Top 10: Best of Breast

Outline

1. Ten Common Breast Scenarios illustrated in the language of Breast Imaging, Breast Imaging Data and Reporting System BI-RADS®
2. Rate the module
**Breast Imaging Reporting and Data System**

- Developed in 1993 by ACR to improve the reporting of mammograms.
- Standardized reporting to reduce confusion in breast imaging interpretations and management recommendations.
- Late UNC Professor Emeritus Robert McLelland original BI-RADS® committee.

Now LI-RADS, Lung-RADS, TI-RADS, PI-RADS, HI-RADS.
BI-RADS® ATLAS

- Quality assurance tool
- Facilitates outcomes monitoring
- Standardized lexicon improves clarity of thought
- Standardized lexicon improves pt care by reducing ambiguity in reports
- Establishes framework for breast imaging reports
- BIRADS #0-6 with 1 2 3 4 5 and 6 as final category designations and 0 as an incomplete category
TOP TEN 1: BI-RADS® Category 1

BI-RADS® Category 1: Negative
TOP TEN 2: BI-RADS® Category 2

**FIBROADENOMA**
Most common breast mass in pts <35 yo
Contain stromal tissue and breast ductules
Sensitive to hormone changes - eg pregnancy
Oval mass and may contain calcifications
Not all FAs are definitely benign and biopsy is recommended for newly palpable or increasing in size or demonstrating suspicious features on exam
TOP TEN 3: BI-RADS® Category 3

BI-RADS® Category 3: Probably Benign

RT CC  LT CC

BIRADS 3 findings < 2% risk of malignancy, by definition
TOP TEN 3: BI-RADS® Category 3

BI-RADS® Category 3: Probably Benign

RT CC

LT CC

BIRADS 3 findings < 2% risk of malignancy, by definition
BI-RADS® Category 4: Suspicious

BIRADS 4 findings 2-95% risk of malignancy, by definition
Invasive Lobular Carcinoma
Accounts for 10% CA
Lobule rather than duct origin
Women in early 60s slightly older than IDC
Present as thickening
Multifocal, multicentric, bilateral
Asymmetry, architectural distortion or occult on mammogram
Indistinct mass on US
MRI has important role
Irregular mass amorphous calcs
LUOQ IHC: (ER, PR +) HER2 -
BI-RADS® Category 5: Highly Suggestive of Malignancy

BIRADS 5 findings >95% risk of malignancy, by definition
BI-RADS® Category 5: Highly Suggestive of Malignancy

**Invasive Ductal Carcinoma NST**
- Accounts for 50-75% invasive cancers
- Heterogeneous group of tumors without sufficient histologic features to be classified more specifically
- Ductal origin
- Present as mass, size varies
- Mammogram, US, and MR evident
- 2.1 cm spiculated mass LUOQ w/ fine pleomorphic calcifications

BIRADS 5 findings >95% risk of malignancy, by definition
TOP TEN 6: BI-RADS® Category 6

BI-RADS® Category 6: Known Biopsy-Proven Malignancy

RT MLO
RT MLO 3 mos later

BIRADS 6 findings 100% risk of malignancy, by definition
TOP TEN 7: BI-RADS® Category 0

- BI-RADS® Category 0: Incomplete - Need Additional Imaging Evaluation and/or Prior Mammograms for Comparison
TOP TEN 7: BI-RADS® Category 0

- BI-RADS® Category 0: Incomplete - Need Additional Imaging Evaluation and/or Prior Mammograms for Comparison

1. Recalled patient for bilateral axillary ultrasound -> confirmed unilateral left lymphadenopathy
2. US-guided CNB recommended -> adenocarcinoma of breast primary
BI-RADS® Assessment Categories

