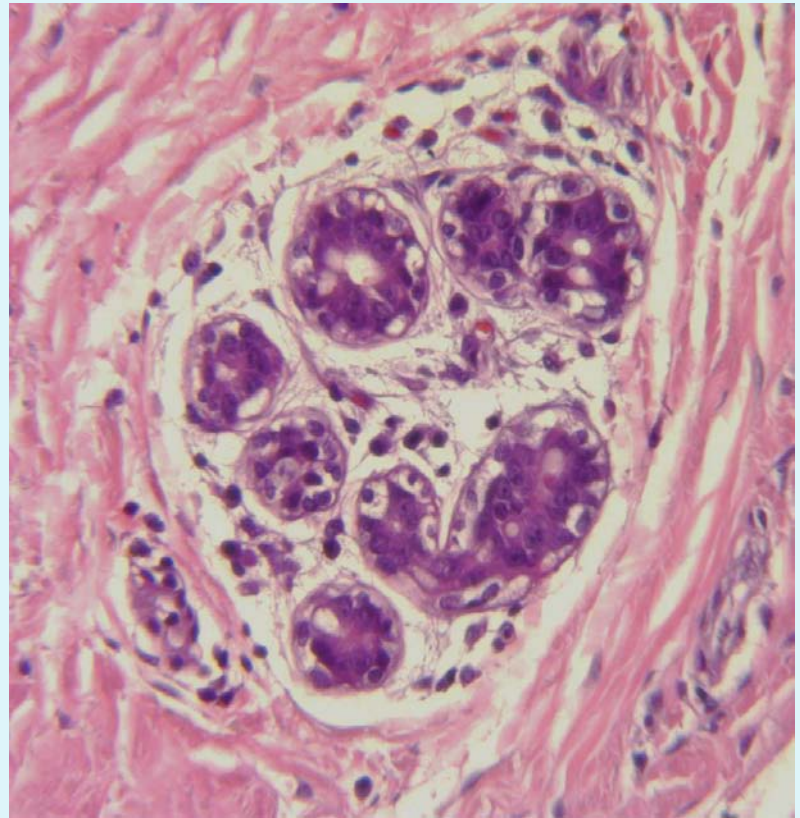
Invasive carcinoma



# Normal breast



Lobule and duct

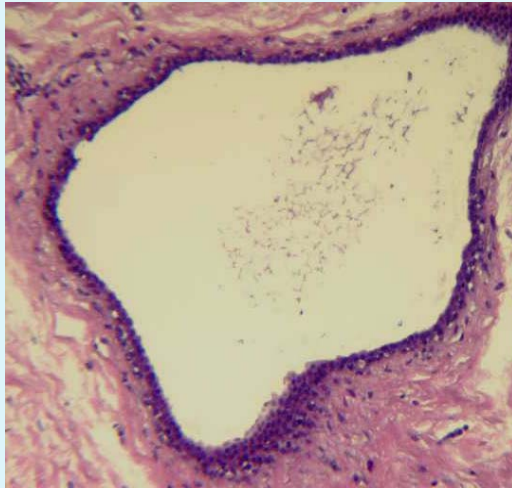


Lobule

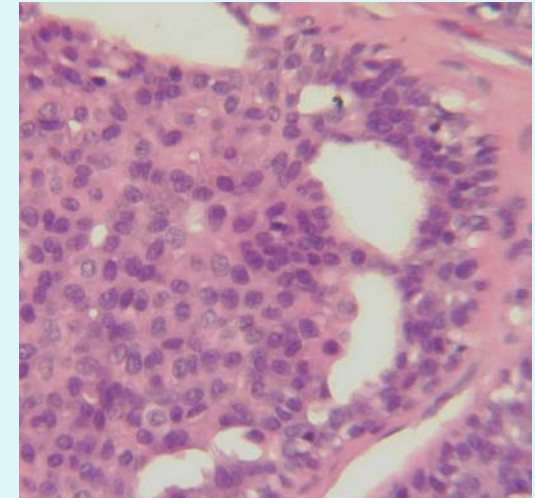
# Benign Breast disease:

