Evaluation and Initial Management: Benign Breast Disease

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Patient’s Concern

Patients with breast complaints are concerned about cancer

- What findings can be reassuring?
- What findings require further evaluation?

What is the evidence based approach to the evaluation & treatment of breast complaints & clinical findings?
Initial Evaluation

HISTORY – 4 key questions to ask

1. How long have you had the problem?
   - Shorter duration is less likely cancer

2. If complaint is a lump has it changed in size?
   - No change in size less likely cancer
   - However, this is only the patient’s perception

3. Do you have any spontaneous symptoms?
   - Spontaneous symptoms less likely cancer

4. When was the first day of your last menstrual cycle?
   - If only since last menses less likely cancer
## History & Likelihood of Cancer

<table>
<thead>
<tr>
<th>Question</th>
<th>Less likely cancer</th>
<th>More likely cancer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Duration of problem</td>
<td>Shorter duration - &lt; 3 months</td>
<td>Longer duration - &gt; 3 months</td>
</tr>
<tr>
<td>Size of mass</td>
<td>No change or smaller in size</td>
<td>Increased in size</td>
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<tr>
<td>Spontaneous symptoms</td>
<td>Pain or discharge without touch</td>
<td>Pain or discharge only with touch</td>
</tr>
<tr>
<td>1st day of last menstrual cycle</td>
<td>If only started since last menses</td>
<td>If has been present for more than one menses</td>
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Initial Evaluation

Physical examination

- Evaluate all 4 quadrants lying and sitting
- Ideally do exam 7 - 9 days after onset of menstruation
  - Women on OCPs or postmenopausal – timing not important
  - Symptomatic patients should be examined regardless of phase of menstrual cycle
Initial Evaluation

Physical examination

Any of these physical findings requires further evaluation:

- Dimpling of skin
- Change in skin texture
- Axillary lymph nodes
- Nipple discharge
- Definite mass
Decision after Physical Exam

Physical examination

- In women < age 35 - if normal exam, imaging studies not indicated
  - Exam must be normal, not equivocal
- In women < age 35 - if palpable nodule, repeat exam in 1 month during follicular phase
  - If no decrease in size, evaluate further
- Women > 35 consider imaging regardless of the exam findings
Mammography

- Use when exam reveals a firm, irregular or fixed mass
- Characterizes palpable lesion & helps identify multifocal disease
- Used before fine needle aspiration (FNA) since hematoma can obscure mammogram findings
Mammography

If reported as:

- Probably benign – 1-2% risk malignancy
- Suspicious – 30-40% malignancy
- Highly suspicious – 75-80% risk of malignancy

All benign appearing masses should be followed-up at reasonably short interval to assure abnormal lesion is not present

Non-palpable lesions may require needle biopsy or excisional biopsy
Question
A 29 year old patient complains of a possible lump in her right breast for two months. LMP – 1 week ago. No medical problems. No pain or nipple discharge. On OCPs. You feel a small 1.2 cm mobile lump.
What would you recommend for this patient?

a) Mammogram
b) Ultrasound
c) Magnetic resonance imaging (MRI)
d) To return after her next menses for a repeat physical exam
Imaging in Patients < 30 years old

For a palpable breast mass the most “appropriate”* imaging according to American College of Radiology (ACR) is:

- Ultrasound
- If ultrasound is equivocal, suspicious or highly suspicious then order diagnostic mammogram*

Breast Cancer - Factors Associated with Increased Risk

More likely to be cancer if:
- Older patient
- Early menarche - < age 11
- Late menopause - > age 52
- Nulliparity
- Late first pregnancy - > age 35
- Family history of breast CA prior to menopause
- History atypical hyperplasia on biopsy
- Hormone replacement therapy
Breast Cancer – Other Risks?

- Spontaneous or induced abortion had no effect on risk in BRCA2+ patients
  - But BRAC1+ patients had reduced risk
- Breastfeeding had protective effect in BRCA2+ and no effect on BRCA1+ patients
Breast Symptoms - Mastalgia

- Rarely presenting symptom of malignancy (< 10%)
  - If due to malignancy, symptom of advanced disease
- No correlation between water retention & pain
Breast Symptoms - Mastalgia

Three types of pain

- Cyclic – related to menses
  - Usually bilateral, diffuse, upper quadrants
  - Frequently radiates to axilla & ipsilateral arm
- Non-cyclic – not related to menses
  - Often unilateral, lower portions
- Non-mammary pain
  - Chest wall etc.
  - Usually older women
Fibrocystic changes of breast (FCB)

