

# Management of Common Breast Complaints

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# Why are we here?

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- ◉ 16% of women ages 40-69 sought advice from a physician related to a breast complaint.
- ◉ 23 visits per 1000 woman years.
- ◉ Wide range of physicians may encounter breast complaints, but few “experts.”

# Could this be breast cancer?

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- ◉ Most common malignancy
- ◉ 2<sup>nd</sup> leading cause of cancer death
- ◉ US: 1 in 8 lifetime risk (12.5%)

# Could this be breast cancer?

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- Breast cancer identified in 11% of patients with “lump”, and 4% of women with any complaint.
- Between 50-70% of breast cancers are detected based on symptoms—not by screening.
- Failure to diagnose breast cancer is the #1 malpractice claim in the U.S.

# Objectives

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- Review common clinical cases in breast disease.
  - Breast Pain
  - Breast Mass
  - Nipple Discharge
  - Abnormal Mammogram Result
- Discuss evidence-based evaluation and management strategies.

# Objectives

## COMMON BREAST CASES

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- Breast Pain
- Breast Mass
- Nipple Discharge
- Abnormal Screening Mammogram
- Breast Inflammation

## EVALUATION TOOLS

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- Risk Assessment
- Physical Exam
- Breast Imaging
- Diagnostic Procedures

# Case 1: Breast Pain

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- M.J. is a 35 y/o woman, G2P2, who presents with worsening bilateral breast pain.
- Pain becomes noticeable during the week prior to her menses and lasts for about 10 days.
- Has been present for several years, but worse over the past 6-9 months.

# Case 1: Breast Pain

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- ◉ Does this patient have breast cancer?
  - A. High likelihood
  - B. Intermediate
  - C. Low likelihood



# Tool 1: Risk Assessment

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- The goal of risk assessment is to characterize patient given clinical scenario as low, intermediate, or high risk for breast cancer.
- Alternatively:
  - Average age-based risk
  - High risk

# Tool 1: Risk Assessment

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## ◉ AGE

- 1 in 2000 women in their 20s.
- 1 in 25 women in their 70s.

# Tool 1: Risk Assessment

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## ○ Reproductive Factors

- Elevated risk associated with:
  - Menarche: age < 12
  - Menopause: age > 55
  - Age of first birth  $\geq 30$
  - Nulliparity
  - Breastfeeding < 2 months
  - Hormone therapy after menopause?

# Tool 1: Risk Assessment

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## ○ Family History

- 1<sup>st</sup>, 2<sup>nd</sup>, 3<sup>rd</sup> degree relatives with breast or ovarian cancer, others?
- Age at diagnosis of affected relatives

# Tool #1: Risk Assessment

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- FH that warrants genetics referral:
  - 2+ breast/ovarian/peritoneal CA in close relatives from the same side of the family (1<sup>st</sup>, 2<sup>nd</sup>, 3<sup>rd</sup> degree)
  - Early onset breast cancer (< 45 yrs)
  - 2+ cancers in the same individual
  - Known familial mutation
  - Male breast cancer
  - Epithelial ovarian cancer?