## Elements of fibrocystic disease

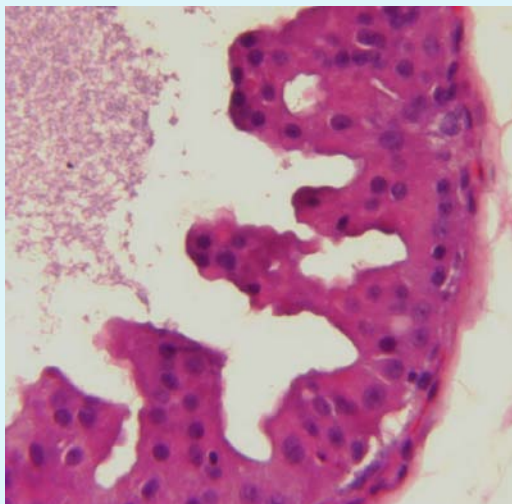
Cyst



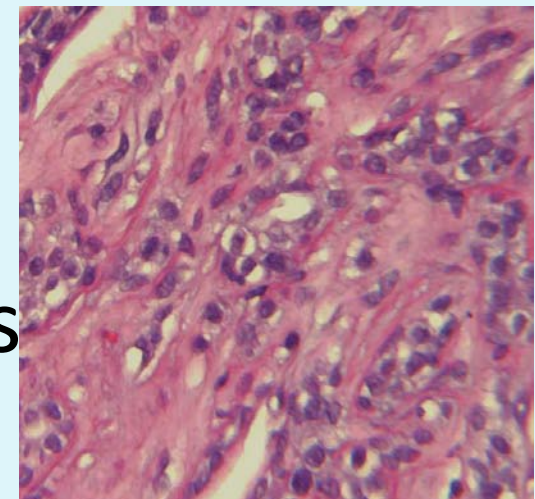
Ductal hyperplasia



Apo-crine metaplasia



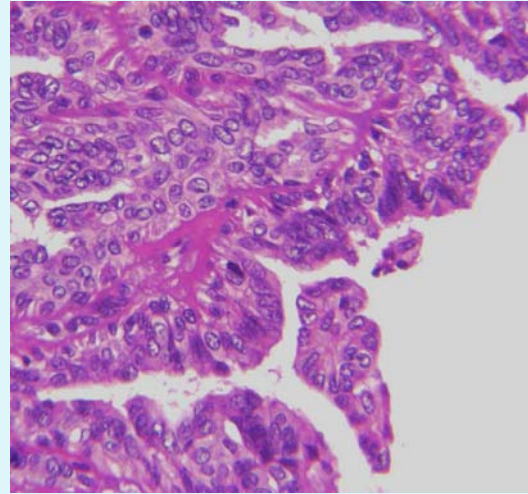
Sclerosing adenosis



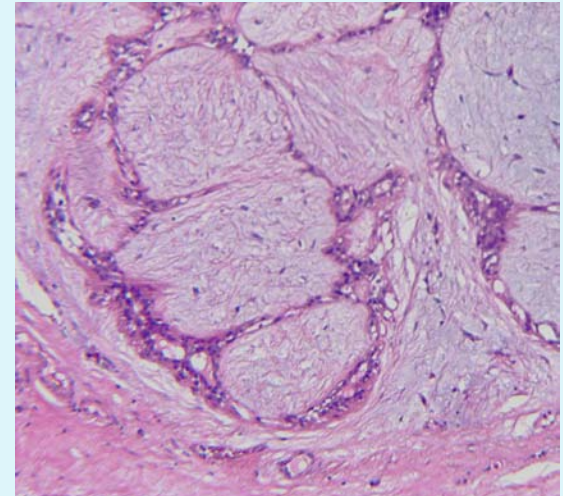


# Benign breast disease:

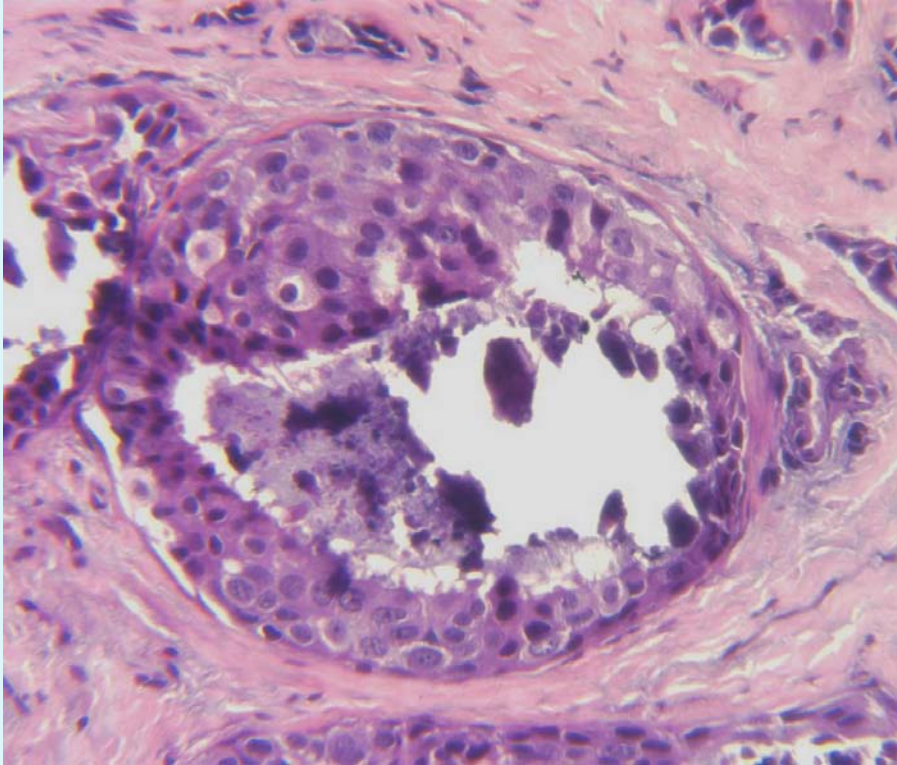
Intraductal  
papilloma



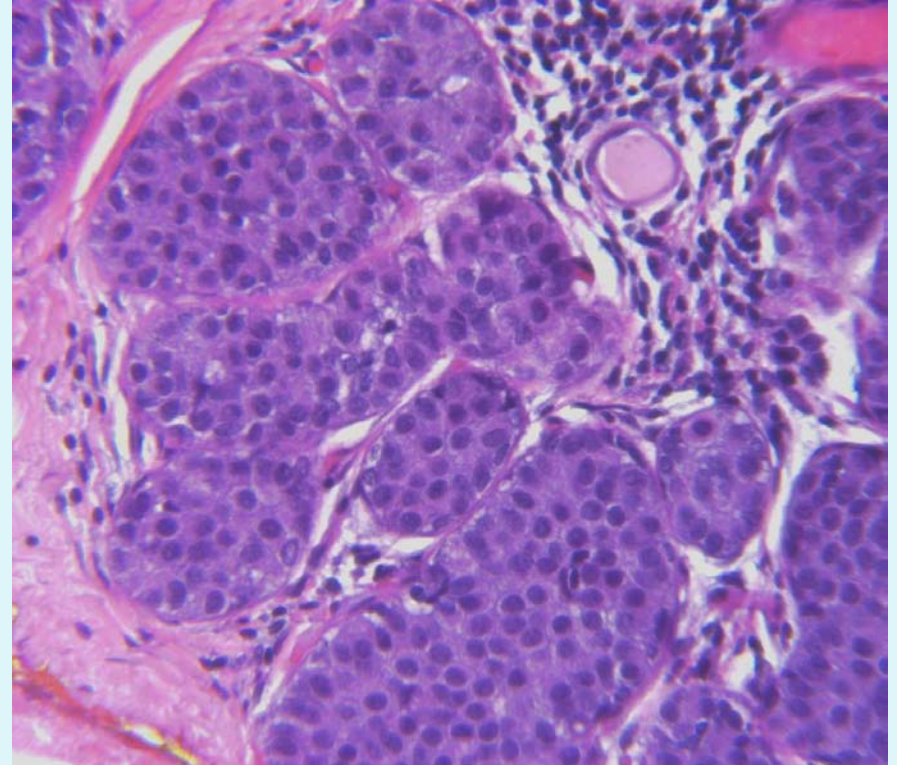
Fibro-  
adenoma



# Carcinoma in situ

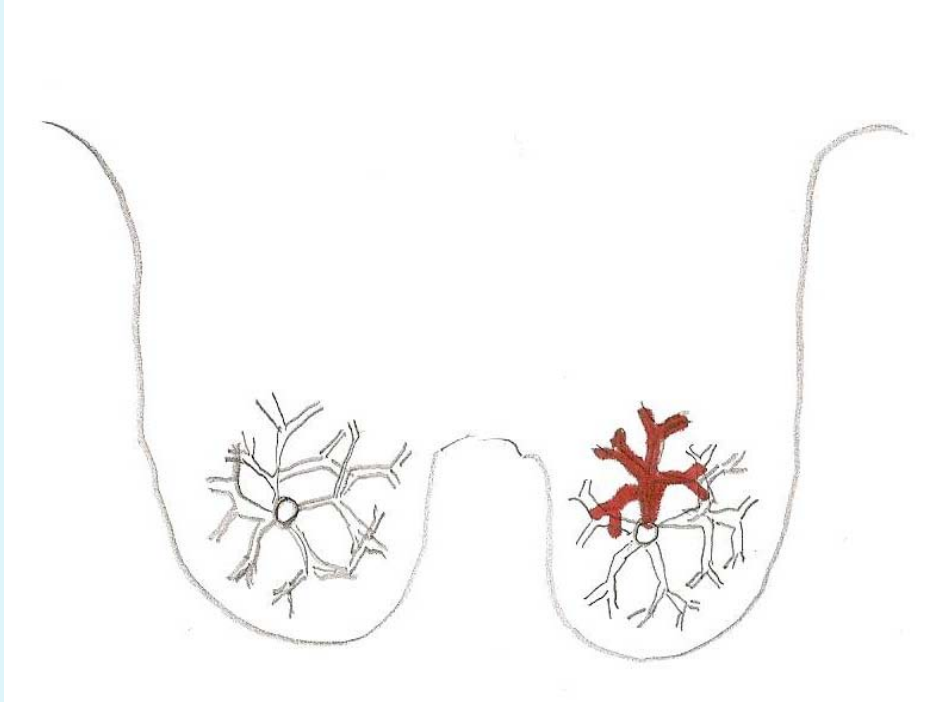


Ductal carcinoma in situ.  
DCIS

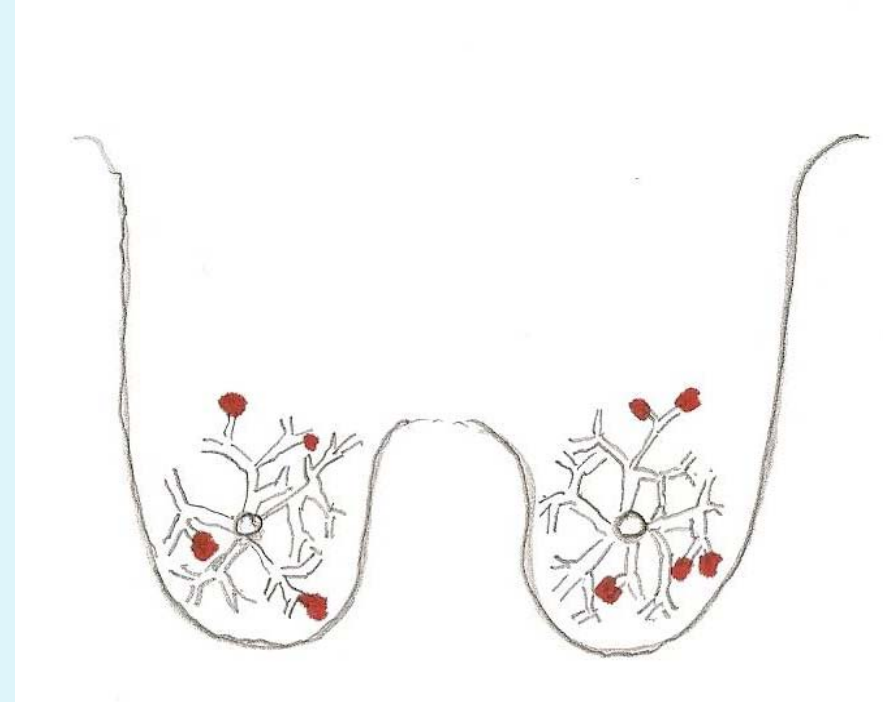


Lobular carcinoma in situ.  
LCIS

# The distribution of carcinoma in situ



Ductal carcinoma  
in situ



Lobular carcinoma  
in situ

# **Invasive carcinoma:**

## The pathology report

- The definite diagnosis
- The local/regional extent of the disease
- Data relevant to prognosis
- Data relevant for the choice of treatment



# The Pathology report, Ca. resection

## MAIN DIAGNOSIS:

- Local resection (lumpectomy) of breast with invasive ductal carcinoma