- BI-RADS® Category 0: INCOMPLETE - NEED ADDITIONAL IMAGING EVALUATION AND/OR PRIOR MAMMOGRAMS FOR COMPARISON
- BI-RADS® Category 1: NEGATIVE
- BI-RADS® Category 2: BENIGN
- BI-RADS® Category 3: PROBABLY BENIGN
- BI-RADS® Category 4: SUSPICIOUS
- BI-RADS® Category 5: HIGHLY SUGGESTIVE OF MALIGNANCY
- BI-RADS® Category 6: KNOWN BIOPSY-PROVEN MALIGNANCY
- Category 0: INCOMPLETE - NEED ADDITIONAL IMAGING EVALUATION AND/OR PRIOR MAMMOGRAMS FOR COMPARISON
Recall for additional imaging and/or comparison with prior examinations
- Category 1: NEGATIVE (0% risk)
Routine mammography screening
- Category 2: BENIGN (0% risk)
Routine mammography screening
- Category 3: PROBABLY BENIGN (<2% risk)
Short interval 6 month follow-up *OR continued surveillance*
- Category 4: SUSPICIOUS (2-95% risk)
Biopsy should be performed in the absence of clinical contraindications
- Category 5: HIGHLY SUGGESTIVE OF MALIGNANCY (>95% risk)
Biopsy should be performed in the absence of clinical contraindications
- Category 6: KNOWN BIOPSY-PROVEN MALIGNANCY (100% risk)
Surgical excision when clinically appropriate
TOP TEN 7: BI-RADS® Category 0

BENIGN AXILLARY LN (BI-RADS® 2)
Bilateral
Frequently reactive in inflammatory ds and HIV
Sarcoid, SLE, psoriasis, analogous ds
Known dx Lymphoma - add wording “known lymphoma”
When bilateral LN new or increasing - rethink BI-RADS® 4

SUSPICIOUS AXILLARY LN (BI-RADS® 4)
Unilateral
DDx breast carcinoma, metastatic melanoma, ovarian CA, other CA
Careful eval ipsilateral breast
Bilateral axillary US to determine if uni/bilateral
( Clinical eval for mastitis, breast abscess, skin infx, cat scratch fever ie convert to 2)
Proceed to FNA or CNB
1. Young female patient - why did she present for care?
2. Clinical history of key import?
3. Should we pursue more imaging?
1. Young female patient - why did she present for care?
2. Clinical history of key import?
3. Should we pursue more imaging?

**BREAST ABSCESS**

Progression of mastitis most common etiology

Delayed or inadequate antibiotic treatment

Staph aureus in puerperal nursing woman, also strep

Nonpuerperal abscesses typically contain mixed flora S aureus, streptococcal species and anaerobes

Pain, erythema, edema, mass

Round or irregular complex mass, fluid-debris levels or mobile debris

US study of choice for diagnosis and IR guidance

US surveillance
TOP TEN

1. Elderly male patient - why did he present for care?
2. Clinical history of key import?
3. Should we pursue more imaging?
1. Elderly male patient - why did he present for care?
2. Clinical history of key import?
3. Should we pursue more imaging?

3 times for gynecomastia: neonate, puberty, senescence
3 types gynecomastia: nodular, dendritic, diffuse
3+ etiologies gynecomastia: physiologic, drugs, hyperestrogen, systemic diseases cirrhosis, CRF
Gynecomastia: soft tender mass, mobile, bilateral, central to nipple, typical mammogram flame-shaped appearance with no secondary features, no axillary LN
TOP TEN 10: Breast Cysts

Breast Simple Cyst
Occur in 10% of all women
May be palpable, painful, grow/regress quickly
Anechoic mass, imperceptible wall, posterior enhancement
Painful cysts can be aspirated under ultrasound - benign type
fluid is yellow, green

Path slides courtesy of Dr Thomas Lawton
TOP TEN 10: Breast Cysts

Breast Simple Cyst
Occur in 10% of all women
May be palpable, painful, grow/regress quickly
Anechoic mass, imperceptible wall, posterior enhancement
Painful cysts can be aspirated under ultrasound - benign type
Fluid is yellow, green

Breast Complicated Cyst
Homogeneous low level internal echoes
May have a layered appearance
Fluid-debris levels may shift with pt position
May also contain brightly echogenic foci that scintillate as they shift

Path slides courtesy of Dr Thomas Lawton
We Made It: Diagnoses!

- Fibroadenoma
- Breast Cancers: Invasive Ductal, Invasive Lobular
- Lymphadenopathy
- Breast Abscess
- Gynecomastia
- Breast Cysts
We Made It!

- Any questions?
- http://guides.lib.unc.edu/Radclerks
- Video shorts:
  Views You Can Use Male Breast
  Emergency Breast Screening Mammography