NCCN 2009

# Tool 1: Risk Assessment

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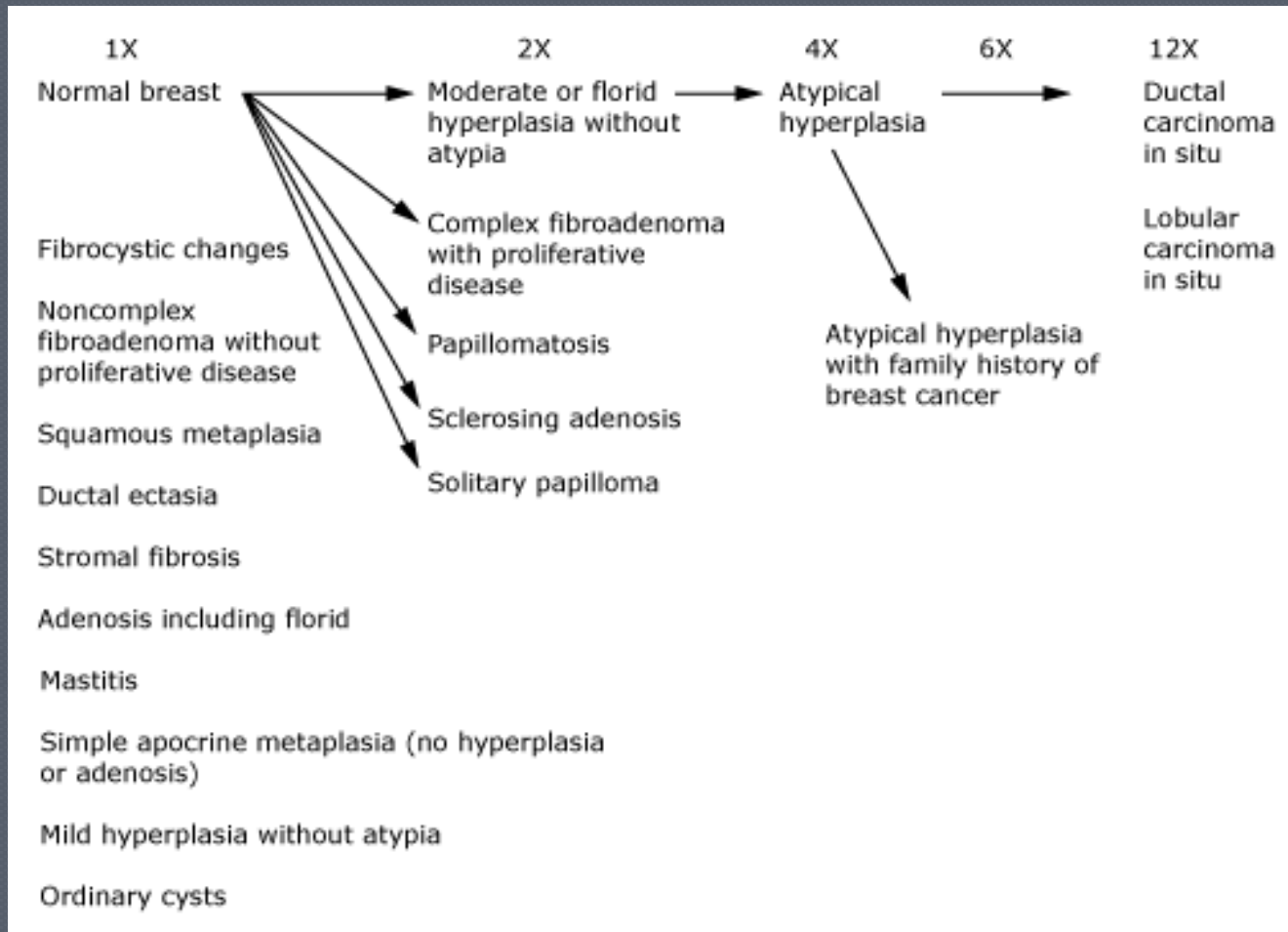
## ○ Prior breast biopsies

- Non-proliferative—no increased risk
- Proliferative—slight increased risk
- Proliferative with atypia--ADH, ALH
  - >20% lifetime risk
- Lobular carcinoma in situ
  - >20% lifetime risk

## ○ History of therapeutic thoracic radiation

# Histologic Risk Factors

## Relative Risk of Breast Cancer with Different Breast Lesions



Breast cancer will often occur many years later and in a different location than the original lesion.

# Tool 1: Risk Assessment

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- Gail Model

- <http://www.cancer.gov/bcrisktool>



# Case 1: Breast Pain

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## ○ Risk Assessment

- Age: 35
- Reproductive Factors
  - G2P2, first birth age 29
  - Breast fed x 2 children, 6 mo each
  - Menarche age 11
- Family History
  - Mom: breast CA age 44
- No prior breast biopsies
- No personal cancer history