## OTHER FEATURES:

- TUMOR SIZE: 3 cm
- LOCATION: Upper inner quadrant, right breast
- TUMOR GRADE: 2
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- pTNM CLASSIFICATION: pT1N2Mx
- EXTRA-TUMORAL BREAST: Fibrocystic disease

# The Pathology report

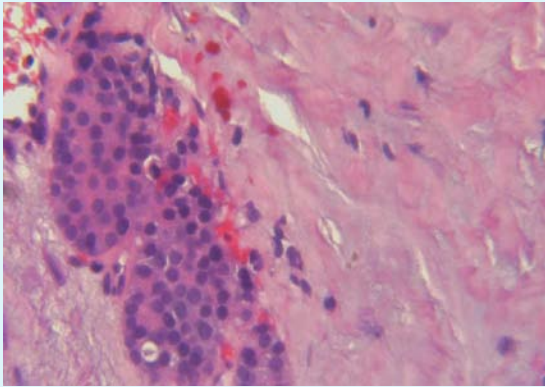
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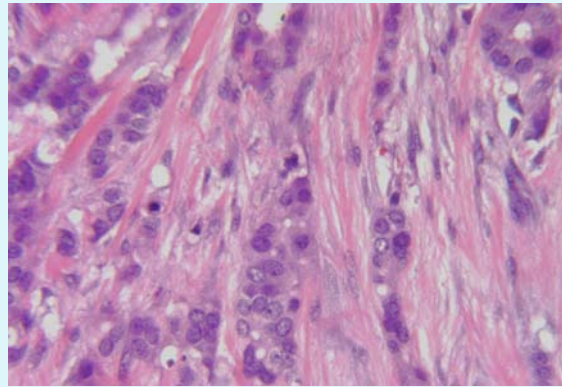
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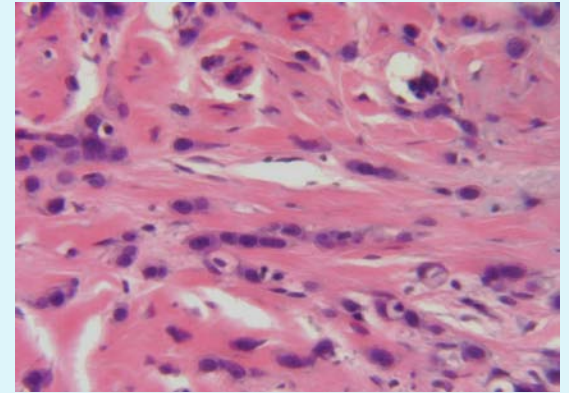
# Types of invasive carcinoma



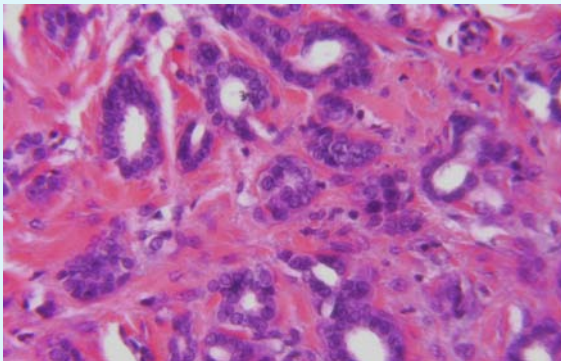
Ductal



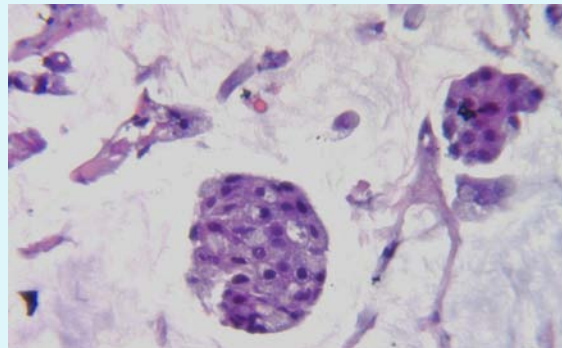
Ductal



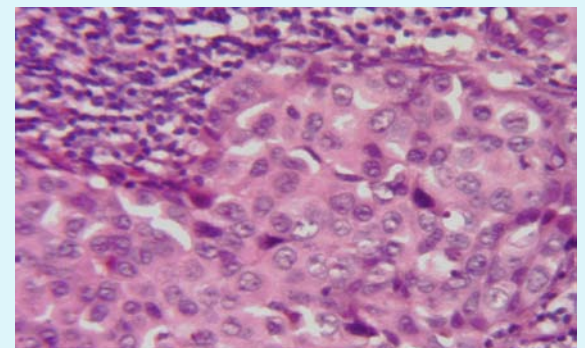
Lobular



Tubular



Mucinous



Medullary



# Inflammatory carcinoma

- *The diagnosis is based on clinical features:*

Diffuse erythema, peau d'orange, tenderness, induration, warmth, enlargement

- *And carcinoma confirmed by biopsy:*

In most cases an invasive ductal carcinoma grade 3 with tumor in dermal lymphatics

