

AMSER Case of the Month: November 2018

42 year old with right breast mass



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Patient Presentation

- HPI: Patient is a 42 yo female that presented with a palpable right breast mass for 2 months. Patient last had mammography 2 years prior. Patient denies breast pain, tenderness, skin changes, or discharge from nipples.
- PMHx: LMP 3.5 mo ago, chlamydia, female infertility
- PSHx: No pertinent surgical hx
- Family Hx: DM, HTN, paternal aunt had breast cancer, maternal great aunt had breast cancer
- Medications: none

Physical Exam

General Appearance: No apparent distress

Neck: Thyroid normal, no masses

Skin: No rashes, lesions, or ulcers

C/V: Normal heart sounds, no murmurs or external edema

Lungs: Respiratory effort normal. Lungs clear bilaterally

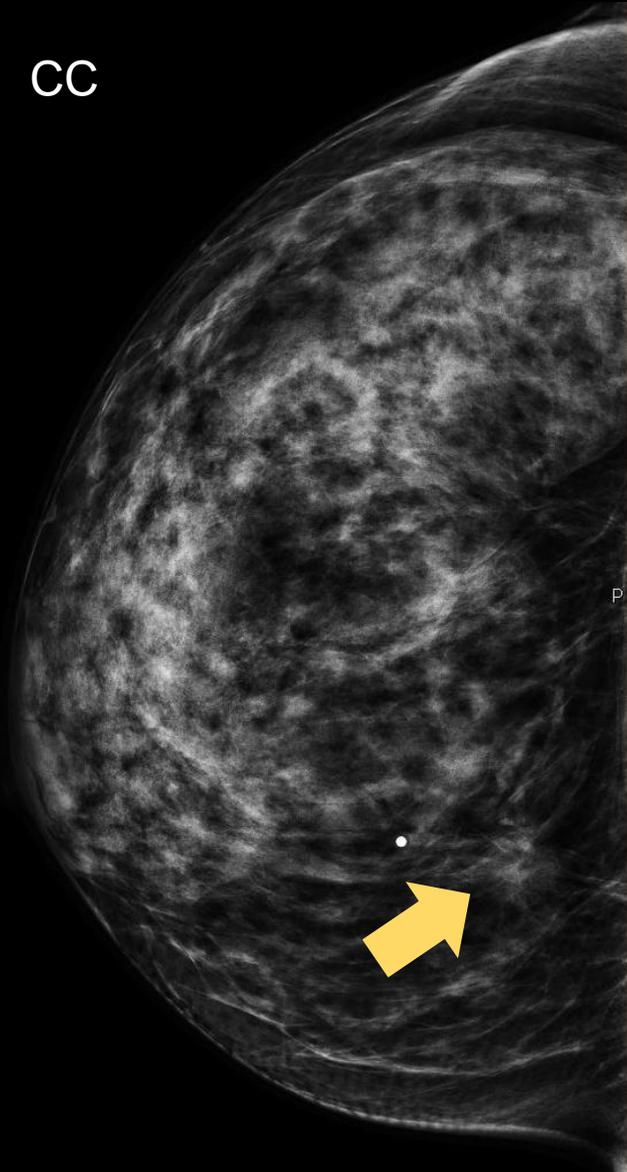
GI: No masses, tenderness, heme, hernias, or liver enlargement. Spleen not palpable