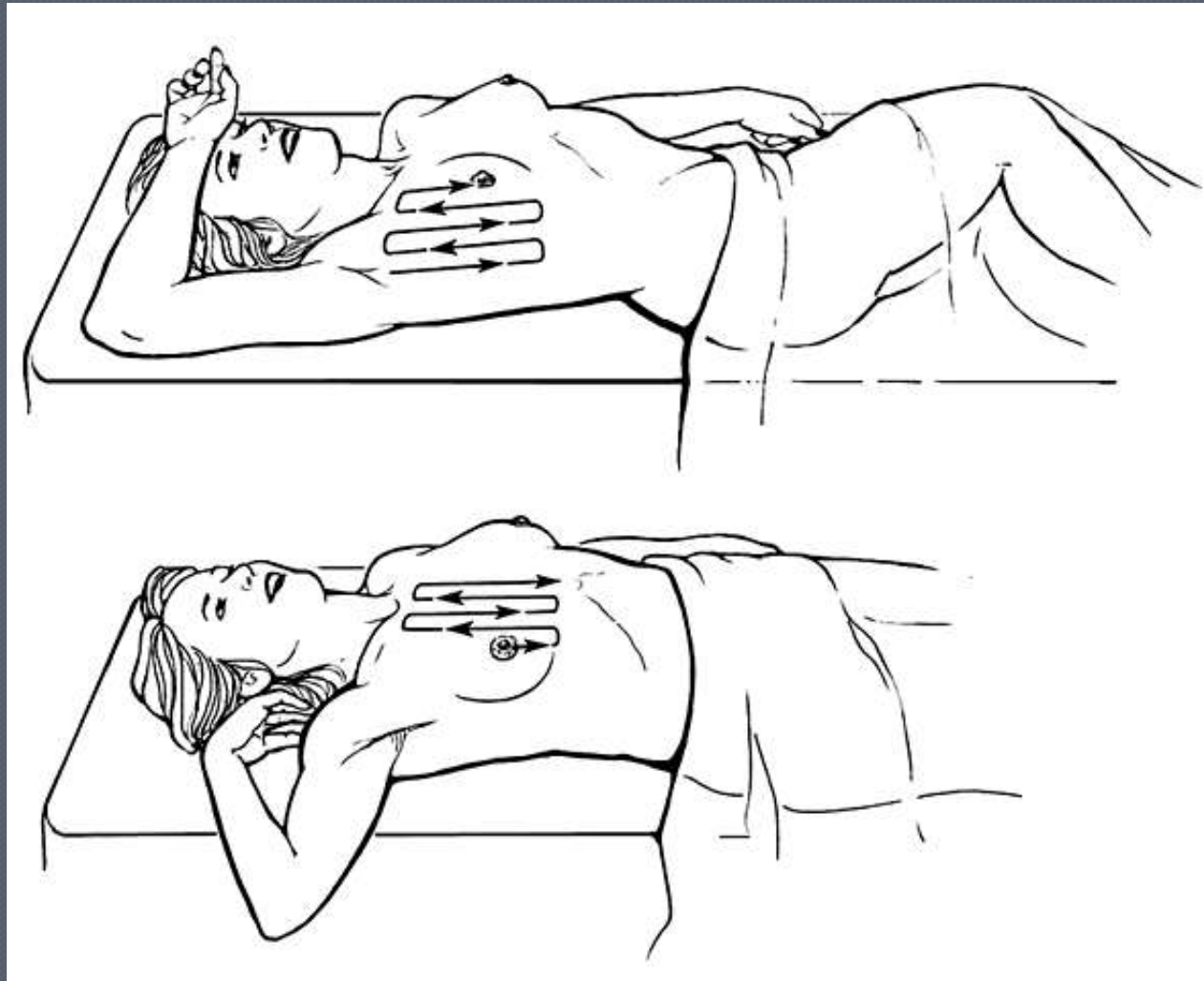
# Tool 2: Physical Exam

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## ◉ How to Examine the Breasts:

- Visualize breasts for skin changes, symmetry.
- Palpate chest wall, breasts, and axillae.
- Assess for nipple discharge.
- Seated and supine positions.
- Consistent pattern. (Radial spokes, concentric circles, vertical strips)
- Boundaries.
- Time, time, time.