# The Pathology report

## MAIN DIAGNOSIS:

- Local resection (lumpectomy) of breast with invasive ductal carcinoma

## OTHER FEATURES:

- TUMOR SIZE: 3 cm
- LOCATION: Upper inner quadrant, right breast

## ● TUMOR GRADE (1-3): 2

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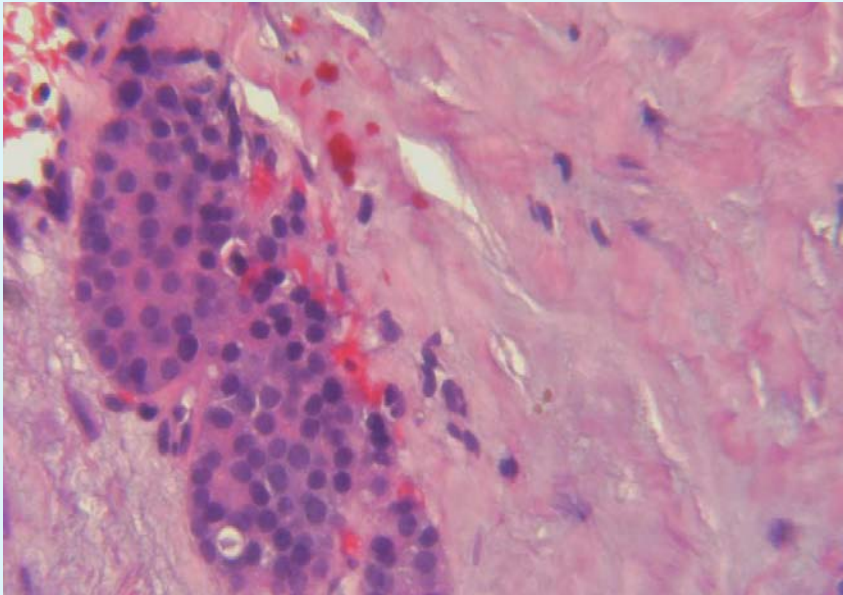
# Tumor grading

Feature	Score
Tubule formation	1-3
Nuclear atypia	1-3
Number of mitoses	1-3

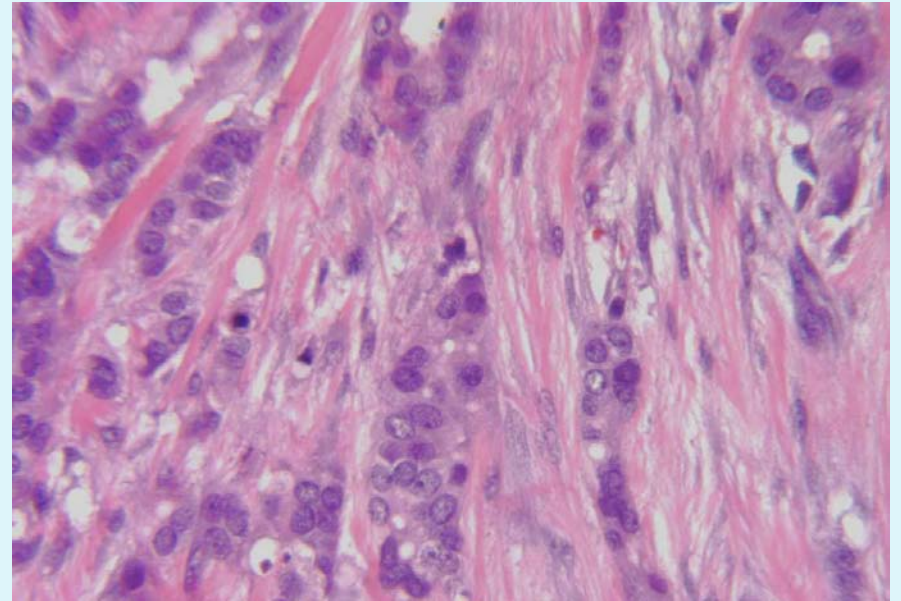
Grade	Sum of scores
Grade 1	3-5
Grade 2	6-7
Grade 3	8-9



