“HOW CLOSE IS TOO CLOSE”

February 21, 2017
V. Tammy De La Melena, MD, FACS
Breast Surgical Oncology
Compass Oncology
HOW MUCH TO REMOVE?

Understanding the evolution of breast surgery
1846 Anesthesia
1860 Germ theory

Modified Radical Mastectomy: 1882
The Standard for 100 years

Randomized Studies: NSABP 1965
Data driven treatments

“De-escalation of Therapy”
HOW MUCH TO REMOVE?

Modified Radical Mastectomy: **1882**
The Standard for **100 years**

Randomized Studies: **NSABP B4 1974**
First Randomized trial proving Simple Mastectomy equally effective as Radical Mastectomy

Randomized Studies: **NSABP B6 1984**
**Lumpectomy** + XRT equal to Mastectomy
Surgical Management and Extent of Disease

1975
Average Tumor Size = 3.6 cm
75% of patients Node+
No adjuvant therapies

Today
Average Tumor Size = 1.6 cm
25% of patients Node+
Adjuvant therapies
Chemotherapy, Immune Endocrine therapy
XRT
The 30 year MARGIN DEBATE
“How Close is Too Close”
The 30 year MARGIN DEBATE
“How Close is Too Close”

Quadrantectomy/Partial Mastectomy
The **30 year MARGIN DEBATE**

“How Close is Too Close”

Quadrantectomy/Partial Mastectomy

1990’s: 1cm
The 30 year MARGIN DEBATE
“How Close is Too Close”

Quadrantectomy/Partial Mastectomy

1990’s: 1cm
The 30 year MARGIN DEBATE

Quadrantectomy/Partial Mastectomy

1990’s: 1cm

2000’s: 4mm
The 30 year MARGIN DEBATE
“How Close is Too Close”

Quadrantectomy/Partial Mastectomy

1990’s: 1cm

2000’s: 4mm
The 30 year MARGIN DEBATE
“How Close is Too Close”

Quadrantectomy/Partial Mastectomy

1990’s: 1cm

2000’s: 4mm

2010: 1mm-2mm
The 30 year MARGIN DEBATE
“How Close is Too Close”

Quadrantectomy/Partial Mastectomy

1990’s: 1cm
2000’s: 4mm
2010: 1mm-2mm
The 30 year MARGIN DEBATE
“How Close is Too Close”

Quadrantectomy/Partial Mastectomy

1990’s: 1cm

2000’s: 4mm

2010: 1mm-2mm

Today: How Close can we get?
The 30 year MARGIN DEBATE
What Have We Learned Anything After 3 Decades

50% of Additional Surgeries are done for “Negative Margins”

Pathology and Breast Imaging have improved substantially since the initial Breast Conservation (Lumpectomy) Trials

Systemic therapy (chemo, anti-estrogen therapy, immune therapy) have a major impact on controlling breast recurrences
The 30 year MARGIN DEBATE
What Have We Learned Anything After 3 Decades

Convene a Multi-Specialty Panel

Systematic review, meta analysis of

33 studies of Invasive Carcinoma
(28,162 patients)

20 studies of DCIS
(7,883 patients)
CONSENSUS GUIDELINES
March 2014
LUMPECTOMY with XRT

1) Systematic review, meta analysis of 33 studies of Invasive Carcinoma and 20 studies of DCIS primary evidence base, with additional topic-specific literature reviews (36,045 PATIENTS)

2) Provide rating of strength of evidence and strength of recommendation for each recommendation

3) Achieve 90% consensus by vote for each recommendation

4) No conflict of interest among panel members.

Final manuscript approved by SSO Executive Council, Astro Board of Directors, and ASCO Board of Directors
HOW CLOSE CAN WE GET?: “No Ink on Tumor”
The Margin Problem:

There is a 2x increased risk of recurrence in the breast with positive margins.

Where we were: 25% of Lumpectomy cases resulted in return to surgery for compromised margins.