## Position of Patient and Direction of Palpation for the Clinical Breast Examination



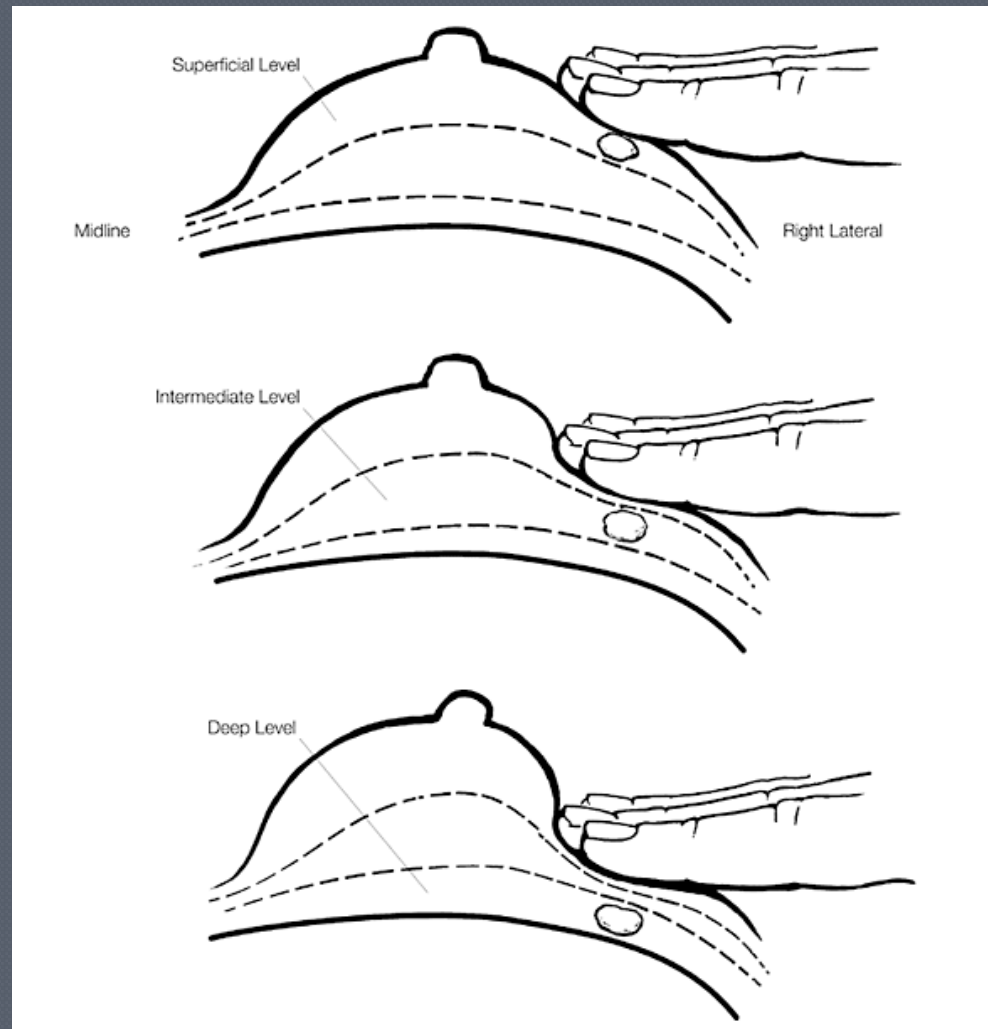
Barton, M. B. et al. JAMA 1999;282:1270-1280.

## Palpation Technique



Barton, M. B. et al. JAMA 1999;282:1270-1280.

# Levels of Pressure for Palpation of Breast Tissue Shown in a Cross-Sectional View of the Right Breast



Barton, M. B. et al. JAMA 1999;282:1270-1280.

# Case 1: Breast Pain

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## ○ Physical Exam

- Doughy irregular breasts bilaterally, without discrete masses.

## ○ Breast Imaging?

# Case 1: Breast Pain

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## ◉ Breast Imaging

- Not indicated if bilateral pain without abnormalities on physical exam.
- Screening imaging for appropriate women.
- Diagnostic imaging directed by physical exam findings.

# Case 1: Breast Pain

## 2/3 CYCLIC

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- Hormonally mediated breast changes
- Fibrocystic changes

## 1/3 NON-CYCLIC

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- Large pendulous breasts
- Breast cancer
  - Mastalgia was the only symptom in 8% of cases.
- Caffeine, tobacco?
- Hormone therapy
- Duct ectasia
- Inflammatory
  
- Extramammary
  - Chest wall pain
  - Spinal/paraspinal disorders



# Case 1: Assessment

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- Cyclic, bilateral breast pain
- Normal physical exam
  
- Is it interfering with her life?
- Does she desire treatment?

# Case 1: Breast Pain

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- No treatment required
- Therapeutic options:
  - Supportive garments
  - NSAIDs (oral or topical)
  - Low fat diet (<10%)
  - Evening primrose oil (500 mg tid)
  - Evaluate hormonal therapies
  - Tamoxifen, danazol, bromocriptine
- Consider referral to genetic counselor.

## Case 2: Breast Mass

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- K.M. is a 40 y/o G0 who presents due to finding a lump in her right breast while showering.
- Slight tenderness in the area.
- No history of breast masses.
- Was told she had “fibrocystic” breasts in the past.