Abdomen: Benign, soft, non-tender, no hernia, masses, or lymphadenopathy

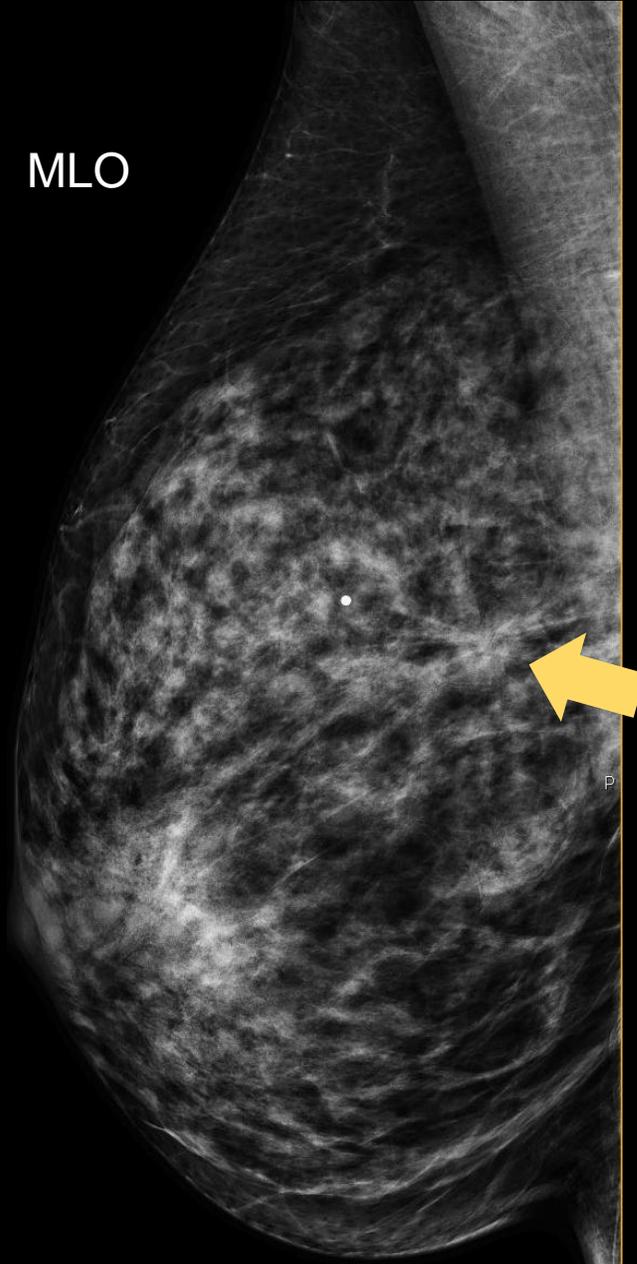
Breast Exam: Moderate fibrocystic condition of both breasts, A rounded lump noted in the left breast at 2 o'clock location approximately 8cm from the nipple, measures 3 cm in diameter and approximately 1 cm in depth. It is quite well circumscribed, movable, rubbery, nontender. No axillary lymphadenopathy. No galactorrhea.

Mammography

CC



MLO



Extremely dense breast tissue. There is a spiculated mass in the posterior upper inner quadrant of the right breast with overlying BB marker indicating site of palpable abnormality. There are no suspicious calcifications.