# Tumor grades



Grade 1



Grade 3

# The Pathology report

## MAIN DIAGNOSIS:

- Local resection (lumpectomy) of breast with invasive ductal carcinoma

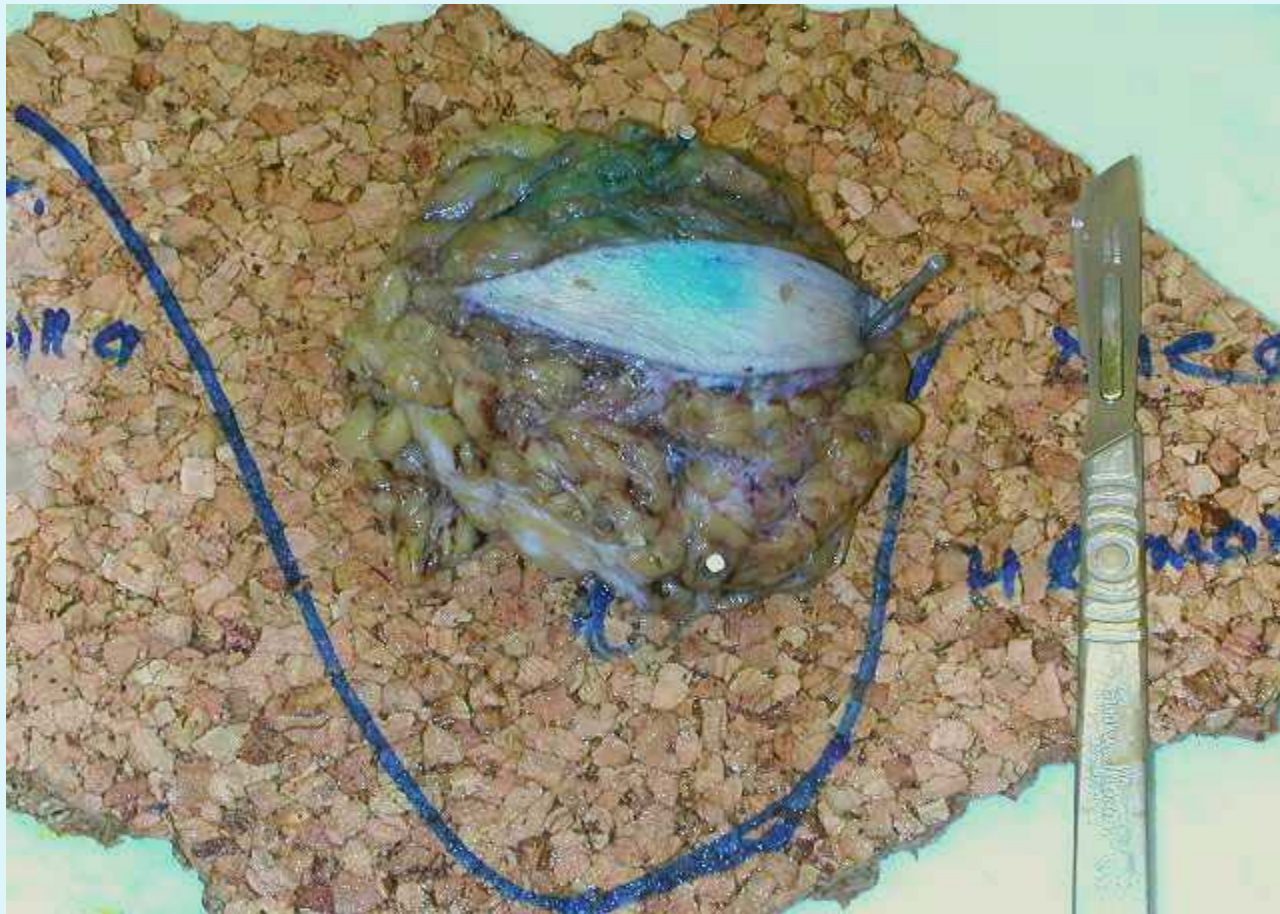
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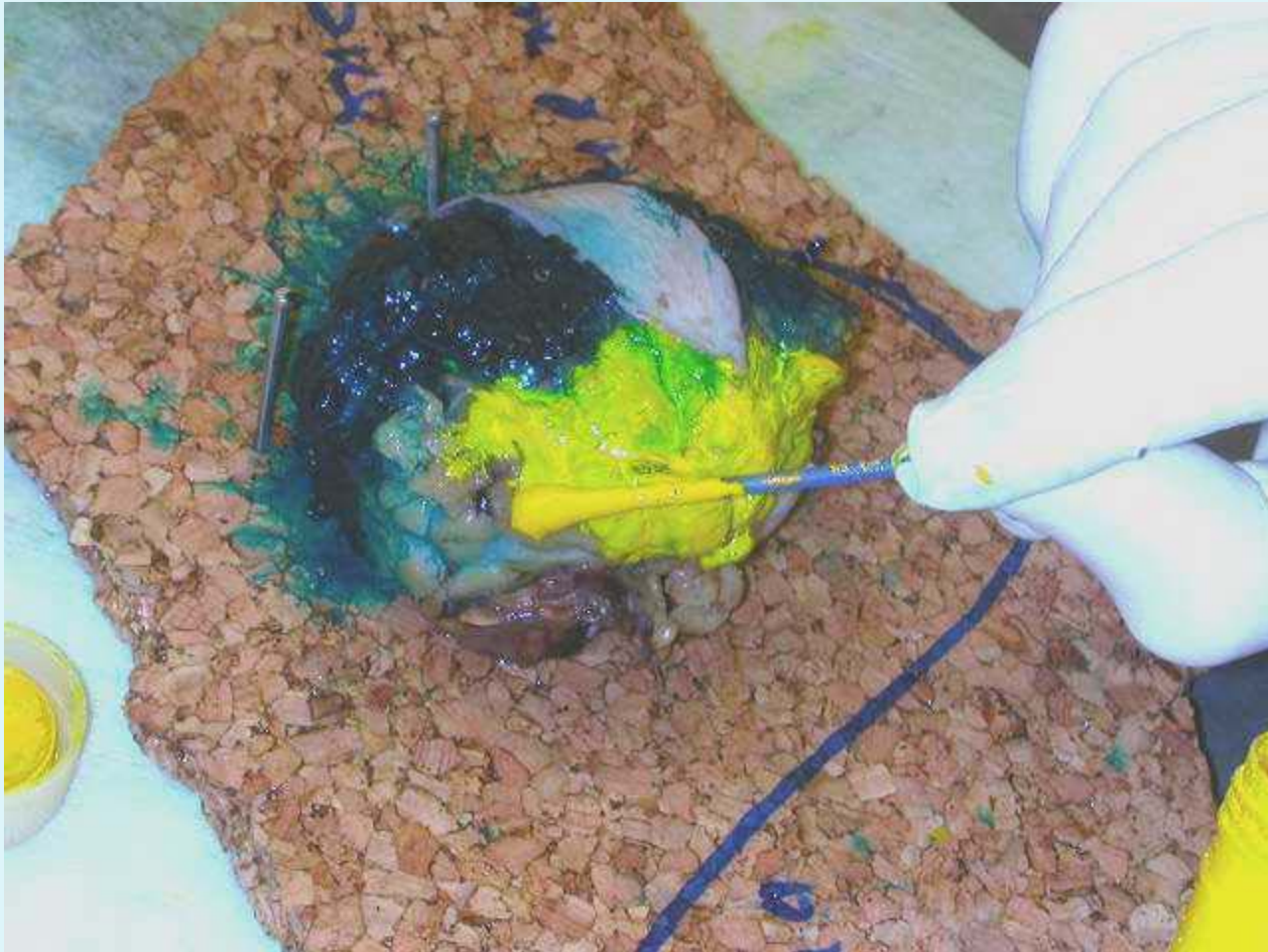
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# Orientation of the specimen

