Male Breast Cancer

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ACGME Core Competencies

Patient Care
Medical Knowledge
Practice Based Learning/Improvement
Interpersonal Communication Skills
Professionalism
Systems-Based Practice
Case Presentation

• 63 year old male presenting with painful” lump” in the right breast for 2 months

• PMH: DM, HTN, Metastatic Prostate ca
  • NKMA
  • Meds: Glyburide, Metroprolol, Enalapril

• PE:
  – 2 cm right breast mass at 7.00
  – No axillary adenopathy palpated
Case Presentation

• U/S:
  – 1.8 cm mass with lobulated margins at 7.00 retroareolar, 2 cm deep.

• Mammo:
  – 2.5 cm oval high density mass with spiculated margins and grouped linear heterogeneous pleomorphic calcifications.

• Surgery:
  – Modified radical Mastectomy.

• HC:
  – Discharged home POD#1

• Path: invasive ductal ca
Epidemiology

- Geographic variation
- **Incidence** increase from 0.86 to 1.08 per 100,000
- Prevalence increase with age
- **Distribution**: Unimodal in Males vs Bimodal for females.
Etiology and Risk Factors

Definite etiology of MBC is unknown

- Family history (similar to females)
- Inherited predisposition (BRCA-2)
- Alteration in the estrogen/testosterone ratio
  - Estrogen increase: Klinefelter Sd, cirrhosis, prostate cancer therapy, transsexuals.
  - Androgen decrease: undescended testes, Mumps, testicular trauma.
- Strong Racial Predilection
Pathology

• The entire spectrum of histological variants of breast ca are seen in Men
  – Infiltrating ductal Ca (64%-93%)
  – Papillary (2.5%-5%)

• Molecular markers:
  – ER (+) 64-85%
  – PR (+) 75%
  – Bcl-2, Her2neu, gelatinase, MIB-1 index

www.downstatesurgery.org
Clinical Features

• Typical presentation is an eccentric non tender mass in 75%-95%.

• Nipple involvement in 40%

• Men are 1.6 times more likely to have axillary involvement as compared to females.
Investigations

- **US**
  - Limited due to paucity of breast tissue

- **Mammography:**
  - Sens: 92%  PPV: 55%
  - Spec: 90%  NPV: 99%
  - Mass lesion more than calcifications

- **FNAC:** good modality
Prognosis

- Stage and axillary node status
  - most important independent predictor of overall survival in non disseminated disease

- ER/PR(++): prognostically favorable

- Traditionally dismal survival compared to females

- Comparison of disease specific survival was shown to have statistically better significant results in males as compared to female breast cancer.
Surgical Treatment

• Based on evidence from female breast CA
  
  – MRM
  
  – Simple mastectomy/Lumpectomy with Chemo, RT
Adjuvant Therapy

- **Hormonal Therapy**

- **Excellent response** (ER ++++)

- **Tamoxifen:**
  - No data available to suggest duration of treatment:
  - 56% vs 28% survival at 5 years in patients receiving tamoxifen X 2 years

Adjuvant Therapy

- Systemic chemotherapy
- No definite trials available

- 24 node (+) patients (stage I - III)
  - treated with FAC
  - 5Y survival of 80% median F/U 46 months

Metastatic Disease

• Mets to: Liver, Lung, Brain, Bone

• Hormonal Therapy
  – Tamoxifen
  – Diethylstilbestrol

• Systemic Chemotherapy:
  – ER (--)
  – Failure of hormonal therapy

No definitive regimen described due to small # of cases
Conclusion

- MBC with rising incidence—particularly in urban US and Canada.
- Most males present with advanced clinical stage of the disease.
- Treatment of localized disease is MRM
- Adjuvant therapy is mainly hormonal
- The rarity of this condition precludes large randomized trials
BRCA2
A. is associated with a 50% risk of breast cancer
B. is not associated with an increased of male breast cancer
C. is thought to play a role in DNA damage response pathways
D. is a cystosolic protein
E. is associated with a 40% lifetime risk of ovarian cancer

The most common etiology of senescent gynecomastia is
A. cirrhosis
B. Idiopathic
C. Drug induced
D. Renal disease

Tamoxifen
A. has been shown to decrease the risk of future breast cancer by 49% in high-risk patients
B. Is an ER agonist
C. has been shown to decrease the incidence of recurrent breast cancer by 47%
D. Is an ER antagonist
E. All of the above

A 67-year-old male arrives at your office with a 1-month history of right breast pain, most subareolar. He now is able to palpate a mass. He denies any nipple discharge or skin changes. Your next step is
A. clinical breast exam and office US
B. mammogram
C. Measure estrogen and testosterone levels
D. ask the patient to stop all medications
E. give reassurance that this is not cancer and see him back in 6 months to 1 year for a repeat examination