- Most common reason for mastalgia
  - 85-90% of women with FCB have mastalgia
  - New term – ‘nodular sensitive breast’

- Highest prevalence of FCB
  - Age 20 - 50 years old
  - Increases in 3rd & 4th decade of life

- Risk factors
  - Nulliparous
  - Late menopause
  - High socioeconomic status
  - Caucasians
  - Jewish heritage
FCB Diagnosis

History
- Cyclic bilateral pain worse in midluteal phase

Physical
- Diffuse mobile nodularity of varying size

Does not increase risk of cancer
Mondor’s Disease

- Rare cause of breast pain
- Physical exam – cordlike structure palpable
  - Due to superficial thrombophlebitis of thoracoepigastric vein
  - Usually related to spontaneous or related to trauma/surgery
    - When spontaneous may be associated with malignancy
    - If > 35 y.o. order mammogram
Breast Pain Management

- Tell patient there is no cure
- Recommend use of good support bra
- Spontaneous remission (60-80%)
- Eliminate nicotine & reduce dietary fat
  - Low fat, high CHO diet reduced self-reported breast swelling & tenderness
    (Clinical Evidence BMJ – 1 small trial)
  - Caffeine restriction is not necessary
    [Muncie 2007]
Breast Pain Management

If this advice doesn’t help consider:

- Topical NSAID are effective & well tolerated (Beneficial – CE*)
- Oral contraceptives (continuously)
  - Lower dosage of estrogen if taking OCPs
- Luteal phase diuretics
  - Unknown effectiveness (CE)

Breast Pain Management

If nothing helped & still significant pain:
- Toremifene (Fareston®) 30 mg (1/2 pill) qd relieves moderate to severe pain (SOR – 1B)
- Danazol 200 mg/day PO day 14-28 cycle (SOR – 1B)
- Tamoxifen (Soltamox®) – 10 mg daily

Alternative medicine not effective
- Vitamin E no benefit
- Evening primrose oil (g-linolenic acid)
  - Likely to be ineffective or harmful (CE)

Mammography not required for evaluation of only breast pain (SOR-2B*)

*http://www.infopoems.com/irsearch/search_details.cfm?ID=952&ResultKey=E &title=Mammography%20unneeded%20for%20breast%20pain
Breast Infection

- Typically occurs in association with breast feeding
  - 20% breastfeeding women in first 6 months
- Pain, swelling, erythema & increased temperature of breast
- Abscess formation can occur (3%)
- Most common organism – *S. aureus*
- Ultrasound more helpful than mammogram
  - Although rarely needed if associated with breastfeeding
- Risk of breast cancer in pregnancy rare: 1-2%
Management Breast Infection

Antibiotics
- Cephalexin 500 mg QID
- Dicloxacillin 500 mg PO QID
- TMP/SMX bid

Avoid creams on the nipples
- Increases risk of mastitis
Management Breast Infection

Continue to breast feed
- Mother & baby already colonized
- Breast milk may have anti-inflammatory component which may be protective for the infant

If no improvement, consider abscess or occult malignancy
- If abscess forms – Incision & Drainage (I&D)
Nipple Discharge

- Prevalence 50-80% of women in reproductive age can express 1-2 drops
- 95% patients have benign etiology
- Presenting symptom in 3-11% of breast cancers
- Age is important risk factor
  - If patient > age 60
    - Risk of cancer - 32%
  - If patient < age 60
    - Risk of cancer - 7%
Nipple Discharge

Lactation inhibited by prolactin inhibiting factors
- Primary inhibiting factor is dopamine from hypothalamus

Drugs that inhibit dopamine or effect metabolism of other neurotransmitters & associated with nipple discharge
- Oral contraceptives
- Phenothiazines
- Tricyclic antidepressants
- Metoclopramide
Nipple discharge – other causes

- Post-thoracotomy syndrome
  - Healing chest wound simulates effect of suckling infant
- Chest wall injury
  - Burns
- Hypothyroidism
- Chronic renal failure
Question

36 year old c/o greenish & non-spontaneous discharge from the left breast for 2-3 mos. No pain. PE – no mass. What would you recommend to the patient?

a) Mammogram & follow-up in 2 weeks
b) Refer her to surgeon with experience treating breast disease
c) Reassure her the discharge is benign
d) Send the discharge for cytology & see her in 2 weeks
Nipple Discharge with Malignancy