# Case 2: Breast Mass

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## ○ Risk Assessment

- Age: 40
- Reproductive Factors
  - G0
  - Menarche age 11
  - Regular menses
- Family History
  - Aunt—breast cancer age 68
- No prior breast biopsies
- No personal cancer history

# Case 2: Breast Mass

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## ○ Physical Exam

- Right Breast:
  - Soft, smooth, mobile mass, ~3 cm in size, at the 10:00 position, 2 cm from areolar edge
  - No nipple discharge, adenopathy
  - No skin changes
- Left Breast:
  - No dominant or concerning masses, no discharge

# Case 2: Breast Mass

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- ◉ Does this patient have breast cancer?
  - A. High likelihood
  - B. Intermediate
  - C. Low likelihood
  
- ◉ Differential?

# Tool 3: Breast Imaging

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## ○ Mammography

- Only modality used for routine screening.
- Modality of choice in women  $\geq 30$  with breast complaints.
- Detects calcifications and differences in density.

# Tool 3: Breast Imaging

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## ○ Ultrasound:

- Used as an adjunct to mammography.
- Best 1<sup>st</sup> imaging study in women <30 with breast complaints.
- Differentiate between cystic and solid lesions.



# Tool 3: Breast Imaging

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## ○ MRI

- Used as a screening modality in high risk women (>20% lifetime risk).
- More false positives.
- Not generally appropriate for evaluation of routine complaints.

# Tool 3: Breast Imaging

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## ○ BI-RADS Classification:

- 0: Incomplete, needs more imaging
- 1: Negative
- 2: Benign findings
- 3: Probably benign ( $\leq 2\%$  likelihood)
  - Repeat imaging in 6 months x 1-2 yrs.
  - Clinical suspicion.
- 4: Suspicious abnormality (3-94% likelihood)
  - Consider biopsy
- 5: Highly suspicious ( $\geq 95\%$  likelihood)
  - Biopsy indicated
- 6: Biopsy proven malignancy

# Case 2: Breast Mass

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- Order diagnostic mammogram +/- U/S
- Requisition should include clinical findings.

# Case 2: Breast Mass

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## ○ Breast Imaging Results:

- Mammogram:
  - 3 cm mass in UOQ right breast
- Ultrasound:
  - Simple cyst, 3 cm, correlates with mammographic mass
- Result:
  - BI-RADS 2—benign finding

# Case 2: Breast Mass

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## ○ Diagnosis:

- Simple Breast Cyst
  - Imaging and exam consistent!
  - BI-RADS 2—cytology/histology not required

# Case 2: Breast Mass

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## ○ Management:

- Patient reassurance
- Cyst aspiration for patient comfort
  - Fluid may be discarded
- Alternatively, observation.
  - Will likely fluctuate over time.

## Case 3: Breast Mass

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- M.G. is a 30 y/o woman, G1P1, who felt a lump in her right breast about 3 months ago.
- Not tender or painful.
- She thought it might go away, but it has not—even seems a little bigger.
- No prior breast problems.

# Case 3: Breast Mass

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## ○ Risk Assessment

- Age: 30
- Reproductive Factors
  - G1P1, first birth at age 25
  - Menarche age 13
  - Regular menses on OCPs
- Family History
  - Maternal Aunt—breast cancer age 40
  - Maternal GM—breast cancer age 61
- No prior breast biopsies
- No personal cancer history



# Case 3: Breast Mass

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## ○ Physical Exam

- Right Breast:

- Firm, mobile mass, ~2-3 cm in size, at the 7:00 position, 1 cm from areolar edge
- No nipple discharge, adenopathy
- No skin changes

- Left Breast:

- No dominant or concerning masses, no discharge

# Case 3: Breast Mass

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- ◉ Does this patient have breast cancer?
  - A. High likelihood
  - B. Intermediate
  - C. Low likelihood
  
- ◉ Workup?

# Case 3: Breast Mass

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## ○ Breast Imaging Results:

- Ultrasound:
  - Solid, well circumscribed mass, 2.5 cm, in area of palpable finding, c/w probable fibroadenoma
- Mammogram
  - Well circumscribed mass
- Result:
  - BI-RADS 4-- Suspicious finding

# Case 3: Breast Mass

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- Is more evaluation required?
  - A. Yes
  - B. No
  - C. Not sure

# Tool 4: Diagnostic Procedures

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- Fine Needle Aspiration
- Core Needle Biopsy
- Excisional Biopsy
  - with or without wire localization

# Tool 4: Diagnostic Procedures

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## ○ Fine needle aspiration

- Performed with a 22-24 gauge needle.
- May aspirate with syringe.
- Suspend cells in cytologic fluid (like liquid-based pap).
- Cytopathologist with expertise in breast cytology needed!
- Preferred for young, low risk women.

