Comparing Margin Diameter and Margin Index in Predicting Residual Disease Following Partial Mastectomy, P85

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Background:

- Breast conserving surgery combined with radiation therapy standard treatment in early stage breast cancer
- Long term survival equivalent to mastectomy
- 20-60% of patients require a second operation because of inadequate margins
- Local recurrence impacted by many factors
- Strongest predictor

Surgical Margin:

- No consensus on definition of negative margin
- Currently 2-3 mm up to 5 mm for DCIS

Trial	Margin
NSABP B-06	Tumor on Ink
NIH and Danish	Did not require assessment
EORTC 10801	1 cm
French	2cm
Milan	2-3cm

Purpose:

- To determine if definition of negative margin should be redefined
- Use margin distance to stratify risk of residual disease

Margin Index:

- Margin Index = closest margin (mm)/tumor size (mm) x 100
- 475 patients stage I-II treated with BCT
- Underwent re-excision for close margins
- 102 (21%) had residual disease on re-excision
- Optimum Margin Index ≥5
- Sensitivity 85% and Specificity 73%
- Identify patients who need re-excision

Methods:

- Single institution review
- Retrospective analysis of our database of 95 patients who underwent re-excision from 2008-2009
- Tumor size was assessed microscopically
- Closest margin distance was used
- Margin Index was calculated
- A receiver operating characteristic curve was created

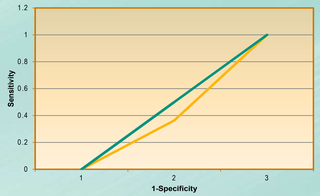
Patient Characteristics:

- 217 patients; 95 had re-excision (43%)
- 88 had sufficient data for QI study
- 41 patients had close margins
- Stage I and II disease
- 8 (19.5%) positive on re-excision
- Median Age: 55
- Median Tumor Size: 2 cm
- Average margin distance 0.91 mm
- Median Margin Index 2.78

Margin	Total Number of Patients	Patients with Residual Disease on Re-excision	% Patients with Residual Disease on Re-excision
<1mm	28	6	21%
1-2mm	7	1	14%
>2mm	6	1	16%

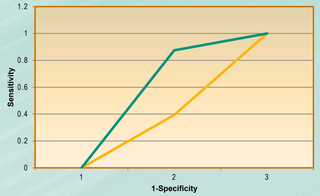
Margin	Positive Disease on Re-excision	Negative Disease on Re-excision	Total Patients
Margin Index <5	4	12	16
Margin Index ≥5	4	21	25
Total Patients	8	33	41

Receiver Operating Characteristic Curve for Margin Index ≥5



Number of Cases	41
Number Correct	25
Accuracy	61%
Sensitivity	50%
Specificity	63.3%
Area Under the Curve	0.568

Receiver Operating Characteristic Curve for Margin Index ≥3



Number of Cases	41
Number Correct	27
Accuracy	65.9%
Sensitivity	87.5%
Specificity	60.6%
Area Under the Curve	0.741

Conclusions:

- Not a superior predictor over margin distance
- Limitations
  - Small Sample Size
  - Retrospective
  - Selection Bias
  - Small number of patients margin >1mm
- Continue to use current treatment guidelines
- Further research to determine adequate margins