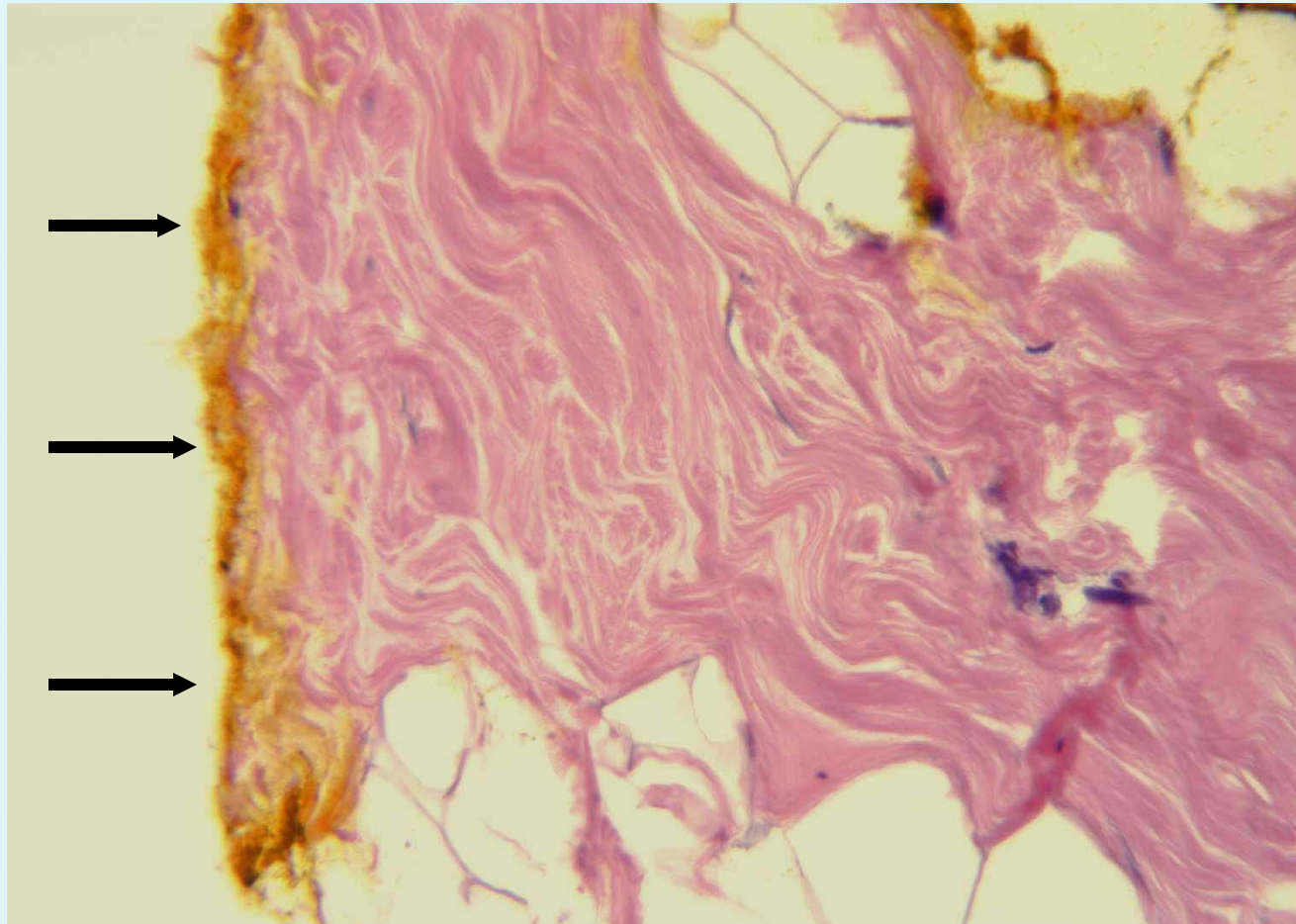




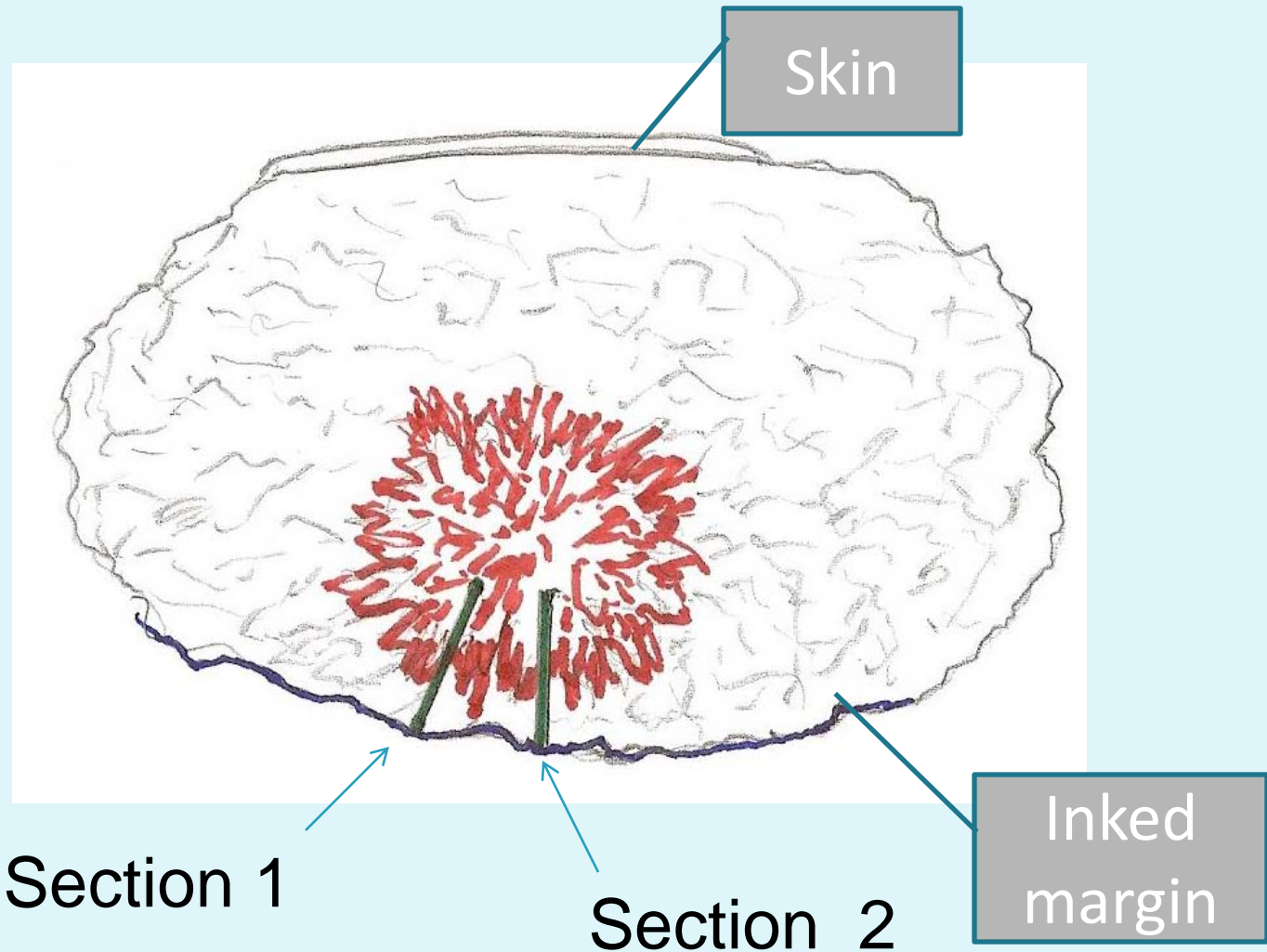
# Inking of resection margins



# The inked surface as seen in the microscopic slide



# Examination of resection margin



# The Pathology report

## MAIN DIAGNOSIS:

- Local resection (lumpectomy) of breast with invasive ductal carcinoma

## OTHER FEATURES:

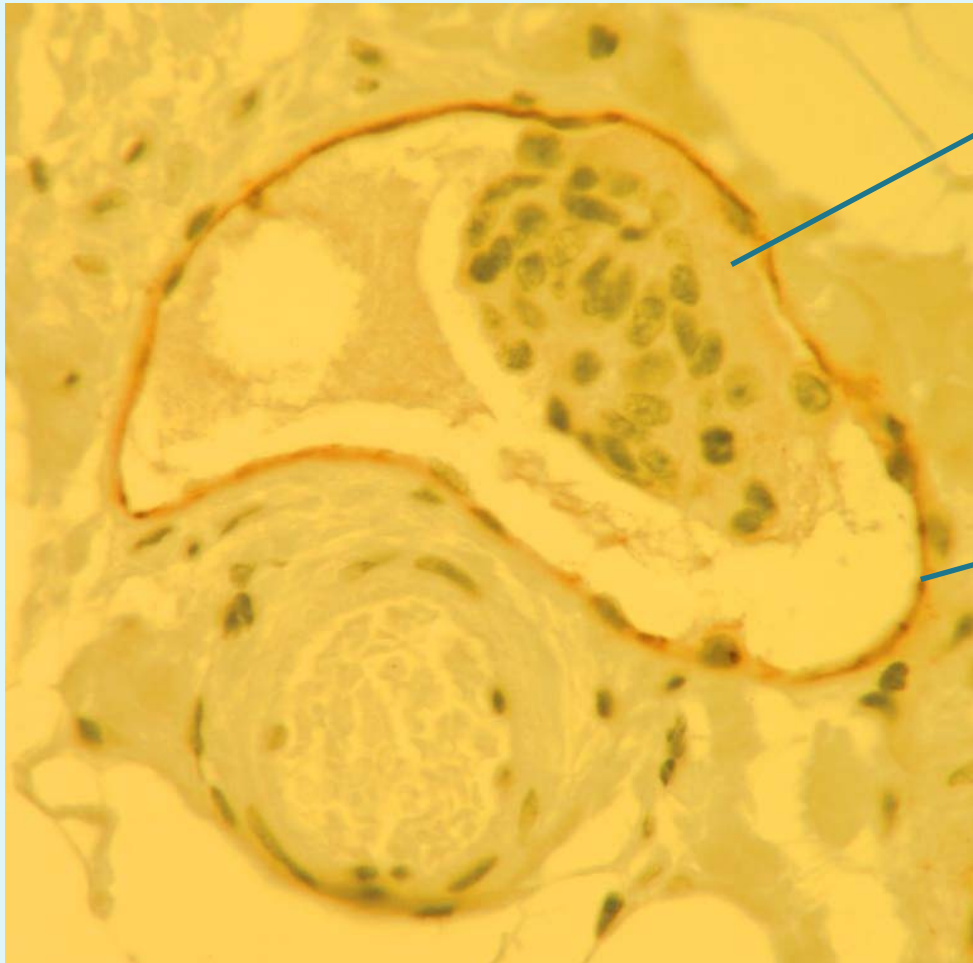
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# Vascular invasion