# Tool 4: Diagnostic Procedures

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## ◉ Triple diagnosis

- Using exam, imaging, and FNA:
  - 0.7% with cancer if all three suggest benign disease
  - 99.4% with cancer if all three suggest malignancy.
- If there is discordance between the three steps, open biopsy or core needle biopsy should be done.

# Tool 4: Diagnostic Procedures

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## ○ Core needle biopsy

- Performed with a 14-18 gauge needle, generally using U/S or stereotactic mammography.
- May be performed with palpation.
- Histologic specimen obtained.
- Correlates with open biopsy 94% of the time, with less cost and better cosmetic result.
- Gold standard for histologic diagnosis.



# Tool 4: Diagnostic Procedures

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## ○ Excisional Biopsy

- When core biopsy is non-diagnostic.
- When image-guided core biopsy is not possible due to location of lesion, imaging characteristics, patient characteristics.
- When mass does not have an imaging correlate.
- When high risk lesion identified on core biopsy
  - ADH, ALH, LCIS, radial scar
- Wire localization allows for excision of non-palpable imaging abnormalities.

# Case 3: Breast Mass

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- ◉ Image-guided Core Needle Biopsy performed.
- ◉ Pathology:
  - Benign fibroadenoma, no atypia
- ◉ Treatment?

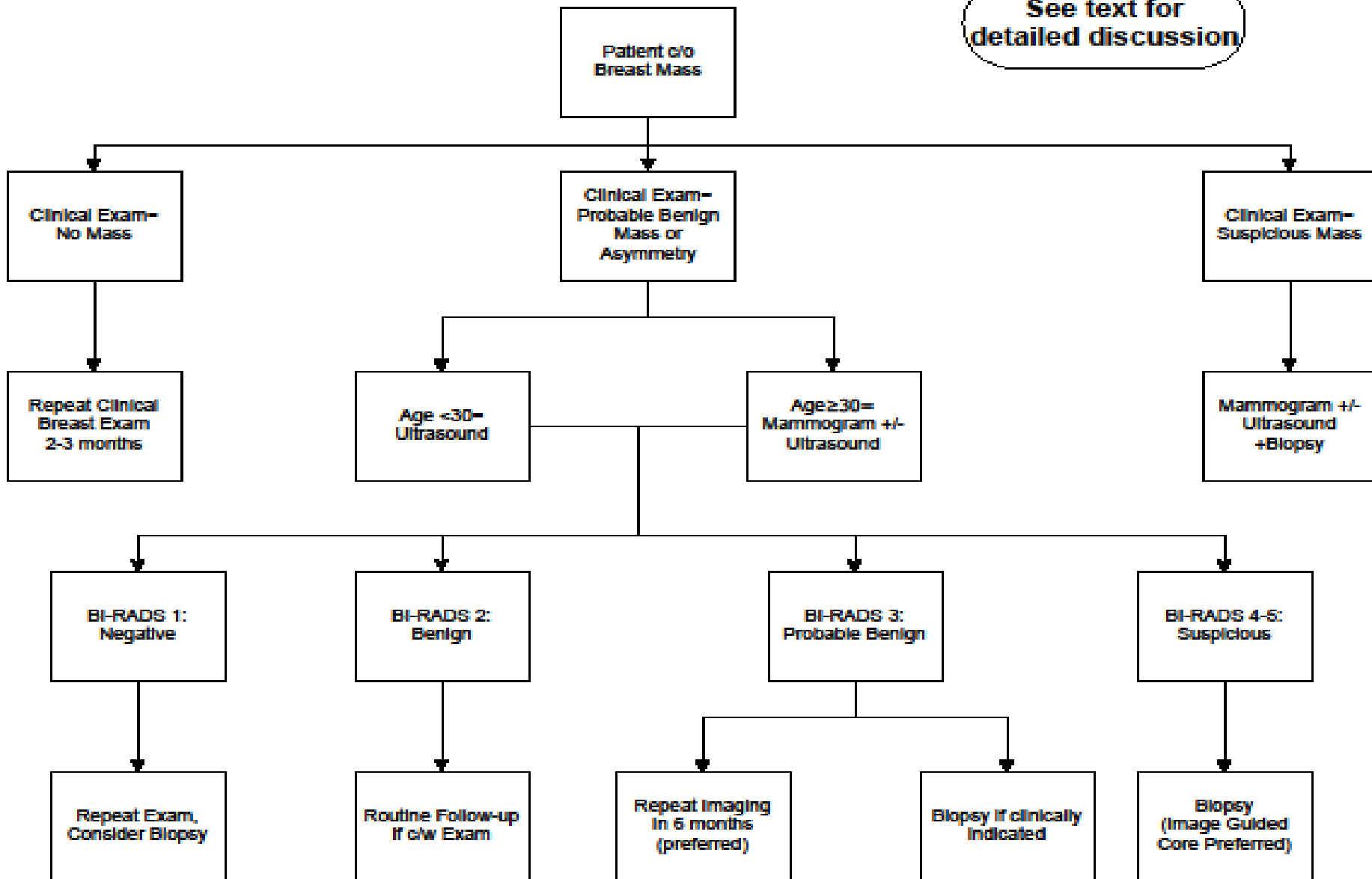
# Case 3: Breast Mass

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- Patient reassured by benign diagnosis.
- Options:
  - Follow conservatively with exam for changes.
  - Remove lesion  $>2$  cm or for patient desire.
- Fibroadenomas are the most common solid masses identified in young women.
  - Occur in 10-20% of women.
  - Multiple fibroadenomas in 15-20% of cases.

# Management of Breast Mass

See text for detailed discussion



# Case 4: Nipple Discharge

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- ◉ S. K. is a 50 y/o woman who noticed staining of her bra with bloody fluid.
- ◉ On her self-exam, she was able to express bloody fluid from her left nipple.
- ◉ No pain or tenderness.
- ◉ No masses or other findings.

# Case 4: Nipple Discharge

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## ○ Risk Assessment

- Age: 50
- Reproductive Factors
  - G3P2, first birth at age 32
  - Menarche age 11
- Family History
  - No family history of cancer
- Prior breast biopsies
  - Excisional bx age 30--fibroadenoma
- No personal cancer history