Ultrasound



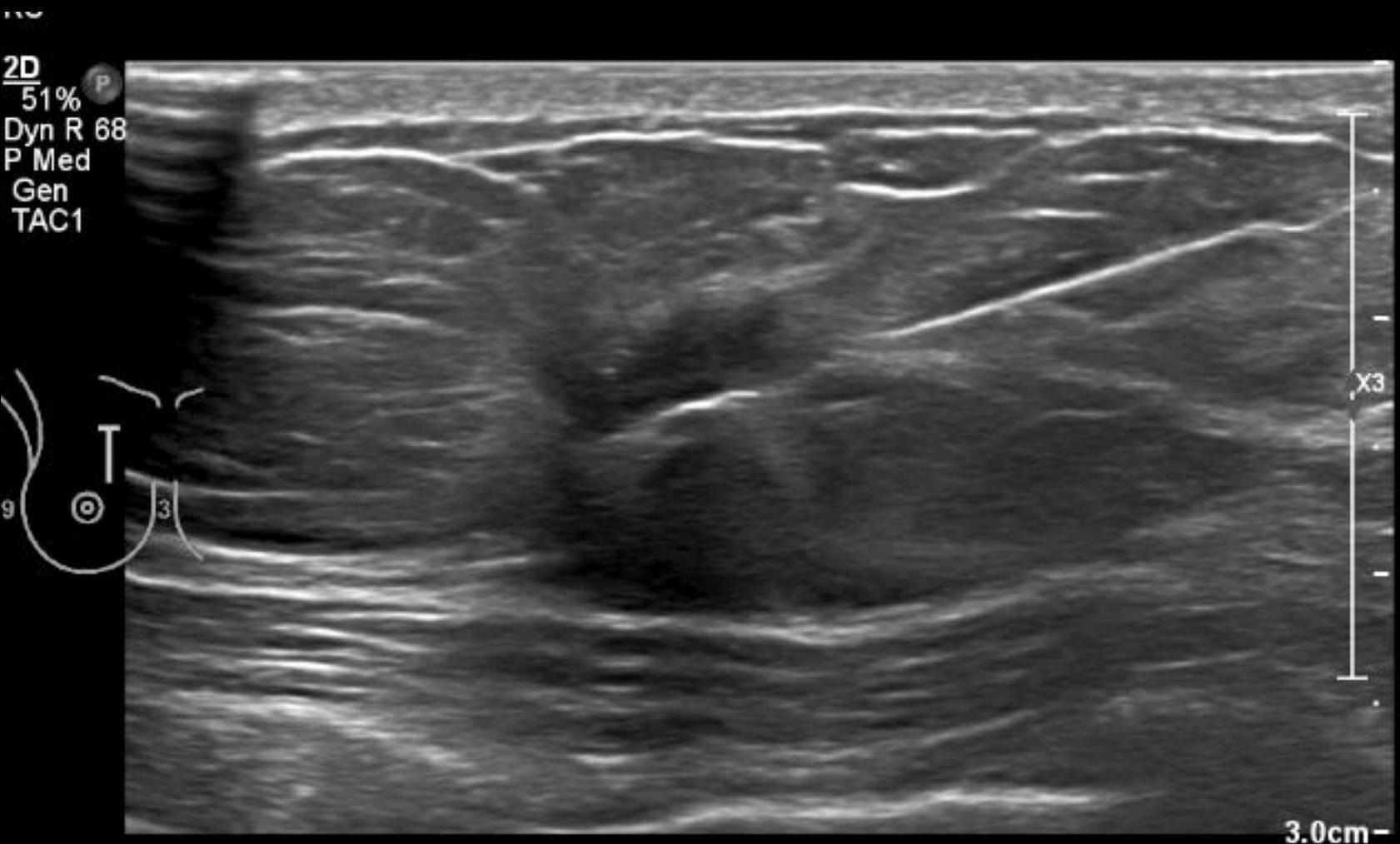
Focused sonography of the right breast over palpable abnormality demonstrates an irregular hypoechoic mass with posterior shadowing without increased internal vascularity.

BIRADS 5- Highly suggestive of malignancy

Differential diagnosis based on imaging

- Malignancy
- Fibrocystic change
- Fibroadenoma
- Intraductal papilloma
- Foreign body reaction/granuloma
- Idiopathic Granulomatous Lobular Mastitis
- Sclerosing adenosis
- Radial scar

Ultrasound-guided needle biopsy



Invasive ductal carcinoma
nuclear grade 2
E-Cadherin (+)
Smooth muscle myosin heavy
chain/p63 (-)

