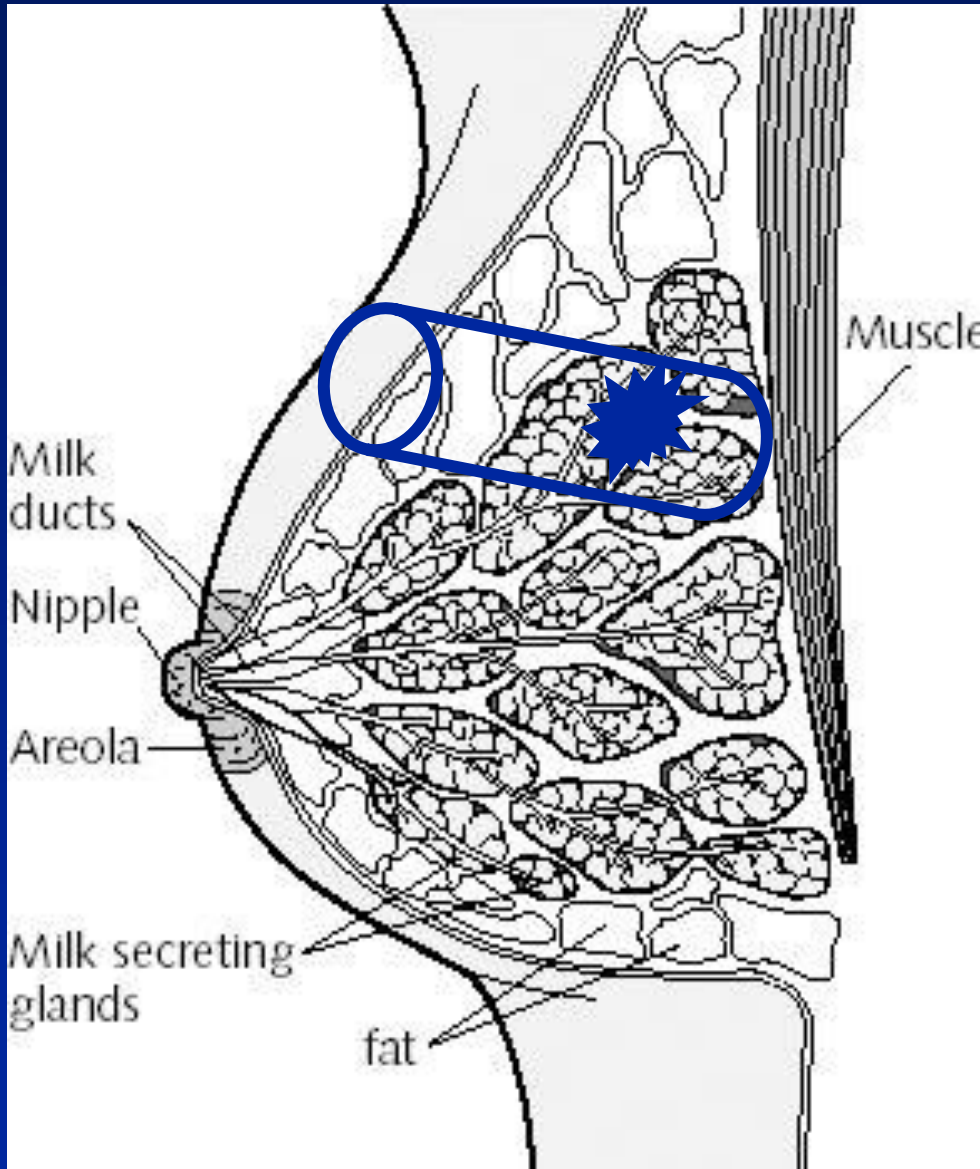


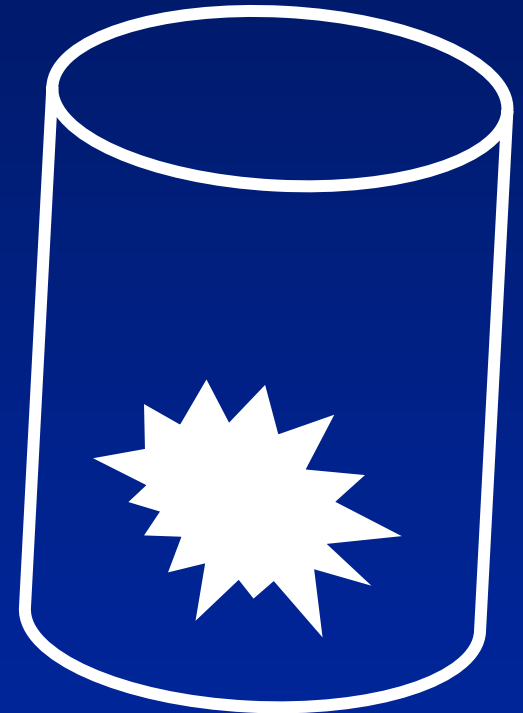
# Is the anterior margin relevant in (skin-sparing) mastectomies?