# Case 4: Nipple Discharge

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## ○ Physical Exam:

- Left Breast:
  - No dominant or concerning masses
  - No skin changes or adenopathy
  - Expressed serosanguineous discharge from left nipple, single duct
- Right Breast:
  - No dominant or concerning masses
  - No skin changes, adenopathy, or discharge.

# Causes of Nipple Discharge

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- Blood
  - malignancy vs papilloma
- Purulent
  - infection
- Milky
  - after childbearing up to one year+
  - hypothyroidism, prolactinomas
  - medications: OCPs, tricyclic antidepressants, dopamine antagonists
- Grey, brown, green, sticky
  - Duct ectasia. Common 5<sup>th</sup> decade, with nipple tenderness and pain.



# Nipple Discharge

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- Spontaneous, bloody, unilateral, from one duct = more likely cancer
- Non-spontaneous, non-bloody, bilateral = less likely cancer

# Case 4: Nipple Discharge

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- ◉ Does this patient have breast cancer?
  - A. High likelihood
  - B. Intermediate
  - C. Low likelihood

# Case 4: Nipple Discharge

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## ◉ Breast Imaging:

- Diagnostic mammogram + ultrasound
- Requisition to describe physical findings

# Case 4: Nipple Discharge

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## ◉ Breast Imaging Results:

- Mammography + U/S
  - No abnormalities identified
- Result:
  - BI-RADS 1—Negative

## ◉ Now what?

# Case 4: Nipple Discharge

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- Is more evaluation required?
  - A: Yes
  - B. No
  - C. Not sure

# Case 4: Nipple Discharge

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- Always pursue diagnostic test when clinical assessment does not correlate with imaging results.

# Case 4: Nipple Discharge

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## ○ Ductography

- Affected duct cannulated and injected with dye.
- Mammogram to identify, locate filling defect.

## ○ Subareolar duct excision

- Affected duct cannulated in the OR and removed to approximately 4-5 cm beneath nipple.
- This is a necessary diagnostic step with suspicious discharge.

# Case 4: Nipple Discharge

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- Pathology results:
  - Benign intraductal papilloma.
- Routine clinical follow up.
- Even women with single, benign papilloma may be at increased future risk of breast cancer.
  - Screening consideration.

