The Surgical Management of Breast Cancer

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Paradigm Shift In The Management of Breast Cancer
Medical, Radiation, and Surgical Perspectives

Moving from widely ablative to more targeted therapies
Targeted Therapies

Treating only diseased cells and tissue at risk

Same (or better) outcomes with less toxicities and improved quality of life
“I do not despair of carcinoma being cured somewhere in the future, but this blessed achievement will, I believe, never be wrought by the knife of the surgeon”

D. Hayes Agnew  1883
Breast Surgery in the 21st Century

Radical Mastectomy

↓

Modified Radical Mastectomy

Lumpectomy + Radiation

Skin Sparing Mastectomy

Nipple Sparing Mastectomy
Radical Mastectomy

- Nipple/skin removed
- Breast tissue removed
- Axillary lymph nodes removed
- Subclavian and supraclavicular lymph nodes removed
- Pectoralis major muscle removed
Modified Radical Mastectomy

- Breast tissue removed
- Nipple/skin removed
- Level I and II axillary lymph nodes removed
- Level III axillary lymph nodes preserved
- Pectoralis major muscles preserved
Lumpectomy/Radiation

Tumor removed with surrounding normal tissue
Skin Sparing Mastectomy

- Overlying skin preserved
- Nipple/areola removed
- Glandular breast tissue removed
Nipple Sparing Mastectomy

- Nipple/areola preserved
- Overlying skin preserved
- Glandular breast tissue removed
## Local Recurrence after Skin Sparing Mastectomy

<table>
<thead>
<tr>
<th>Study</th>
<th>Number</th>
<th>Follow-up (mo)</th>
<th>Local Recurrence (%)</th>
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<tbody>
<tr>
<td>Newman 1998</td>
<td>372</td>
<td>50</td>
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<td>Slavin 1998</td>
<td>51</td>
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<td>Kroll 1999</td>
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<td>Simmons 1999</td>
<td>127</td>
<td>49</td>
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<td>Foster 2002</td>
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<td>49</td>
<td>4.0</td>
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<td>Medina-Franco</td>
<td>173</td>
<td>73</td>
<td>4.5</td>
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<td>Carlson 2003</td>
<td>539</td>
<td>65</td>
<td>5.8</td>
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</table>
PLASTIC SURGERY

COME AS YOU ARE AND LEAVE AS YOU WISH
Breast Reconstruction

➢ **Autologous Tissue**
  - *Pedicle flaps* - *blood vessels uninterrupted*
  - TRAM (Transverse Rectus Abdominus Myocutaneous) flaps
  - Latissimus dorsi flaps
  - *Free flaps* - *blood vessels re-attached*
  - DIEP (Deep Inferior Epigastric Perforators)
    - Skin and fat used, no muscle
    - Gluteal muscle

➢ **Prosthesis**
  - *Tissue expanders*
  - *Permanent implants*
    - Saline vs silicone vs hybrid
Bilateral DIEP Flap Breast Reconstruction After Skin Sparing Mastectomies

Courtesy of Dr Kryger, Plastic and Reconstructive Surgery
Bilateral DIEP Flap Breast Reconstruction After Nipple Sparing Mastectomies

Courtesy of Dr Kryger, Plastic and Reconstructive Surgery
Right DIEP Flap and Left Augmentation-Lift After Right Skin Sparing Mastectomy

Courtesy of Dr Kryger, Plastic and Reconstructive Surgery
Nipple Sparing Mastectomy
With Implants

11/13/2013

9/1/2015

Courtesy of Georgeanna Huang, MD
How does Breast Conservation Therapy compare to Mastectomy?
Mastectomy vs Breast Conservation Therapy

Limitations for Breast Conservation Therapy

✓ Clear margins
✓ One quadrant with cancer
✓ Must be able to have radiation post op
✓ (Relatively small tumor)
Breast Conservation Therapy

Margins

Negative Margins = Tumor not on the edge

Positive Margins = Tumor on the edge

Close Margins = (probably) doesn’t matter
Limitations for Breast Conservation Therapy

✓ Clear margins
✓ One quadrant with cancer
✓ Must be able to have radiation post op
✓ (Relatively small tumor)
Breast Conservation Therapy

**Multicentric Disease**

Breast cancer

Not a candidate for breast conservation therapy
Limitations for Breast Conservation Therapy

✓ Clear margins
✓ One quadrant with cancer
✓ **Must be able to have radiation post op**
✓ (Relatively small tumor)
Breast Conservation Therapy

Radiation Therapy

Limitations for Breast Conservation Therapy

- ✓ Clear margins
- ✓ One quadrant with cancer
- ✓ Must be able to have radiation post op
- ✓ *(Relatively small tumor)*
Breast Conservation Therapy

Neoadjuvant Chemotherapy

Chemotherapy → Lumpectomy
Rate of Contralateral Prophylactic Mastectomy (CPM) is Increasing

Rates of Bilateral Mastectomies: 2003-2010

- 4.3 - 9.7%
- < 45 yrs old: 33%
- 2010: 25,000 women

DOES CONTRALATERAL PROPHYLACTIC MASTECTOMY DECREASE THE INCIDENCE OF ANOTHER BREAST CANCER?

ABSOLUTELY!!!!!!
DOES CONTRALATERAL PROPHYLACTIC MASTECTOMY IMPROVE SURVIVAL RATES?

PROBABLY NOT 😟
AVERAGE RISK OF DEVELOPING ANOTHER BREAST CANCER:

0.5%/year

Indications for Prophylactic Mastectomy

• **High Risk**
  
  BRCA mutations or other susceptibility genes  
  Strong family history with no demonstrable mutation  
  Histological risk factors

• **Difficult Surveillance**
  
  Mammographically dense breasts  
  Diffuse indeterminant microcalcifications

• **Reconstructive Issues**
  
  Improved symmetry

*Position Statement On Prophylactic Mastectomy*  
*Society of Surgical Oncology Consensus Statements 2007*
Decision-Making in Young Women with Early Stage Breast Cancer

- Most make final decision on their own ("patient-driven")
- Main factor: “Peace of Mind”
- Women who had CPM
  - Higher generalized anxiety levels
  - Expressed greater confidence in their decision
  - Reported less worry about recurrence

Surgery Has Become More Targeted

• Lumpectomy with radiation has the same outcomes as mastectomy
• Even in patients requiring mastectomy, the type of mastectomy is less
• Types of reconstruction has pros/cons
Contralateral Prophylactic Mastectomy: A Step Backwards???

- Despite lack of evidence showing no survival advantage, the rate of bilateral mastectomies has increased
- Risk of future breast cancers is very low
- Highest levels of patient satisfaction are when decision is made by the patient