Breast Disease: Diagnosis and Management

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Goal of Breast Evaluation

The goal of breast evaluation is to classify findings as:

- normal physiologic variations
- clearly benign or
- possibly malignant
Incidence of Breast Cancer by Age

<table>
<thead>
<tr>
<th>Age</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>20-34</td>
<td>1.9</td>
</tr>
<tr>
<td>35-44</td>
<td>10.2</td>
</tr>
<tr>
<td>45-54</td>
<td>22.6</td>
</tr>
<tr>
<td>55-64</td>
<td>24.4</td>
</tr>
<tr>
<td>65-74</td>
<td>19.7</td>
</tr>
<tr>
<td>75-84</td>
<td>15.5</td>
</tr>
<tr>
<td>&gt;85</td>
<td>5.6</td>
</tr>
</tbody>
</table>

SEER database 2004-2008
Risk Factors with clinical relevance

- Gail Model guidelines 1989
  - Current age >50
  - Early menarche
  - Delayed child bearing >30-35 yo
  - Family history (1st degree relatives)
  - Previous biopsy
    - Atypical hyperplasia
    - LCIS
- BRCA1/BRCA2
- Radiation to chest wall
- ↑BMI
- Postmenopausal use of estrogen/progestin hormone therapy

Chlebowski et al JAMA 2010 Oct 20
Most women who develop breast cancer have no identifiable increased risk factors
Preventing Death from Breast Cancer – Early Detection

- Breast self examination
  - Monthly except in the highly anxious woman
- Clinician examination
  - Always important in early detection
Screening Mammography

- Should be performed annually beginning at age 40 years
- Should begin earlier in women with a first degree relative with breast cancer or who had chest radiation as young woman
- Decreases the chance of dying of breast cancer by at least 30%

Nystrom et al. Lancet 2002;359
Screening mammography

DCIS with microcalcifications
# Screening mammography

(BI-RADS™)

<table>
<thead>
<tr>
<th>Category</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Normal</td>
</tr>
<tr>
<td>2</td>
<td>Benign</td>
</tr>
<tr>
<td>3</td>
<td>Probably benign → need close f/u</td>
</tr>
<tr>
<td>4</td>
<td>Suspicious → need tissue bx</td>
</tr>
<tr>
<td>5</td>
<td>Cancer</td>
</tr>
</tbody>
</table>
Breast Self Examination (BSE)

- Performed every 1-2 months
- Begin at age 20 years
- Instruction on technique needs to be repeated
- Tumors detected on BSE tend to be smaller and with fewer lymph node metastases
Breast Self Examination (BSE)

What to look for:

- New lump or thickening
- New skin retraction or dimpling
- New skin changes on nipple or breast
Inflammatory Breast Cancer
Clinical Breast Exam (CBE)

- Should be performed at least annually
- Requires a thorough, systematic evaluation of the breast and the draining lymph nodes
- 14-20% of breast cancers found on CBE
- 20-40% false negative rate
Clinical Breast Exam (CBE)

Management of a new breast mass

- Observation
- Breast imaging
- Biopsy
Clinical Breast Exam (CBE)

Observation

A non-suspicious mass in a young woman can be observed over one menstrual cycle to see if it disappears, indicating fibroglanular change.

Any persistent breast mass requires a diagnosis.
Clinical Breast Exam (CBE)
Breast imaging

Ultrasound – can differentiate cystic vs. solid
Mammography – evaluates the entire breast as well as characteristics of the mass
MRI – very sensitive, not very specific. Can not be used to rule out cancer.
Clinical Breast Exam (CBE)

Biopsy

Fine Needle Aspiration (FNA) – recovers single cells

Core needle biopsy – small pieces of tissue

Excisional biopsy – removes the lesion
Fine Needle Aspiration

- Simple, accurate, low morbidity
- Requires skilled cytopathologic interpretation
- False negative results due to sampling error
- Sensitivity varies (65 to 98%) 
- False positives are rare (about 0.2%)
- Insufficient or nondiagnostic FNA material:
  - repeat FNA
  - evaluate with alternative biopsy techniques
Triple Test

- Clinical exam
- Breast imaging (mammogram and/or US)
- FNA cytology

If all three components are clearly benign and concordant, excisional biopsy is not required (accuracy = 100%)
Clinical Breast Exam (CBE)
Core Biopsy
Excisional Biopsy

