Evaluation and Management of the Breast Mass

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Common Presentations of Breast Disease

- Breast Mass
- Abnormal Mammogram
- Nipple Discharge
- Breast Pain
Right now, 1 million women are battling breast cancer.

They just don’t know it yet.
Evaluation and Management of the Breast Mass

Objectives

• The patient’s role: Should patients still be advised to perform breast self exam?
• Prevention and screening: What is recommended for the patient at high risk for developing breast cancer?
• How should you work up the patient presenting with a “breast mass”?
Evaluation and Management of the Breast Mass

Objectives

• What is the role of MRI in breast evaluation?
• What is the best option for tissue diagnosis of the breast mass?
• The differential diagnosis of the breast mass
History of Breast Self Exam

- First advocated by Adair in 1933
- Expounded by Haagensen in 1952
- Late 70s-present: Numerous descriptive, cohort, case-control, and nonrandomized studies with conflicting results
- NCCN Consensus Panel 1998: Insufficient evidence to recommend for or against BSE for screening
The Risks of BSE

- Added anxiety in some women
- Inconvenience, potential morbidity and mortality of unnecessary investigations of false positive results (PPV 12%, Gastrin)
- False assurance
Efficacy of Breast Self Exam

PRCT of 266,064 women in 519 factories in Shanghai with 10-11 year followup

- BSE taught initially, 1 and 3 years later and with supervision q 6 mos for 5 yrs
- Death from BC 0.1% in both groups
- More benign disease diagnosed in the BSE group (1457 vs 623 at 5 years)
- Problem: 40% 30-39yrs, 15% 40-44 yrs

Thomas, J Natl Cancer Inst, 2002
BREAST CANCER PREVENTION

Exercise

Relative Risk

Sedentary 1.00
Moderate 0.93
Regular Exercise 0.63

Thune, NEJM, 1997
STAR
Study of Tamoxifen and Raloxifene
## Prophylactic Mastectomy in the High Risk Patient

<table>
<thead>
<tr>
<th></th>
<th>Control (Sisters)</th>
<th>Bil. Mast.</th>
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<tbody>
<tr>
<td>Patients</td>
<td>403</td>
<td>214</td>
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<tr>
<td># Cancers</td>
<td>156</td>
<td>3</td>
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<tr>
<td>% Risk Reduction</td>
<td>____</td>
<td>90%</td>
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Hartmann, NEJM, 1999
Gail Model Risk Assessment Tool

1. Race: A: White, B: Black, C: Asian
2. Age
3. Age first menses
4. Age first live birth (0 = None)
5. Number of mother/sister(s)/daughter(s) with breast cancer
6. Number previous breast biopsies
   If 6 is positive
7. Biopsy with atypical hyperplasia
   Y = yes, N = no, ? = unknown

* Press “on”
* Answer all questions
* Press “Enter” after questions 2 to 6

Press “Result” for risk in %
The Gail model in Breast Cancer Risk Assessment

- Uses age, menarche, # biopsies, atypical hyperplasia, age at first live birth and FH in 1st degree relatives
- Slightly overpredicts risk in women < 50
- Underpredicts in women with strong family histories of breast and ovarian cancer
- May be very helpful in women with risk factors who typically overestimate their risk
Mammary Ductal Lavage
Ductal Lavage in High Risk Patients

• Prevalence of abnormal cells is 24% (Dooley)
• Tamoxifen reduces risk of BC for atypical hyperplasia by 86%! (NSABP-P1)
• Abnormal findings may lead to ductography, ductoscopy, MRI or repeat DL in 3-6 mos
• Ductal lavage allows cellular rather than historical risk groupings
Potential Benefit of Ductal Lavage

- 50 yo woman with sister who developed BC at 40
- Gail model: 10% chance of BC over 20 yrs
- Tamoxifen of questionable benefit

- Same patient with atypia on ductal lavage
- Gail model: 20% risk over 20 yrs
- Tamoxifen would reduce risk to 3%
A 40 yo women presents with a “breast mass” in the UOQ of the left breast. She has no significant risk factors. On exam, there is an area of increased density in the area of concern but no discreet mass. A mammogram is normal.

What should you do next?
"Breast Masses" in Young Women

605 women <40 years presented to a comprehensive breast center with a “breast mass”

• 29% of provider detected and 36% of self detected “masses” were determined to be masses on exam
• 65% of “masses” on expert exam yielded masses with aspiration or biopsy
• Cancer diagnosed in only 4.6%
• US the most useful study for the equivocal exam
• With a normal expert exam, imaging studies and FNA were not of value

Morrow, Surgery, October 1998
Distinguishing the Breast Mass from Areas of Increased Density (Fibrocystic Changes)

- History of “oblong” lump, “ridge”, increase and decrease in size, tenderness
- Exam shows thickening, ridge of tissue, rather than a discrete mass
Evaluation of the “Breast Mass”

- **Thickening only, no discrete mass:** continue routine screening
- **Equivocal findings, *may be a mass***: US or magnification/compression views or referral to Breast Center
- **Breast mass:** Consider US for cyst vs solid; if solid, refer to Breast Center for biopsy
Magnetic Resonance in Breast Evaluation