Tumor tissue

Lymph vessel

# The Pathology report

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DCIS GRADE (1-3): 3

DCIS MINIMUM DISTANCE TO

RESECTION MARGIN:

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# The Pathology report

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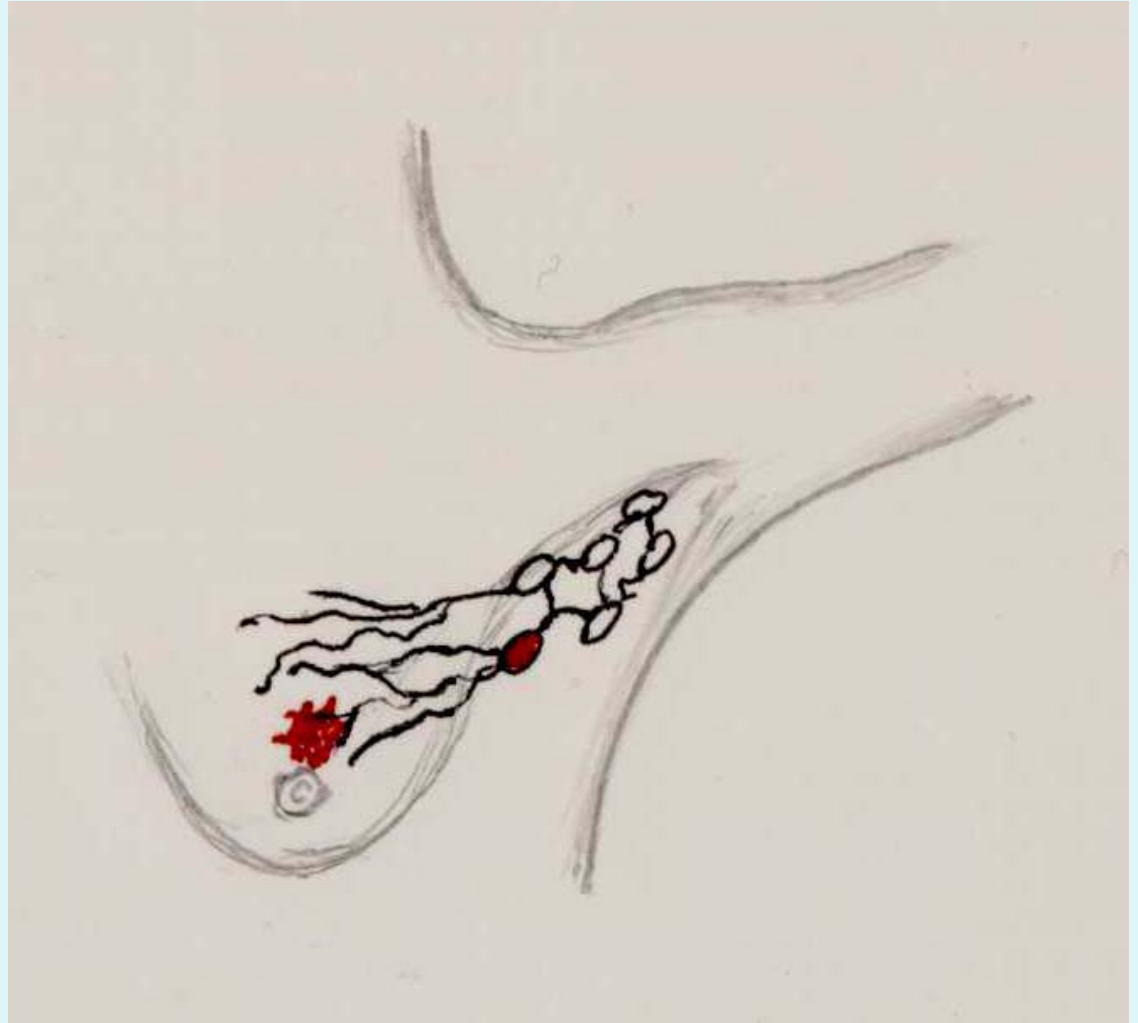
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# Axillary lymph nodes

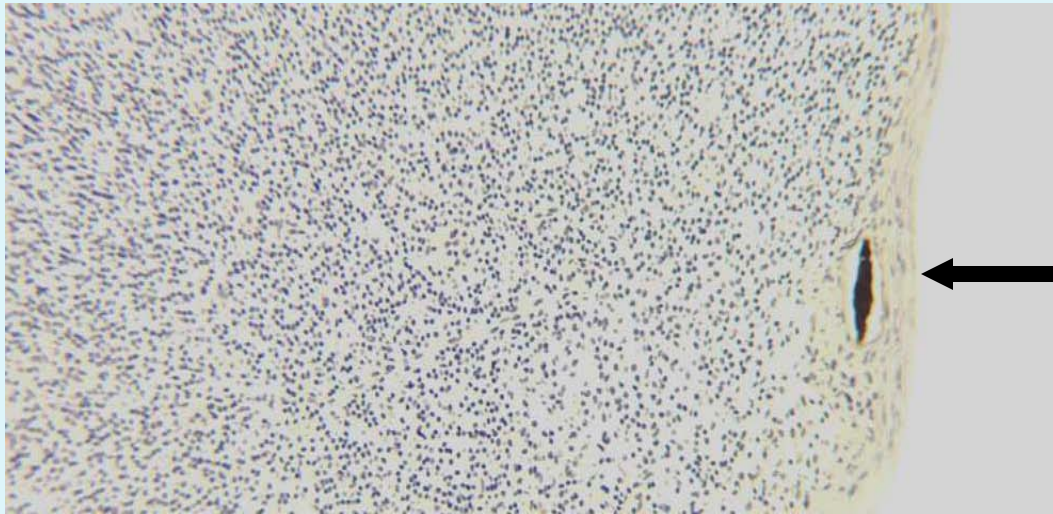
Breast cancer spreads through lymphatic channels to axillary lymph nodes.

When axillary content is removed, all nodes are searched and embedded for microscopy





# Micrometastasis



Micrometastasis spotted in otherwise negative sentinel node

# Tumor deposits in lymph node

Size	Designated	pTNM class
> 2 mm	Metastasis	pN1
≤ 2 mm; > 0.2 mm	Micrometastasis	pN1(mi)
≤ 0.2 mm	Isolated tumor cells	pN0 (i+)