BIRADS 6- Known biopsy-
proven malignancy

Right PALP 1:00 7CM FN Biopsy



Needle Localization

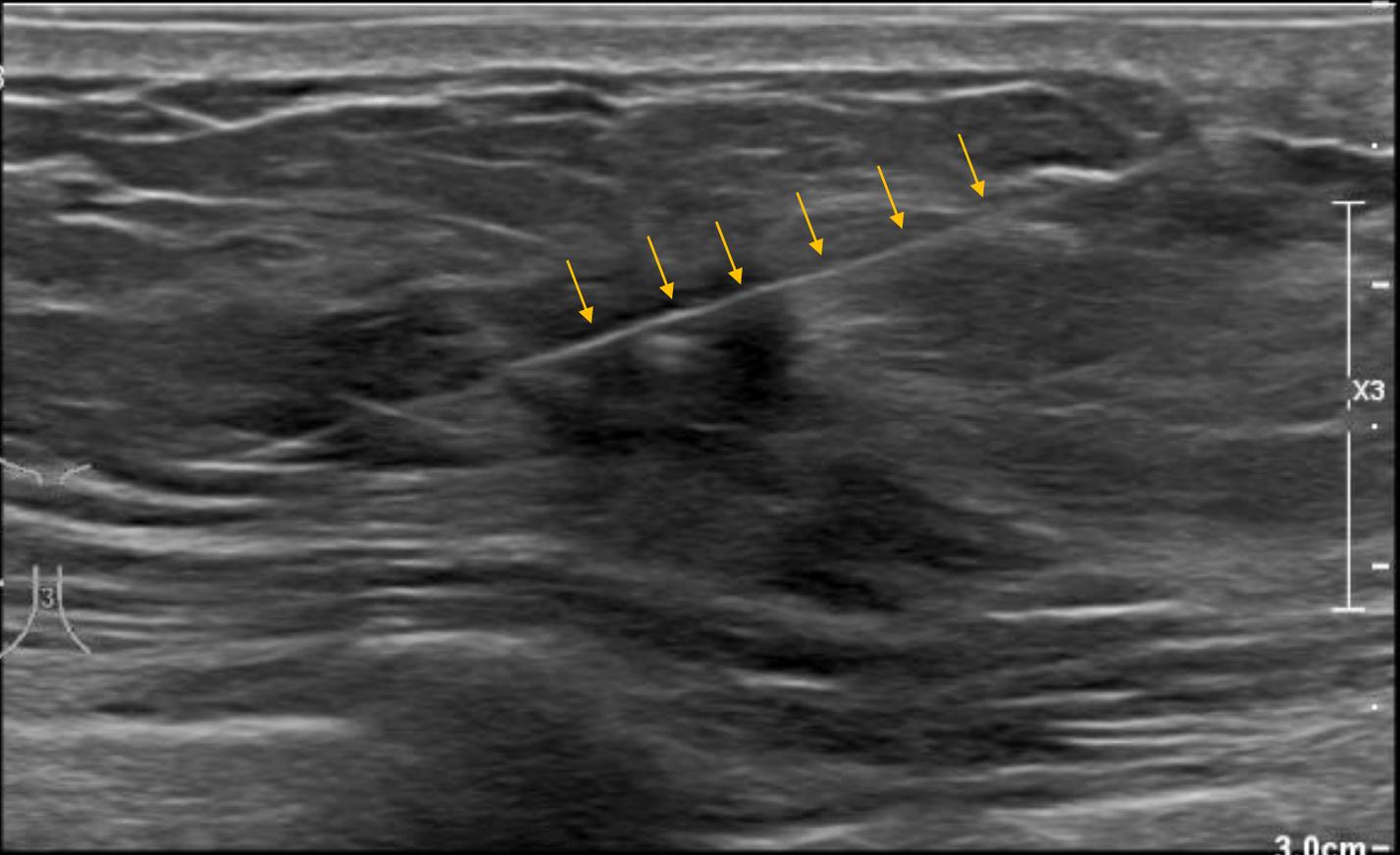
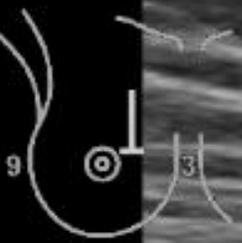
Adv Breast AHN
eL18-4
68Hz
RS