Sarah E Pinder

# Therapeutic Breast Surgery



**Anterior = skin**




**Posterior = fascia**

# Involved anterior margins after breast conserving surgery: Is re-excision required?

R. Mullen<sup>a,\*</sup>, E.J. Macaskill<sup>a</sup>, A. Khalil<sup>a</sup>, E. Elseedawy<sup>a</sup>, D.C. Brown<sup>a</sup>, A.C. Lee<sup>a</sup>,  
C.A. Purdie<sup>a,b,c</sup>, L.B. Jordan<sup>b,c</sup>, A.M. Thompson<sup>a,b</sup>

- **1667 patients**
- **<1mm defined as involved**
- **170 involved margins – most commonly anterior (52), posterior (39) and inferior (31)**
- **144 underwent re-excision**
- **2 of 49 (4%) with anterior margin re-excision had residual disease**
- **Conclusion – re-excision of anterior margin rarely yields further disease**

# Comparing long-term local recurrence rates of surgical and non-surgical management of close anterior margins in breast conserving surgery

George Boundouki<sup>1</sup>  · Joseph Ryan Wong Sik Hee<sup>1</sup> · Natalie Croghan<sup>1</sup> · Katie Stocking<sup>2</sup> · Andrew Pieri<sup>3</sup> · Adam Critchley<sup>3</sup> · Cliona C. Kirwan<sup>1,4</sup> · James R. Harvey<sup>1,4</sup>

Breast Cancer Research and Treatment (2019) 176:311–319

<https://doi.org/10.1007/s10549-019-05242-8>

- **Retrospective, 2 centres**
- **Close margin defined as within 2mm**
- **6922 patients; 277 close anterior margin (4%)**
- **220 non-surgical management; 12 local recurrence (5.5%)**
- **57 re-excision; 4 local recurrences (7%)**
- **LR-free survival:**
  - **5 years - 98.2% in surgical vs 97.2% in non-surgical group**
  - **10 years - 92.2% in surgical vs 93.3% in non-surgical group**

**Majority of patients will have breast RT  
following WLE (+/- systemic therapy) - not  
necessarily true following SSM**

# **SSM & immediate breast reconstruction, early-stage cancer**

- **Prospective, M. D. Anderson Cancer Center**
- **437 SSMs for 372 invasive T1/T2 breast cancers**
- **23 LRs, 6.2% (23/372); 22 (96%) presented as palpable skin-flap masses**
- **Median time to recurrence 25 months (3 to 98)**
- **Complete local control of recurrent disease in 17 patients (74%)**
- **“Because LR rate with SSM is low and likelihood of local control and survival is high, SSM and IBR is an acceptable treatment option for early stage breast cancer”**

**Newman LA et al. Ann Surg Oncol 1998;5:620-6**

# Residual glandular tissue after SSM

- 42 breast cancer patients; before surgery, 2 lines drawn on breast skin, representing SSM & conventional mastectomy incisions
- After surgery, skin flap that would remain after SSM removed
- Residual breast tissue in 59.5%
- Presence of TDLUs significantly associated with skin flaps >5 mm thick
- Residual disease in 9.5% (2 IDC, 1 DCIS, 1 LCIS); associated with skin flaps >5 mm thick and presence of TDLUs

# Residual glandular tissue after SSM

Variable	Skin thickness (mm)			
	≤5 (n = 26)		> 5 (n = 16)	
	n	%	n	%
Residual neoplasm				
Absence	26	100.0	12	75.0
Presence	0	.0	4	25.0
Number of TDLUs				
0	14	53.8	3	18.8
1–10	7	26.9	4	25.0
> 10	5	19.2	9	56.3
TDLUs				
Absence	14	53.8	3	18.8
Presence	12	46.2	13	81.3

TDLU, terminal ductal lobular unit.

<sup>a</sup>Fisher's exact test.



## Do surgical margins matter after mastectomy? A systematic review

James Bundred <sup>a</sup>, Sarah Michael <sup>b,c</sup>, Sarah Bowers <sup>b,c</sup>, Nicola Barnes <sup>c</sup>, Yasmin Jauhari <sup>d</sup>, Dafydd Plant <sup>a</sup>, Thomas Maishman <sup>e</sup>, Ramsey Cutress <sup>e,f</sup>, Bernd Holleccek <sup>g,h</sup>, David Dodwell <sup>i</sup>, Nigel Bundred <sup>b,c,\*</sup>

European Journal of Surgical Oncology 46 (2020) 2185–2194

- **Systematic review**
- **34 studies, 34833 patients**
- **Positive margins associated with LR in MVA (HR 2.64)**
- **After SSM, positive margins associated with LR (HR 3.40)**
- **In 4 studies reporting distant recurrence, involved margins higher risk HR 1.53**

**Not only the anterior margin.....?**

# **LR after mastectomy for pure DCIS with close or positive margins: A meta-analysis**

- **Meta-analysis of 12 studies, 2902 patients, mean follow-up 86 months**
- **LR rate 5.3% for positive or close margins vs 1.6% for negative margins**
- **Positive or close margins 3.72x risk of LR of those with negative margins**
- **Positive margins 2.91x risk of LR of those with close margins**
- **Kim D et al. J Cancer Res Ther. 2020;16:1197-1202**