- Although still in development, estimated sensitivity 2X, specificity 3X that of mammography.
- Cost remains at $1800 - $2200.
- Not all MR images are created equal.
- Recent technology allows MRI directed breast biopsy.
Palpable mass

USGB: Neg

Exc. BX: LCIS

6 mos later this MRI

Rebiopsy: DCIS
R IDC on screening exam

Patient concern, L UOQ

Left MRI obtained
L MRI: New lesion, posterior, inferior, near chest wall
USGB: IDC
RMLO: vague density (no calcifications)

USGB: DCIS

Since <5% DCIS is without calcifications, MRI
Extensive enhancement from nipple to posterior breast

At mastectomy: extensive DCIS
Current Indications for Breast MR

- Evaluation for implant rupture
- Lesion characterization
- Local disease staging (DCIS, lobular cancer)
- High risk screening
- Management of locally advanced BC
Value of Breast MR

- Among 179 pts with hereditary BC risk, MR 13/13 cancers, mammography 6/13 (Stoutjesdijk, 2002)
- In 16/32 pts with lobular ca, MR showed more extensive tumors than conventional imaging (Weinstein, 2001)
- In 51 pts with DCIS, MR accuracy 88% for residual disease, 82% for invasion, 90% for multicentricity (Hwang, 2003)
Announcing a tiny breakthrough in biopsy procedures.

Introducing Mammotome®. The breast biopsy that doesn’t involve major surgery. It only requires local anesthesia. There are no stitches and virtually no scarring, yet it helps doctors to accurately diagnose early stage breast cancer. Ask your doctor more about it. For a free kit with special information every woman should know about breast care, including more about the Mammotome procedure, call 1-888-773-1551 today.

Indications for Excisional Biopsy
2003

- Negative FNA/core in clinically suspicious mass
- Lesion not amenable to stereo guided bx (poorly seen or close to chest wall)
- Atypical ductal hyperplasia on core bx (?atypical lobular hyperplasia)
- Radial scar on core bx
Differential Diagnosis of the Breast Mass

- Fibrocytic Changes
- Fibroadenoma
- Breast Cyst
- Breast Abscess
- Breast Cancer
Fibrocytic Condition

- Affects 30-40% of premenopausal women
- Severe symptoms in 8% of affected women
- Fibrocytic changes occur in response to estrogen and progesterone
Natural History of Fibroadenomas

- Stable
- Increasing size (estrogen, pregnancy)
- Decreasing size (50% resolution over 5 yrs in young women)
- Infarction, calcification (popcorn)
Management of Fibroadenomas

For Patient Accepting Observation

Palpable
  ↓
  FNA
  ↓
  Negative or other
    ↓
    Excision
  ↓
  Fibroadenoma
    ↓
    Follow-up
      ↓
      Size, Contour Change
        ↓
        Excision

Nonpalpable
  ↓
  USG or SG Biopsy (FNA or Core)
  ↓
  Negative or other

* if multiple, sample representative lesion
Indications for Excision of Probable Fibroadenomas

- Patient desire
- Presence of any indeterminate or suspicious ultrasound criteria
- Failure to confirm diagnosis with cytology or histology (FNA or Core biopsy)
- Rapid growth during follow-up
- Size greater than 2.5 cm
Indications for Cyst Aspiration

- Presence of symptoms (pain, tenderness)
- Large size (greater than 2-3 cm) comprising mammographic evaluation
- Presence of internal debris on ultrasound
Indications for Cyst Excision

- Internal projections on ultrasound
- Persistent mass after aspiration
- Aspiration of bloody cyst fluid
- Repeated recurrence of symptomatic cysts
Management of Breast Abscess

- Aspiration (repeat as clinically indicated)
- Antibiotics (staph coverage)
- Use US to assess for loculation, extent of disease, and resolution
- Mammography or US after resolution to rule out malignancy
Current Treatment Options for Early Breast Cancer

• Lumpectomy, axillary management and radiation therapy
• Total mastectomy, axillary management with or without immediate or delayed reconstruction
Final Exam Case One

- You examine a 44 year old patient during a routine health maintenance exam and find a “possible breast mass” measuring 2-2.5 cm in the R upper outer quadrant? She has no significant breast cancer risk factors.

- What is the next step?
Final Exam Case Two

- A 36 year old female has a 1.7 cm breast mass in the L upper inner quadrant. US reveals a 1.7 cm simple cyst. The patient is asymptomatic.

- What is your plan for management?
Final Exam Case Three

- A 30 year old female has a palpable mass in the L lower outer quadrant that is 1.5 cm, mobile, and slightly tender.

- What do you recommend?
Evaluation and Management of the Breast Mass

Summary

• Prevention options for high risk patients include diet and exercise, chemoprophylaxis and prophylactic mastectomy

• Categorize “breast masses” into areas of increased density, questionable masses and breast masses

• Use US in young women for evaluation of palpable masses

• Observe asymptomatic cysts and biopsy proven, small fibroadenomas