# The Pathology report

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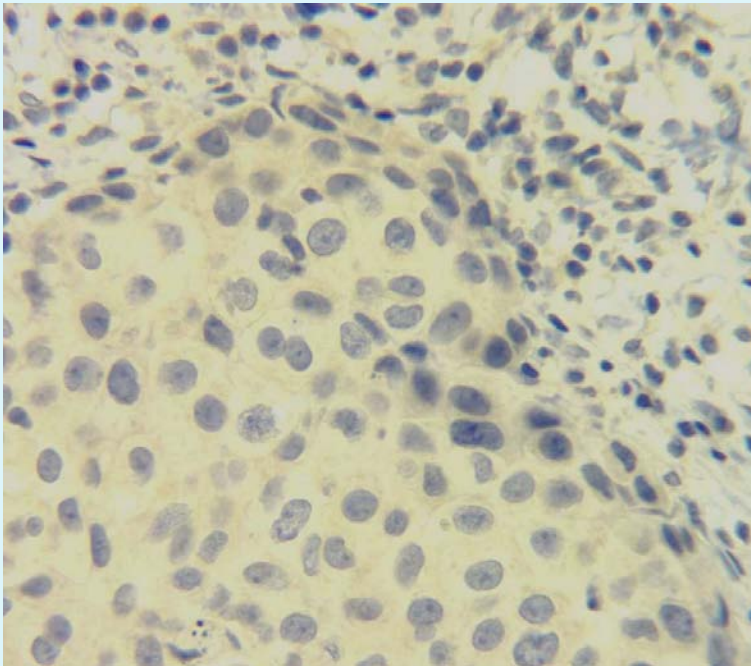
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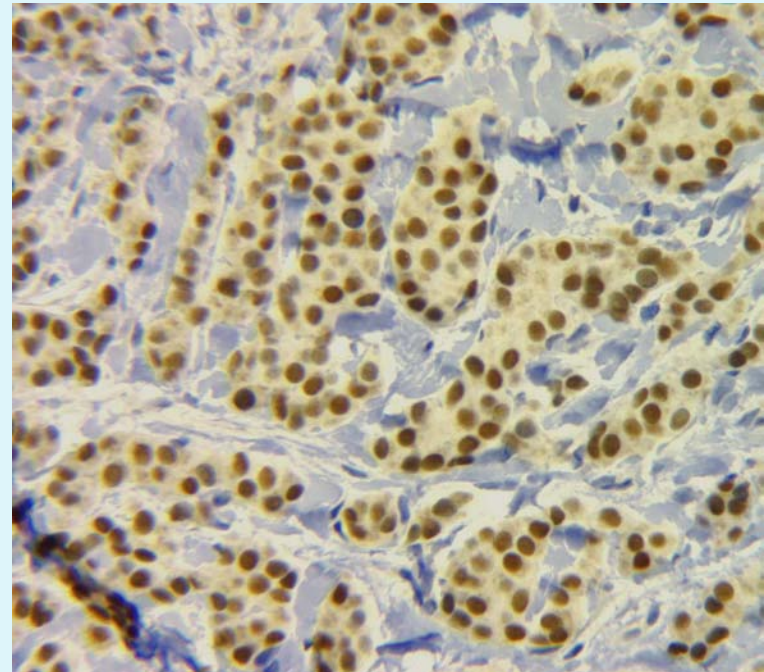
Negative for progesteron receptor

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# Immunohistochemistry: *Estrogen receptor*



Negative: No benefit  
from hormone therapy



Positive: Will benefit  
from hormone therapy



# The Pathology report

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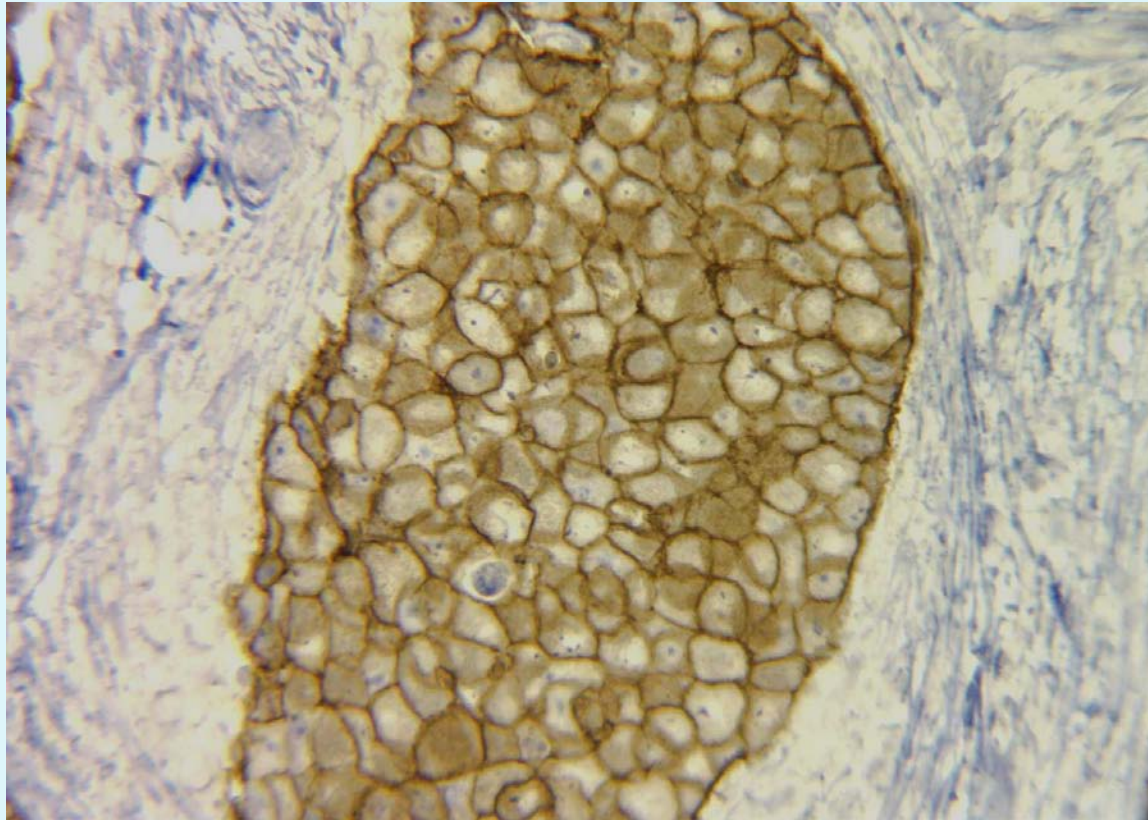
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# Immunohistochemistry

## *Her-2*



Her-2 positive. Will benefit from Herceptin therapy

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Is Breast pathology in Ghana similar  
to that in the industrialized countries  
?

A comparison of non-inflammatory  
pathology diagnoses in Ghana (KATH)  
and Norway (UNN)

The relative frequency of major pathology diagnoses in breast specimens from KATH and UNN 2006-2009

Diagnosis	Ghana, KATH (162)		Norway, UNN (2173)	
	N	%	N	%
Fibroadenoma	46	28 %	311	14 %
Fibrocystic dis.	20	12 %	524	24 %
Atypical hyperpl	0	0 %	28	1 %
Carcinoma in situ	6	4 %	301	14 %
Carcinoma	90	56 %	1009	46 %

# The relative frequency of main types of invasive breast carcinoma 2006-2009

Type	Ghana, KATH (92)		Norway, UNN (1012)	
	N	%	N	%
Ductal and NOS	85	92,4	873	86,3
Lobular	1	1,1	97	9,6
Tubular	0	0,0	10	1,0
Mucinous	3	3,3	25	2,5
Medullary	1	1,1	3	0,3
Papillary	2	2,2	3	0,3

# Tumor grade in Core biopsies of Breast cancer Preliminary data 2009

Tumor grade	Ghana (25 cases)	Norway (93 cases)
Grade 1	16%	33%
Grade 2	28%	44%
Grade 3	48%	16%



# Hormone receptors in Core biopsies of Breast cancer Preliminary data 2009

Hormone receptor	Ghana (25 cases)	Norway (93 cases)
Estrogen receptor	48% positive	89% positive
Progesteron receptor	12% positive	62% positive

# Her-2 overexpression in Core biopsies of Breast cancer Preliminary data 2009

<b>Ghana (25 cases)</b>	<b>Norway (93 cases)</b>
32% positive	12% positive