**INTERNATIONAL COLLABORATION ON  
CANCER REPORTING (ICCR)**

**<http://www.iccr-cancer.org/datasets/published-datasets/breast>**

**“There is an assumption that all breast tissue will be resected in patients undergoing a complete mastectomy and that pathological examination of margins is of limited value.**

**However, there is evidence that margin involvement can increase the risk of local recurrence after mastectomy**

**..... modification of the comprehensive margin analysis and reporting recommendations for wide local excision ..... adopted for reporting of mastectomy specimens to include a statement of the distance to the closest margin(s) or site(s) of margin involvement.”**

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# INTERNATIONAL COLLABORATION ON CANCER REPORTING (ICCR)



## MARGIN STATUS<sup>i</sup> (Note 11)

(For complete mastectomy specimens)

Cannot be assessed, *specify*

### Invasive carcinoma

Involved, *specify margin/sites of involvement*

Not involved

Specify closest margin, if possible

Distance of invasive carcinoma to closest margin

 mm (< or > may be used)

Cannot be determined, *specify*

## DCIS<sup>j</sup>

Involved, *specify margin/sites of involvement*

Not involved

Specify closest margin, if possible

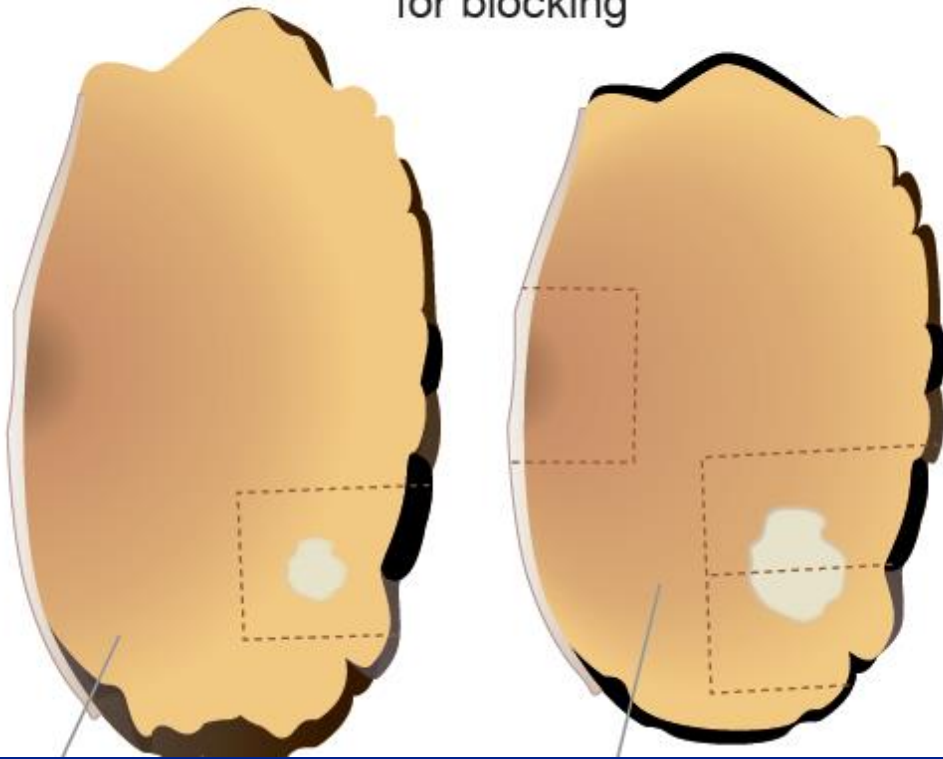
Distance of DCIS to closest margin

 mm (< or > may be used)

Cannot be determined, *specify*

<sup>i</sup> Core for all wide local excision specimens, similar non-complete mastectomy and some (refer to Note) complete mastectomy specimens.

slices are sub-divided  
for blocking



MEDIAL

SLICE  
8

0cm

5



# Updated RCPATH guidelines (draft)

- “The margins of a mastectomy specimen should be examined histologically when the tumour is very close to or abutting a margin
- In skin-sparing mastectomies the anterior margin is relevant and should be sampled if the lesion is close to that margin
- In nipple-sparing mastectomies the nipple area should be marked by the surgeon and should be sampled as a shave from that area”

# Summary

- **Similar local recurrence rates for SSM and non-SSM for invasive cancer**
- **Margin widths, adjuvant treatment and case selection mostly unreported, or unclear, in the literature**
- **Anterior aspect (if not skin) is a 'real' margin**
- **We need to pay more attention to margins of mastectomies than (many of us) have in the past**
- **Different approaches to sampling and examination**
- **'Adequate' margin width?**
- **How to correlate clinically/pathologically the area and extent of margin involvement?**
- **How to manage involved margins clinically?**