TIS0.1 MI 0.6

M5

Yellow arrows: needle advanced through mass

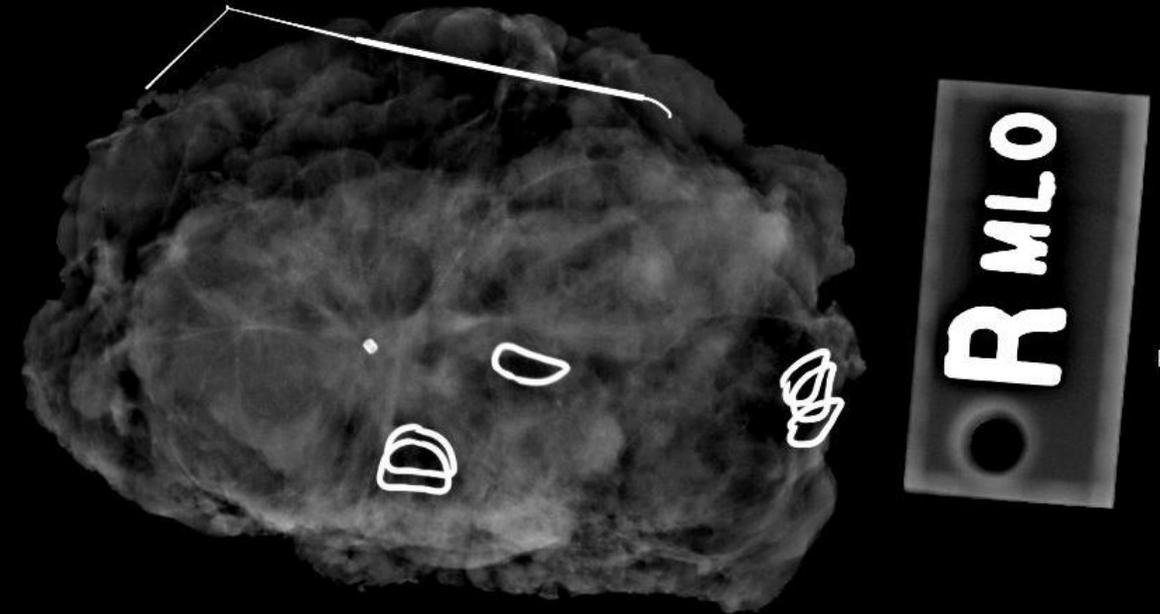
2D
44%
Dyn R 68
P Med
Gen
TAC1



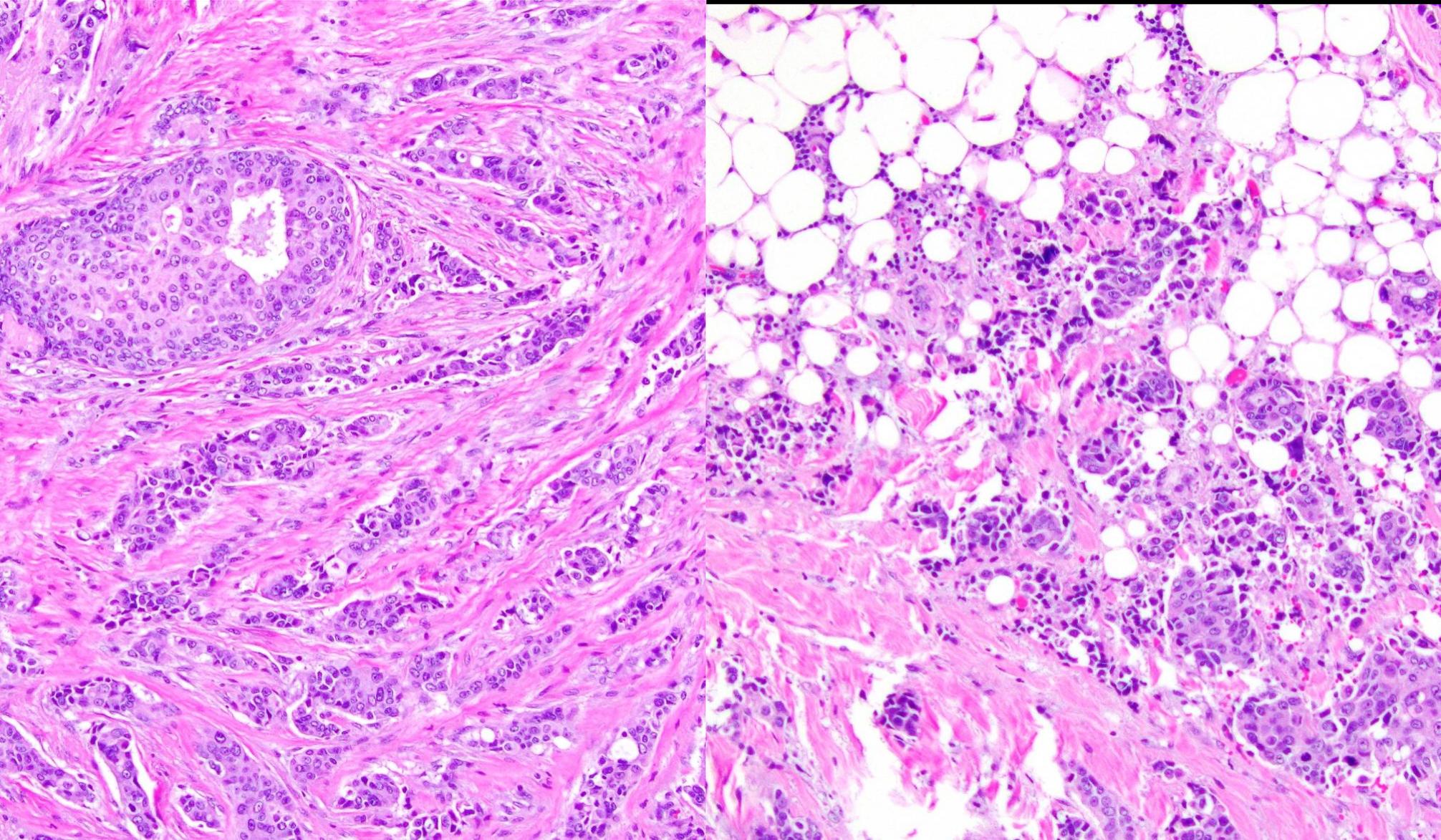
Right 1:00 7 CM FN NDLOC



Gross pathology from lumpectomy and confirmation

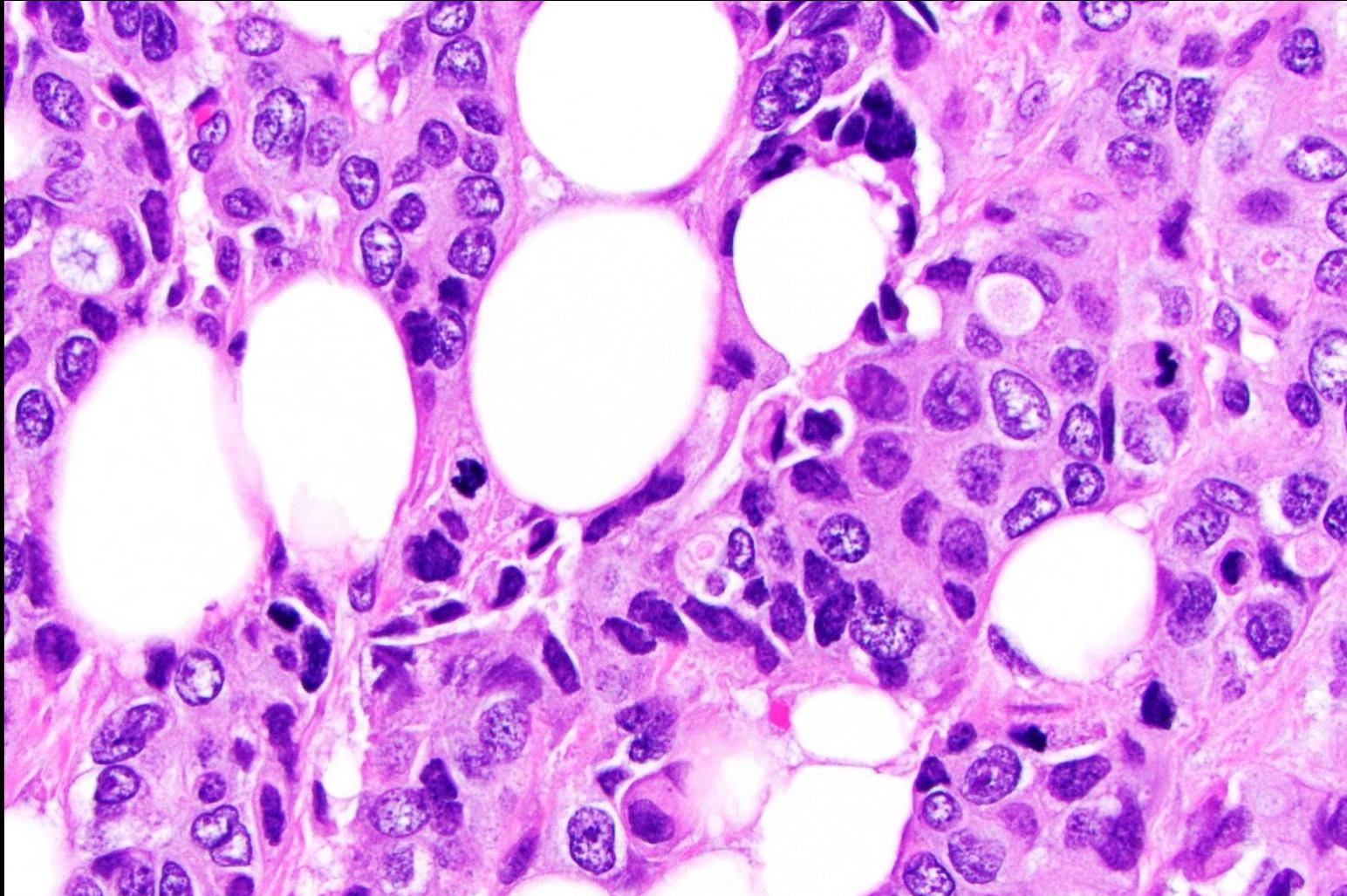


Pathology- H&E Low Mag



Malignant ductal cells invading surrounding stroma and invading into normal fatty tissue of the breast

Pathology- H&E High Mag



Cellular pleomorphism with large cells and large nucleoli. Mitotic figures present

Pathology

- Invasive ductal carcinoma, nuclear grade 3: Estrogen receptor (+), Progesterone receptor (+), HER2/Neu (-)
- Ductal carcinoma in situ, nuclear grade 2, solid, micropapillary and cribriform types, with comedonecrosis and calcifications
- Margins free of invasive and in situ carcinoma; lymphovascular invasion not identified
- Pathologic stage: pT2 N0(sn) MX

Final Dx:

Invasive Ductal Carcinoma with Ductal
Carcinoma in Situ

Invasive Ductal Carcinoma: Discussion

- Ductal carcinoma in situ accounts for almost 1/5th of all breast cancers detected by screening in North America