A 45-year-old male presents with a 2 cm, painless subareolar mass of his left breast, with nipple retraction. Physical examination reveals no lymph node involvement. A fine needle biopsy of the mass is performed and reveals infiltrating ductal carcinoma with positive hormone receptors. Further workup reveals no evidence of metastatic disease. What is the most appropriate treatment plan?
A. hormone therapy with tamoxifen
B. wide local excision with sentinel lymph node biopsy
C. segmental mastectomy
D. modified radical mastectomy
E. radical mastectomy
Figure 1
ER, PR and AR Expression

Table 2: ER, PR and AR expressions in various studies

<table>
<thead>
<tr>
<th>Study</th>
<th>Number of patients</th>
<th>ER (%)</th>
<th>PR (%)</th>
<th>AR (%)</th>
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<td>Rich A et al. [77]</td>
<td>47</td>
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<td>Andre S et al. [90]</td>
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<td>Mourao Netto M et al. [91]</td>
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<td>Stipite B et al. [82]</td>
<td>26</td>
<td>81</td>
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<td>Kwiatkowska D et al. [86]</td>
<td>43</td>
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<tr>
<td>Rayson D et al. [97]</td>
<td>77</td>
<td>91</td>
<td>96</td>
<td>95</td>
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</tbody>
</table>

Note: Na-data not available
TNM Stage Groupings

Stage 0
- **Tis**
  - N0
  - M0

Stage I
- **T1a**
  - N0
  - M0

Stage IIA
- **T0**
  - N1
  - M0
- **T1a**
  - N1
  - M0
- **T2**
  - N0
  - M0

Stage IIB
- **T2**
  - N1
  - M0
- **T3**
  - N0
  - M0

Stage IIIA
- **T0**
  - N2
  - M0
- **T1a**
  - N2
  - M0
- **T2**
  - N2
  - M0
- **T3**
  - N1
  - M0
- **T3**
  - N2
  - M0

Stage IIIB
- **T4**
  - N0
  - M0
- **T4**
  - N1
  - M0
- **T4**
  - N2
  - M0

Stage IIIC
- Any T
  - N3
  - M0

Stage IV
- Any T
  - Any N
  - M1

Figure 2
Stage related survival in male breast cancer.
Table 1: Changing incidence of male breast cancer. Figures given are Age Standardised Incidence (ASR) per 100,000 population.

<table>
<thead>
<tr>
<th></th>
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</thead>
<tbody>
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<td>North America</td>
<td>USA (New York State)</td>
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<td>1.1</td>
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<td>0.5</td>
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<td>Canada (Alberta)</td>
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<td>0.6</td>
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<tr>
<td></td>
<td>Canada (Ontario)</td>
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<td>0.6</td>
<td>0.7</td>
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<tr>
<td>South/Central America</td>
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<td>0.5</td>
<td>0.4</td>
<td>0.1</td>
<td>0.3</td>
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<td>Na</td>
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<tr>
<td></td>
<td>Brazil (Goiania)</td>
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<td>Na</td>
<td>0.4</td>
<td>0.7</td>
<td>0.8</td>
</tr>
<tr>
<td>Europe</td>
<td>UK (South Thames)</td>
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<td>0.4</td>
<td>0.5</td>
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<td>Norway</td>
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<td>0.5</td>
<td>0.4</td>
<td>0.4</td>
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<tr>
<td>Asia</td>
<td>Israel (Jews)</td>
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<td>0.8</td>
<td>1.4</td>
<td>1.1</td>
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<td></td>
<td>Japan (Osaka)</td>
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<tr>
<td></td>
<td>India (Mumbai)</td>
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<td>0.4</td>
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<tr>
<td></td>
<td>China (Shanghai)</td>
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<tr>
<td>Africa</td>
<td>Uganda</td>
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<td>Algeria</td>
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<td>Australia</td>
<td>New South Wales</td>
<td>Na</td>
<td>0.7</td>
<td>0.7</td>
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<td>0.7</td>
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</table>

Note: Na-data not available.
Men With Breast Cancer Have Better Disease-Specific Survival Than Women

Mahmoud B. El-Tamer, MD; Ian K. Komenaka, MD; Andrea Troxel, ScD; Huiling Li, MS; Kathie-Ann Joseph, MD, MPH; Beth-Ann Ditkoff, MD; Freya R. Schnabel, MD; David W. Kinne, MD

Table 3. Outcomes of the Matched Patient Groups

<table>
<thead>
<tr>
<th></th>
<th>No. of Men (n = 53)</th>
<th>No. of Women (n = 52)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alive</td>
<td>33</td>
<td>33</td>
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<tr>
<td>Died of breast cancer</td>
<td>3</td>
<td>11</td>
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<tr>
<td>Died of other cancer</td>
<td>4</td>
<td>0</td>
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<tr>
<td>Died of other causes</td>
<td>9</td>
<td>1</td>
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<tr>
<td>Unknown</td>
<td>4</td>
<td>7</td>
</tr>
</tbody>
</table>

Figure 3. Causes of mortality of male patients with breast cancer.

Arch Surg. 2004;139:1079-1082