The Clinical Breast Exam Revisited: What’s New?

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Objectives

Review:
- Contribution of CBE to the early detection of breast cancer
- Variables influencing the effectiveness of the CBE
- Best method for performing the CBE according to consensus statement and current evidence

Breast Cancer in Context
- 2nd leading cause of cancer death in women
- Most common cause of death due to cancer in women 45-55
- Affects one in 8 American women in her lifetime
- Survival inversely related to tumor size
- Delay of diagnosis is the second leading cause of malpractice claims in the US
- Many of us have some personal experience

Mammography – Benefits and Limitations
- Ability to identify nonpalpable cancers
- Clear contribution to reduction in mortality
- Patient goes at recommended intervals
- Technological limitations
- False negatives based on patient characteristics
- False positives
- Missed abnormalities
- Clinicians overestimate efficacy of mammography
What is the Goal of the CBE?

Goal:
• To detect palpable abnormalities in asymptomatic women at an earlier stage of disease when treatment options are greater and more effective
• To evaluate patient symptoms
• To provide screening in women for whom mammography is not recommended
• To provide screening in limited resource settings

What is the Contribution of the CBE to Early Detection?

• Lack of RCT demonstrating CBE reduces mortality
• Population-based study:
  ✓ 71.2% of cancers identified by BSE
  ✓ 19.6% of cancers identified by mammogram
  ✓ 9.3% of cancers identified by CBE
  • Relied on recall, was in younger women

What is the Contribution of the CBE to Early Detection?

• More recent studies suggest that:
  ✓ 5.1% of malignancies detected by CBE in women with negative, benign or probably benign mammograms
    • This is over 10,000 otherwise undetected cancers per year
  ✓ 10.7% of cancers identified by CBE alone
  ✓ CBE plays a role in detection of interval cancers, in screening for women under 40, and in women who do not receive high quality mammograms or who do not follow recommendations for screening mammography

What Are The Barriers To And Variables Influencing CBE?

Physician Variables
• Unconvinced about the value of the exam
• Discomfort with the exam
• Confidence, skill
• Considerable variability in way the exam is taught and performed
• Reliance on technology to provide the answer
• Limited time
• Experience in detecting abnormal breast lesions
What Are The Barriers To And Variables Influencing CBE?

**Patient characteristics**
- Tissue density, nodularity, menopausal status

**Tumor characteristics**
- Size, depth, mobility, firmness

CBE Skills Among Graduating Primary Care Physicians

- Only 50% examined the patient in a supine position with arm over head
- Only 55% performed systematic palpation
- Only 37% examined the supraclavicular region
- Only 25% examined the axilla
- Some evidence that CBE skills diminish during training

The Components of the CBE Have Not Changed

- Inspection
- Nodal Evaluation
- Breast Palpation

What’s Different Regarding Inspection?

- Inspection
  - No studies document the independent benefit of inspection
  - Taking into account limited time, inspect while palpating
  - Increase inspection if abnormality found on palpation
### What’s Different Regarding Inspection?

- **Inspection**
  - Look for subtle changes such as flattening of breast contour, area of fullness, asymmetry, difference in venous pattern, scaliness of skin
  - Findings such as erythema, retraction or dimpling, or changes in the nipple such as inversion, tend to be late signs

### What’s Different Regarding Lymphatic Examination?

- **Palpation of lymph nodes should:**
  - Include the supra and infra clavicular areas
  - Include the apical, central, pectoral, and subscapular areas
  - Be performed with the patient seated

### What’s Different Regarding Palpation?

- **MammaCare method**
  - Most widely studied
  - Recommended by CDC and the ACS

### What’s Different Regarding Palpation?

- **Emphasizes the following core competencies**
  - Positioning
  - Perimeter
  - Palpation
  - Pressure
  - Pattern
  - Time
What’s Different Regarding Positioning?  
The Cahan Position

Note two characteristics:

• Position of patient's ipsilateral arm, the hand resting on forehead, which softens pectoralis muscle
• Position of hips/knees to contralateral side, which helps to distribute breast tissue centrally over chest wall

Include the Full Perimeter During Palpation

• Perimeter as pentagon
  • Sternum to the lateral chest wall at the mid-axillary line
  • Clavicle to below the infra-mammary ridge
  • Junction of the shoulder with the anterior chest, at anterior axillary line

Performing the Examination Palpation/Pressure

• Three fingers
• Dime-sized circles
• Overlapping by one finger breath
  ✓ with fingers sliding over breast tissue
  ✓ helps to ensure no areas are missed
  ✓ palpate directly over nipple

Performing the Examination Palpation/Pressure

• Pay particular attention to upper outer quadrant, and under nipple
• No need to assess for nipple discharge
• In women with breast implants - perform the CBE in the same way
• In women post mastectomy - palpate all of chest wall and along incision
What’s Different Regarding Pattern?