- The highest accuracy for diagnosis in palpable lesions, although more invasive than fine needle or core techniques
- Simple with low morbidity
Specific Benign Entities
Definition of Fibrocystic Condition

The clinical manifestations of breast tissue response to cyclical hormonal changes.
Pathology of Benign Breast Disease

- Non-proliferative lesions (RR = 1.0)
  - cysts, mild hyperplasia of the usual type
- Proliferative lesions without atypia (RR = 1.5 - 2.0)
  - moderate or florid hyperplasia, intraductal papilloma, sclerosing adenosis, fibroadenoma
- Atypical hyperplasia (RR = 4.0 - 5.0)
  - atypical ductal hyperplasia (ADH), atypical lobular hyperplasia (ALH)
Fibroadenoma

- Common, especially in younger women
- Epithelial and stromal component
- Diagnosis by FNA or core biopsy
- Pathognomonic mammographic appearance: clinical follow-up is appropriate
- Equivocal diagnosis or growth should lead to excisional biopsy
**Simple Cysts**

- Common, often fluctuate with menstrual cycle
- Less common in post-menopausal women
- Diagnosis by FNA or US
- Simple cysts confirmed by US may be observed
- Aspiration for diagnosis or symptoms
Ultrasound of Simple Cyst
Complex Cysts

✦ Evaluation required
✦ Core biopsy may not sample solid component and cyst may collapse
✦ Excisional biopsy often required for diagnosis
# Nipple discharge

<table>
<thead>
<tr>
<th>Worrisome</th>
<th>Non-worrisome</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spontaneous</td>
<td>Elicited</td>
</tr>
<tr>
<td>Unilateral</td>
<td>Bilateral</td>
</tr>
<tr>
<td>Single duct</td>
<td>Multiple ducts</td>
</tr>
<tr>
<td>Bloody</td>
<td>Non-bloody</td>
</tr>
</tbody>
</table>
# Nipple discharge

## Treatment

<table>
<thead>
<tr>
<th>Type</th>
<th>Treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Milky, unilateral</td>
<td>No treatment</td>
</tr>
<tr>
<td>Milky bilateral</td>
<td>Check prolactin</td>
</tr>
<tr>
<td>Unilateral spontaneous</td>
<td>Duct excision</td>
</tr>
<tr>
<td>Bloody</td>
<td>Duct excision</td>
</tr>
<tr>
<td>Bilateral, multi-duct or nonbloody elicited</td>
<td>reassurance, avoid trauma</td>
</tr>
</tbody>
</table>
Breast Pain
Breast Pain

- Physiologic breast pain
  - Cyclic
  - Associated with menstrual cycle
- Idiopathic breast pain
  - Chronic
  - Constant
Breast Pain

🌟 Work up
  – H & P
  – Imaging if age appropriate
  – Focused ultrasound if focal area of pain
Breast Pain

🌟 Treatment
  – Support
  – NSAID
  – Evening Primrose Oil
  – Management of depression
Halsted radical mastectomy
Treating breast cancer

Removing the tumor
Lumpectomy + Radiation Therapy
Mastectomy

Survival is the same
## Treating breast cancer: Lumpectomy

<table>
<thead>
<tr>
<th>Advantages</th>
<th>Disadvantages</th>
</tr>
</thead>
<tbody>
<tr>
<td>More normal appearance</td>
<td>Longer treatment time</td>
</tr>
<tr>
<td></td>
<td>Not good for all tumor types</td>
</tr>
<tr>
<td></td>
<td>Requires radiation</td>
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</table>

Survival is the same
## Treating breast cancer: Mastectomy

<table>
<thead>
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<th>Advantages</th>
<th>Disadvantages</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shorter treatment time</td>
<td>Loss of breast</td>
</tr>
<tr>
<td></td>
<td>May still require radiation</td>
</tr>
</tbody>
</table>

Survival is the same
Distribution of Breast tissue
Borders of Mastectomy
Treating breast cancer: Lymph node staging

Axillary node dissection vs. Sentinel lymph node biopsy
Axillary Node Dissection
Definitions -
Lymphatic Mapping
Definitions-
Sentinel lymph node biopsy
**Sentinel Node Biopsy**

- False negative rate about 8%
- Identifies those women with negative lymph nodes who can avoid axillary dissection
- Less lymphedema
- Significantly less parasthesias
- Positive sentinel lymph nodes should go on to axillary dissection
St. Agatha the Pure