MASTECTOMY THROUGH THE AGES

Barry Rosen, MD, FACS

Medical Director
Advocate Good Shepherd Hospital
Breast Care Center
TRUE CONFESSIONS

I AM A BREAST MAN
History of the Breast as a Symbol

- Art
- Sculpture
- Literature
- Advertising
- Politics

Reflecting spiritual, familial, social, and contemporary perspectives of the breast
Breasts Revered….

“Venus”, Fertility Goddess
25,000 B.C. (Stone Age)

“Artemis of Ephesus”
800 B.C.
The Sacred Breast

“Madonna del Latte”
Italian 14th Century

Among first nursing Madonna portraits
The Erotic Breast

Transition from **sacred breast** of the Middle Ages to the **erotic breast** of the Renaissance

Charles VII’s mistress, Agnes Sorel ~ Madonna (15th Century)
The Domestic Breast

Sophie Hedwig, Countess of Nassau. 1621
Symbolizing charity
The Political Breast

“Liberty Leading the People”, Delacroix 1830
The Commercialized Breast

Princess Bust Developer  Sears, Roebuck and Co.  1897
Promised to make the breast “round, firm and beautiful”
The Commercialized Breast

Fruit crate label 1950
The Liberated Breast

Demonstrator displaying her post-mastectomy chest - 1994
The Augmented Breast

Monalisa after one week in USA

Before  After
The Augmented Breast: a US "Epidemic"
The Surgical Breast

Thomas Eakins  “The Agnew Clinic”  
Philadelphia - 1889
History of Breast Cancer Surgery

- Second half 19th century: anesthesia (Morton) & antiseptic principles (Lister) facilitated surgery
- 1867: Moore “radical mastectomy”
- 1882: Halsted “radical mastectomy” Johns Hopkins, standard for 60 years in USA
- 1905: Ombredanne—1st pectoral muscle flap for breast reconstruction France
- 1906: Tansini latissimus dorsi mastectomy repair in Italy
MODERN ERA:
Evolution of Mastectomy

- Radical Mastectomy (Skin, Breast, Chest Wall Muscles, Many Lymph Nodes)
- Modified Radical Mastectomy ([less] Skin, Breast, Lymph Nodes)
- Skin-Sparing Mastectomy (NAC, breast, SLN)
- Nipple Sparing Mastectomy (no skin, breast, +/- LN)
MODERN ERA:
Timing of Reconstruction

• 1960s: rare reconstruction, always delayed (recurrence rates, survival)

• 1980s: immediate vs. delayed (lower recurrence rates, psychological benefit)

• 1990s: tissue expanders, microsurgery
MODERN ERA: Evolution of Reconstruction

Autologous vs. Implants
Post-Mastectomy Reconstruction

1999-2004
2005-2009
2010-2014

- U/L Implant
- B/L Implant
- U/L Autologous
- B/L Autologous
MODERN ERA: Mastectomy vs. Lumpectomy

-Since the 1970s, it has been well-established that survival rates are comparable*

-Why would a woman ever have a mastectomy?
INDICATIONS FOR MASTECTOMY

- Multi-centric cancer
- Hereditary predisposition
- Large tumor*
- Patient preference
MASTECTOMY RATES

Illustration source: Analysis of the National Cancer Data Base by Dr. Katherine Yeo, MD, Memorial University Health System.
2013 BILATERAL MASTECTOMY RATES BY AGE

NCDB
CONTRALATERAL PROPHYLACTIC MASTECTOMY (CPM)

Oncology vs. Quality of Life

- Article: No survival advantage to CPM
- Insurance Denials
- Media: CNN, WSJ, Medscape spread message
- ASBS: Consensus statement “No survival advantage”
EVOLUTION OF
RECONSTRUCTION OVER
THE PAST 50 YEARS
Transposition of Flaps (1960s)

Labial nipple / areola graft
Simple Augmentation (1970s)

Modified radical mastectomy

Implant alone
1980s-1990s: Pedicled TRAM Flap

Pre Op TRAM

Post Op TRAM
1990s-2000s: Latissimus Reconstruction
1990s: DIEP Flap Microsurgery Advantage

- Better overall outcomes
- Less donor site morbidity
- Improved patient satisfaction
- 1991: DIEP perforator flap, Japan
- 1994: Allen for breast reconstruction

Wilkins, Prospective Outcomes in Breast Reconstruction
Plast Reconstr Surg 106: 2000
Implant Reconstruction

Whole muscle coverage
3-D Tattoo Now Popular
NIPPLE SPARING MASTECTOMY

Pre-Operative

Post-Operative
NSM v. MRM/SSM

- Patient satisfaction
- Patient selection
- Recurrence rates
- Complications
NSM: Patient Satisfaction

- Higher sexual/psychosocial well-being
- Higher satisfaction with cosmetic outcome
- Greater sensation over breast mound (~50% at NAC)
NSM: Patient Selection

- Prevention
- Treatment
NSM For Prophylaxis

- 3 studies published encompassing over 200 pts with BRCA mutations
- 7% rate of incidental cancers
- Follow-up ranged from 10-60 months
- 1 new cancer observed (0.7%)
Patient Selection for NSM

- Tumor size less than 5cm
- Distance from nipple >2cm
- HER2/Neu nonamplified
- No prior radiation, smoking*
- Breast Size/Degree of Ptosis*
Oncologic Safety of NSM
(Headon, et al, 2016)

- Retrospective review of 12,358 NSM from 73 studies published up till 2015
- Local recurrence rate of 2.4% (mean follow-up of 38 months)
- Nipple necrosis rate 5.9% (8.7% v. 3.4% comparing before/after 2013)
### Table 7. Combined Mastectomy Incision Choice and Necrosis Rate of Included Studies

<table>
<thead>
<tr>
<th>Mastectomy Incision</th>
<th>No. of Procedures</th>
<th>No. of Necroses</th>
<th>Necrosis Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Radial (straight, lateral, vertical)</td>
<td>249</td>
<td>22</td>
<td>8.83%</td>
</tr>
<tr>
<td>Periareolar/circumareolar (+/- omega, inferolateral or superolateral extension)</td>
<td>146</td>
<td>26</td>
<td>17.81%</td>
</tr>
<tr>
<td>Inframammary</td>
<td>110</td>
<td>10</td>
<td>9.09%</td>
</tr>
<tr>
<td>Mastopexy (incision contained within previous mastopexy or reduction scar)</td>
<td>21</td>
<td>1</td>
<td>4.76%</td>
</tr>
<tr>
<td>Transareolar</td>
<td>11</td>
<td>9</td>
<td>81.82%</td>
</tr>
</tbody>
</table>

NSM: Reconstructive Options

- Autologous vs. Implants
- Direct-to-implant vs. Staged (tissue expander)
- Sub-pectoral vs. Pre-pectoral (ADM)
Tissue Expander/Implant (2-Stage)

Preoperative  Postoperative
Direct to Implant (1-Stage)

Preoperative

Postoperative
Case Study 3-stage NSM

Preop mastopexy/reduction
s/p bilateral tissue expansion
s/p bilateral subpectoral implants
NSM CONCLUSIONS

- Cosmetic outcome superior
- Greater sensation/pt preference
- Risk of local recurrence similar to MRM
- Pt selection is critical (>2cm from nipple, <5cm tumor, neg. PATH at nipple)
We have a long way to go...
That's all Folks!