How many cases are due to challenge of extent of disease versus margin debates?
CONSENSUS GUIDELINES: Update
August 2016 (DCIS)
Ductal Carcinoma In Situ

Non-Invasive Cancer contained within the microscopic ducts of the breast

Stage 0 Breast Cancer
Non-lethal disease (mortality 3%)

20% of all breast cancer diagnosis

2mm Margin
TRENDS:
Surgical Treatment of Early Stage Breast Cancer
National Cancer Database - ACS

Albornoz/Matros et al PRS in press
A Factor Responsible for Rising Mastectomy Rates

Of patients seeking breast conservation, only 66% were able to accomplish this with a single surgery.

34% of Patients underwent additional surgery and nearly 1/3 went on to convert to Mastectomy.

M Morrow JAMA 2009; 302:1551
Have the Guidelines Changed Anything?
Surgeons Accepting “No Ink on Tumor” as Adequate Margin

<table>
<thead>
<tr>
<th></th>
<th>Pre-Guideline</th>
<th>Post-Guideline</th>
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<tbody>
<tr>
<td><strong># Surgeons, year</strong></td>
<td>Blair et al n = 351, 2009</td>
<td>DeSnyder et al n = 777, 2014</td>
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<tr>
<td><strong>% No ink on tumor</strong></td>
<td>15%</td>
<td>99%</td>
</tr>
<tr>
<td><strong># Surgeons, year</strong></td>
<td>Parvez et al n = 1447, 2009</td>
<td>Morrow et al n = 342, 2014-15</td>
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<tr>
<td><strong>% No ink on tumor</strong></td>
<td>~18%</td>
<td>69%</td>
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<tr>
<td><strong># Surgeons, year</strong></td>
<td>Azu et al n = 318, 2005-07</td>
<td></td>
</tr>
<tr>
<td><strong>% No ink on tumor</strong></td>
<td>11%</td>
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M Morrow SABCS 12/7/2016
Have the Guidelines Changed Anything?

**Trends in Additional Surgery After Lumpectomy**

- **NCDB 2004-2010**
- **n = 253,052**
- Reoperation: 23%
- Reexcision: 62%
- Mastectomy: 38%

**Rates of Additional Surgery by Margin Status**

- **n = 1024**
- Marginal surgery rate:
  - Positive: 43%
  - Negative, >1mm: 30%
  - Negative, 1mm or less: 10%

Vilke L, JAMA Surg 2014;149:1296
Have the Guidelines Changed Anything?

Rates of Additional Surgery By Margin Status

Method: Review of pathology reports all patients having a second surgery (n = 509)
30% sample of single surgery cases (n = 507)

- Surgery for positive margins did not change over time
  p = .390

- Surgery for negative margins decreased from 25% in 2013 to 14% in 2015
  p = .055

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### Have the Guidelines Changed Anything?

**Re-Excision Rates**

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<th>Cedars-Sinai</th>
<th>MSKCC</th>
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<tr>
<td><strong>Pre-guideline</strong></td>
<td>n = 846</td>
<td>n = 1205</td>
</tr>
<tr>
<td></td>
<td>19%</td>
<td>21%</td>
</tr>
<tr>
<td></td>
<td>13%</td>
<td>15%</td>
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<tr>
<td></td>
<td><strong>p = .03</strong></td>
<td><strong>p = .006</strong></td>
</tr>
</tbody>
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**Chung A, Ann Surg Oncol**

2015;22(Suppl 3):5422

**Rosenberger L, Ann Surg Oncol**

2016;23:3239
Consequences of Margin Guidelines:
More Patients Intended for Lumpectomy do so with fewer surgeries and more preserve their breasts

- Indicators of earlier return to activities of daily living
- Lower rates of return trips to surgery
- Lower rates of mastectomies
- Improved cosmetic outcomes
- Decreased Healthcare Costs

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Margin Guidelines

* Meant to be “Guidelines”

* Individual Considerations for Complex Cases

* Patient Preferences play a significant factor in Final Management

* We continue to learn and will continue to evaluate our treatments in a Multi-Disciplinary approach

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THANK YOU!

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