- Vertical strip pattern in contrast to concentric circles
- Palpate from distal to proximal toward you
- Efficacy in detecting lumps
  - Vertical strip (67.9%) vs. spoke pattern (44.7%)
  - Vertical strip (64.4%) vs. concentric circles (38.9%)

Performing the Examination

Time - A Critical Variable

- Duration of exam (and consistency of search pattern) are the factors most consistently shown to correlate directly with sensitivity and specificity
  - 1 minute increase in exam duration resulted in 1.8 more lumps being noted, but also increased false positive rates
  - Optimal duration is influenced by a variety of factors: proficiency of examiner, breast size, lumpiness, body weight, tenderness
  - A thorough exam may take up to 3-4 minutes per side

What Can I Take Home?

- Don’t overestimate the efficacy of mammography, don’t underestimate the importance of CBE
- Use the preferred method for CBE
  - Include infra and supraclavicular in lymphatic evaluation
  - Consider the use of Cahan’s position
  - Three level palpation, vertical strip pattern, cover full perimeter of breast tissue
- Remember that time and consistency of search pattern are the most critical variables
- Any abnormality found on CBE, even in the face of a normal mammogram, needs evaluation to appropriate resolution

Video Demonstration

At this point I would like to share a video clip that highlights selected portions of the exam.
Breast Cancer Screening and Diagnosis

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Ohio State University Medical Center

Palpable mass usually \( \frac{1}{2} '' \)
Mammograms detect \( \frac{1}{4} '' \)

Craniocaudad

Lateral
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<th>Adequate Compression</th>
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<tr>
<td>• Lowers x-ray dose</td>
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<td>• Reduces thickness</td>
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<tr>
<td>• Immobilizes breast</td>
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<td>• Spreads out tissue</td>
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<table>
<thead>
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<th>Mammograms</th>
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<tr>
<td>• Screening</td>
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<td>• Diagnostic</td>
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## ACR Recommendations for Screening Mammograms

| • Baseline between ages 35-40 |
| • Annual screening mammograms after age 40 |

## Screening Versus Diagnostic Mammogram

| • Screening |
| ✓ No breast problems |
| ✓ No self history of breast cancer |
| ✓ Over age 40 |

## Diagnostic Mammogram

| • Mass |
| • Persistent, pin-point pain |
| • Personal history of breast Ca |
| • Increase in size/firmness |
| • New nipple retraction |
| • Itching/flackiness of nipple |
| • Spontaneous nipple discharge-serous/bloody |
**Duty of Referring Doctor**

- Results of Clinical Exam
- Location of Palpable Lesion
- Recent Needle Biopsy

**Bi-Rads Code**

- Bi-Rads 1- Negative
- Bi-Rads 2- Benign findings
- Bi-Rads 3- Short follow up
- Bi-Rads 4- Suggestive of Ca
- Bi-Rads 5- Strongly suggestive
- Bi-Rads 6- Known Ca

**10% of breast cancers are not seen by mammograms or ultrasounds**

**Ultrasound of the Breast**
Value of Breast US

- Cysts
- Margins/blood flow – solid mass
- Lymph nodes
- Duct evaluation
- Silicone implant leak
- F/U known Ca
- Perform aspiration/biopsy

DMIST

- Digital mammographic screening trials
- Study to determine value of MRI and digital mammography
### Digital Mammograms

- Detect 15-28% more Ca in premenopausal women or those over 50 with dense breasts

### Acrin Guidelines for Screening MRI

- > 20% risk of Breast Ca
- BRCA 1 and BRCA 2 gene mutation
- 1st degree relative with mutation
- Strong family history
- Chest radiation between 10-30

### MRI in Contralateral Breast

- 10% of breast ca patients develop contralateral Ca
- DMIST showed a 3% increase in detection in ca patients
**Image Guided Biopsy**

- Stereotactic biopsy
- Ultrasound guided biopsy

**Stereotactic Breast Biopsy**

**Stereotactic Table**
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<th>Biopsy Needle</th>
<th>Biopsy Clip</th>
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### Not Stereo Candidate
- > 300 Pounds
- Breast too small
- Superficial lesion
- Deep lesion
- Bleeding problems
- Unable to lie prone

### Ultrasound Guided
Ultrasound Biopsy

Complications of Biopsy

- Hematoma and Infection
- Rate = 0.1%
- Miss Rate = 3%