- Risk factors: older age, benign breast disease, family history of breast cancer, nulliparity, older age of first pregnancy
- Due to screening mammograms, almost 90% of ductal carcinomas in situ are diagnosed while clinically occult due to detection of microcalcifications, soft-tissue densities, or both, which trigger investigation via stereotactic core needle biopsy.

Invasive Ductal Carcinoma: Discussion

- Pathobiologic events associated with ductal carcinoma in situ and invasive ductal carcinoma
 - Abnormal response to growth factors- i.e. estrogen receptor, progesterone receptor
 - Loss of tumor-suppressor function- i.e. p53
 - Abnormal oncogene expression- i.e. HER2/neu
 - Genetic instability
 - Tissue invasion, stromal changes, clinical phenotype of tumor determined

Radiographic features of malignant breast lesions

- Mammogram:
 - Greater density, spiculated or irregular mass, asymmetry from other breast tissue, pointed irregular calcifications that are heterogeneous in size or fine and branching calcifications
- Ultrasound:
 - Hypoechoic lesions with irregular or ill-defined borders, can be “taller than broader”, posterior acoustic shadowing, and microcalcifications.

Pathologic features of ductal carcinoma

Pathologic classification of ductal carcinoma in situ and ductal carcinoma:

- Nuclear grade of tumor cells- low, intermediate, high
- Architectural pattern of tumor growth- solid, papillary, micropapillary, or cribriform
- Presence or absence of comedonecrosis

High grade lesions and lesions associated with comedonecrosis are associated with greatest risk of recurrence after breast conserving procedures.

Immunohistochemistry:

- Hormone status: Estrogen receptor, Progesterone receptor
 - Used to predict potential treatment response to tamoxifen
- Oncogenes: HER-2/Neu
 - Used as a marker for sensitivity for trastuzumab and resistance to tamoxifen

	Ductal Carcinoma/DCIS	Lobular Carcinoma	Benign lesion
Myoepithelial markers: smooth muscle actinin, calponin, p63, SMMHC	(-)	(-)	(+)
E-Cadherin	(+)	(-)	(+/-)
CK8	(-)	(+)	(+/-)

References:

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