Discharge characteristic associated with malignancy:
- Spontaneous
- Unilateral
- Uniductal
- Bloody
- Associated with mass
Physiologic Nipple Discharge

Physiologic discharge usually:

- Occurs only with compression
  - Be careful with women who check their breasts regularly – frequent manipulation can stimulate discharge
  - If you suspect that etiology - leaving the nipple alone will eliminate the discharge
- Bilateral
- Either clear, yellow, white or dark green
Nipple Discharge

- Physical exam
  - Bilateral discharge essentially always endocrine or physiologic
  - Note if one or more than one duct involved
    - Good light and magnifying lens
    - If > 1 duct involved – malignancy unlikely
  - Test discharge with guaiac for blood
    - If negative, discharge is normal regardless of color
## Nipple Discharge Summary

<table>
<thead>
<tr>
<th>Probably benign discharge</th>
<th>Possible malignancy</th>
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<tbody>
<tr>
<td>Occurs only with compression</td>
<td>Spontaneous</td>
</tr>
<tr>
<td>Bilateral</td>
<td>Unilateral</td>
</tr>
<tr>
<td>More than one duct involved</td>
<td>Uniductal</td>
</tr>
<tr>
<td>Negative test with guaiac for blood (any color)</td>
<td>Bloody</td>
</tr>
<tr>
<td>No palpable mass</td>
<td>Associated with mass</td>
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</table>
Nipple Discharge - Galactorrhea

Galactorrhea – is milk production either:
- > 1 year post weaning
- In a nulligravida
- In a menopausal patient
Galactorrhea - Management

Galactorrhea:
- Measure TSH, prolactin
- Review medication history
- Can confirm galactorrhea with microscopic exam of discharge showing fat globules
- Rare causes
  - Renal failure – increased prolactin
  - Neurogenic – over stimulation
- If only galactorrhea present, requires reassurance
Nipple Discharge - Management

- Spontaneous, unilateral or bloody discharge should be referred for surgical evaluation
- Mammogram for patients over age 35
- Spontaneously resolves in ¾ of patients
- Change medication if possible cause
- Treatment with dopamine agonist:
  - Bromocriptine (Parlodel®) 2.5 – 15 mg daily – most commonly used ($62/mo)
  - Cabergoline (Dostinex®) 0.25 – 1.0 mg 2x/wk – more expensive ($265/mo)
Paget’s Disease Breast

- Complaint of staining bra without nipple discharge
- Disorder of nipple that spares areola
  - Eczematoid appearance with crusting, scaling & erosion
  - Histologically – cancer cells within nipple epidermis
  - Virtually always associated with underlying breast cancer
Cystic mass

- Is well demarcated from surrounding tissue
- Is characteristically firm & mobile
- Fluctuates with menstrual cycle
- May be tender if it filled rapidly
- Is a common cause of mass in pre-menopausal women
- Is uncommon cause of mass in postmenopausal women not taking hormones
Cystic mass

- Physical exam often cannot distinguish cyst from solid mass
  - 1 study only 58% cysts correctly identified on exam
- Ultrasonography or aspiration to diagnose cyst
- Aspiration
  - Alcohol wiping sufficient without sterile drapes
  - Injecting equivalent volume of air into cyst after aspiration, reduces propensity for re-accumulation
  - If unsuccessful apply firm pressure to prevent hematoma which can interfere with mammography
Cystic mass

- Cytologic examination of cyst fluid not indicated if it is non-bloody
  - Low likelihood of malignant cells in absence of bloody fluid or residual mass
  - Bloody fluid should be sent for cytology
- Reexamine in 4-6 weeks to determine if recurred
- Nonpalpable cyst on mammography & confirmed as simple cyst by ultrasound requires no treatment
Cystic masses - Management

Surgical consult recommended if:

- Aspirate fluid bloody
- Palpable abnormality does not resolve completely after aspiration
- Cyst recurs a third time
Suspected Breast Mass - < 40 yo

- If physical exam (PE) reveals no mass – reassurance & follow-up in 2-3 months
- If PE is not definitive – ultrasound advised
  - If US negative – repeat PE in 2-3 months
- If between 35-40 yo, mammogram could be obtained
  - < 35 yo mammogram rarely used
Clinical Judgment

For ANY patient, if the physical exam is suspicious of malignancy or worrisome:

- Regardless of any reassuring results from imaging studies
- Proceed with biopsy, excision or surgical consult
Definite Breast Mass - < 40 yo

- Patient could opt for conservative follow-up if “triple test” consistent with benign probability – triple test is:
  - Clinical examination
  - Ultrasound or mammography
  - Fine needle aspiration (FNA)
  - Triple Test Score (TTS)
    - 1=benign; 2=suspicious; 3=malignant
    - TTS ≤ 4 probably benign
    - TTS > 4 recommend excisional biopsy
  - If all three evaluable & negative – risk of cancer < 1%
  - Plan follow-up PE & measurement of lesion in 3-6 months
Solid Breast Mass

- Noncystic mass in premenopausal women distinct from surrounding breast tissue
  - Consider surgical consult
  - Short-term follow-up ($\leq 12$ months) found to be safe – very rare cancer [Harvey 2009]
    - Lesion must be either round, oval or lobular with circumscribed margins
    - And clinical exam was not suspicious
  - For vague asymmetry or nodularity observing 1-2 menstrual cycles is acceptable
Fine Needle Aspiration (FNA)

- Less invasive than excisional biopsy
  - 10 mL syringe & 22 g needle
  - Local anesthetic optional
- If fluid clear and non bloody = benign, no further treatment
- If solid (no fluid) or bloody – expel contents in ThinPrep® for cytologic evaluation
  - Sensitivity 98%; specificity up to 100%
- Up to 36% insufficient for diagnosis
  - Directed core needle biopsy will provide highly discriminative information
Excisional biopsy

Used if diagnosis remains in question after FNA

Mainstay for evaluation of breast masses

Risks

- Scarring
- Seromas
- Hematoma
- Abscess
- Cellulitis
- Anesthetic/sedation
Fibroadenoma

- Essentially always benign
  - Risk of cancer slightly elevated if there is adjacent proliferative disease or family history breast cancer
- 10% of women will have one
- Most common age is 20-30 yo
- Clinically smooth round & mobile
- Usually painless
- Ultrasound or FNA can rule out cyst
Fibroadenoma - Management

- Can be left in place if diagnosis assured
- If FNA is inconclusive, excisional biopsy is recommended
- Most regress
- 20% recurrence
Question

46 yo G3P3003 complains of lump left breast. LMP – 3 weeks earlier. No medical problems. PE – BMI 22 kg/cm². Right breast – nl. Left breast – 1.5 cm nodule lateral lower quadrant. Skin – nl. Mammogram negative for any findings suggestive of malignancy. What would you recommend to the patient?

a) Repeat mammogram in 6 months
b) Repeat physical exam in 3 months
c) Obtain surgical consult
d) Order MRI of left breast
Definite Breast Mass > 40 yo

- Diagnostic mammogram most “appropriate”* – not screening mammogram
- Surgical consult
  - Either before or after the mammogram
  - Which ever can be done first

Miscellaneous Benign Lesions

- Lipoma
  - Soft non-tender well circumscribed
  - Difficult to distinguish from other conditions
  - Should be excised if causes diagnostic confusion

- Fat necrosis
  - Result of trauma or surgery
  - May mimic malignancy on mammography
Miscellaneous Benign Lesions

Diabetic mastopathy
- Most common in premenopausal women with type 1 diabetes
- Typical suspicious lump with dense pattern on mammogram
- Core biopsy recommended
- Excision is not required

Galactocele
- Mild retention cyst
- Diagnosed by history and aspiration milky substance
Miscellaneous Benign Lesions

Hamartoma
- Benign – also called fibroadenolipoma
- Discrete, encapsulated, painless mass on mammogram

Idiopathic granulomatous mastitis (IGM)
- Inflammatory process
- Often inflammation of overlying skin, nipple discharge, peau d’orange & axillary nodes
- Biopsy necessary for diagnosis
  - Excision is reasonable treatment
  - No increased risk of breast cancer
Controversies

Breast self examination (BSE) does not reduce cancer specific mortality
  But is associated with an increase in negative biopsies*

ACS and NCI no longer recommend breast self-exam for the general population

Screening breast exam by health care provider does not reduce cancer specific mortality

Benign Breast Disease
Key Points

- Diagnosis of benign breast disease reserved for cases that are thoroughly evaluated
- Diagnostic evaluation triad
  - Physical examination
  - Mammography/ultrasound
  - FNA
- When findings are equivocal or suspicious obtain surgical consult
What Questions do you have?