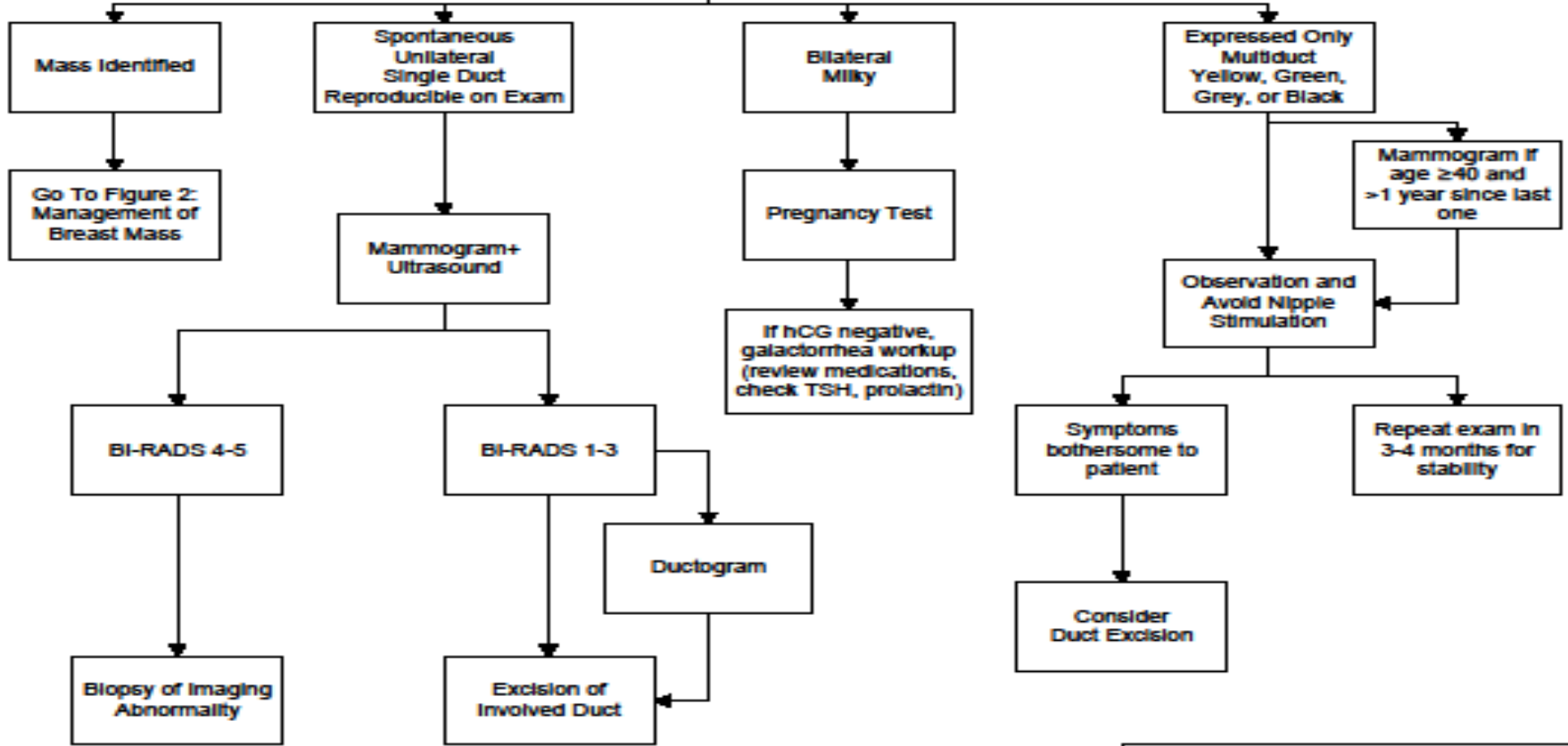


# Management of Nipple Discharge

Patient c/o Nipple Discharge

History and Clinical Breast Exam

See text for detailed discussion



- Medications associated with galactorrhea:
- Phenothiazines
  - Other antipsychotics
  - Metaclopramide
  - Domperidone
  - Methyldopa
  - Reserpine
  - Verapamil
  - Oral contraceptive pills

# Conclusion

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- Apply assessment tools to evaluation of breast complaints.
  - Risk Assessment
  - Physical Exam
  - Breast Imaging
  - Diagnostic Procedures
- Compare clinical assessment with imaging and diagnostic results.
- If above do not correlate, consider whether further workup is necessary.
- When in doubt, close follow up is appropriate.