

5-year outcomes of nipple-sparing versus skin-sparing mastectomy: No difference in local-regional recurrence or survival

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Background

- Nipple sparing mastectomy (NSM) has become increasingly popular for breast cancer treatment and prevention.
- Many patients and surgeons prefer the cosmetic result achieved by preservation of the nipple and areola.
- The safety of skin-sparing mastectomy (SSM) in breast cancer patients is well-established and there is increasing evidence of the safety of NSM for cancer treatment.
- There is little data directly comparing outcomes of SSM and NSM.

Bilateral Nipple-Sparing Mastectomy*



Bilateral Nipple-Sparing Mastectomy*



Bilateral Skin-Sparing Mastectomy*



Bilateral Skin-Sparing Mastectomy*

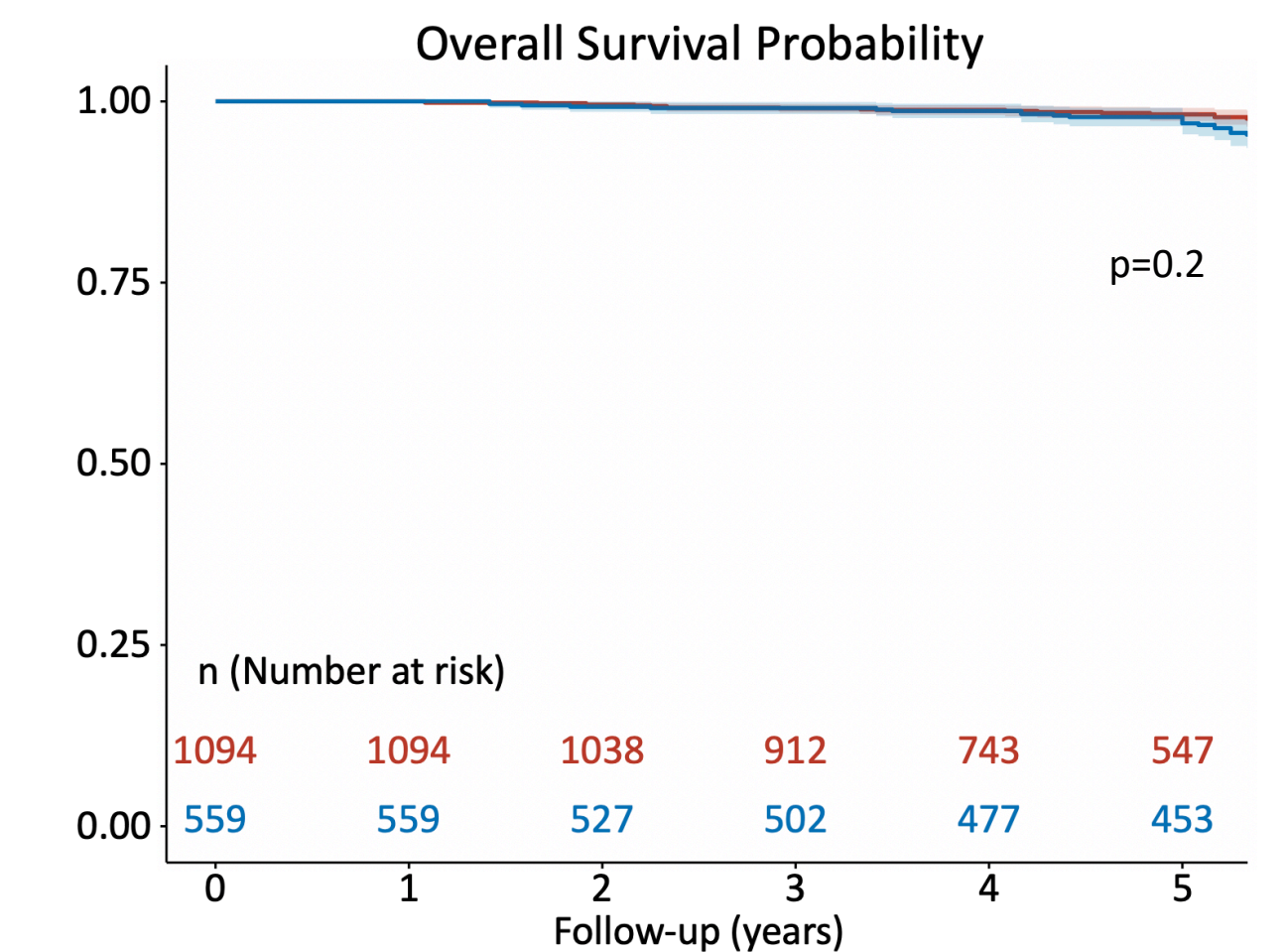
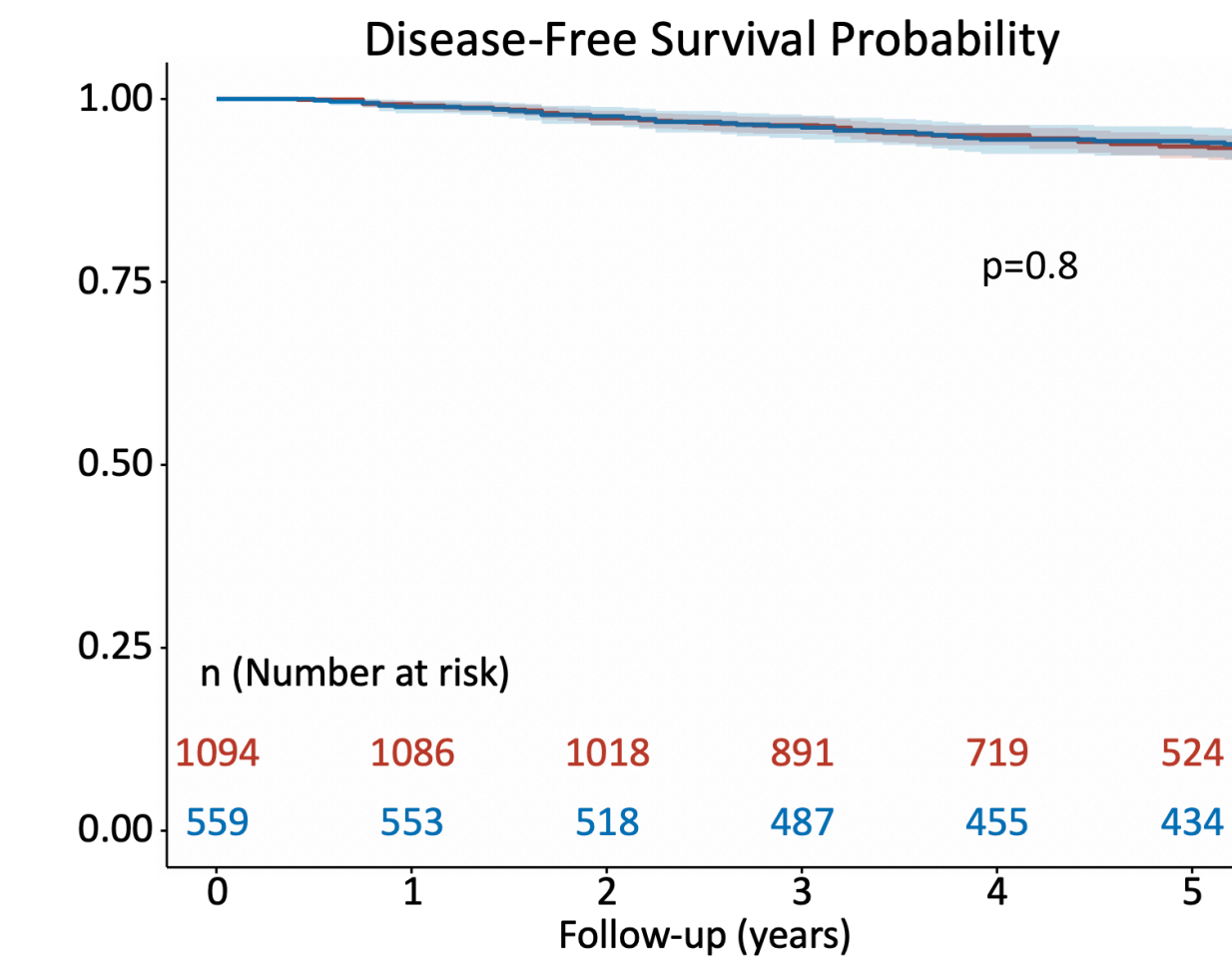
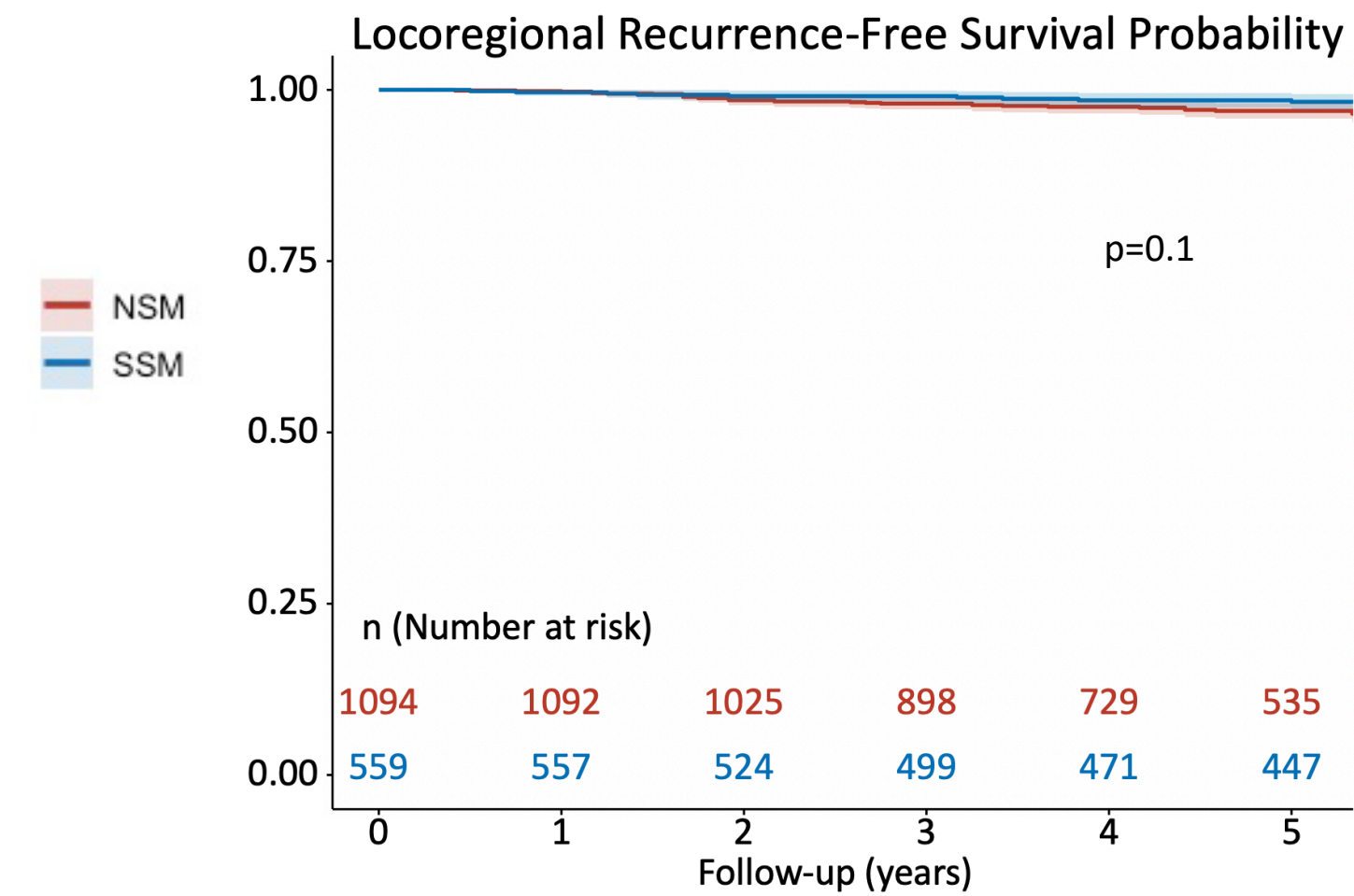


*Photos: Heather R. Faulkner, MD, MPH

Methods

- We performed IRB-approved review of patient and tumor characteristics, treatments, and follow-up data in our institution's prospective database of NSM and SSM performed for stage 0-III breast cancer.
- Eligibility for NSM included no radiologic or clinical evidence of direct nipple involvement by tumor, and final nipple position expected to be acceptable.
- Although use of NSM increased over time, during the 2011-2013 timeframe from which sequential SSMs were evaluated, some surgeons still preferentially performed SSM.
- Patients were excluded if they had no reconstruction, or if they had less than 12 months follow-up.

Results



Tumor characteristics, treatment, and patient outcomes

	Nipple-Sparing Mastectomy 1094 breasts, 1002 patients Median follow-up = 60 months	Skin-Sparing Mastectomy 559 breasts, 504 patients Median follow-up = 82 months	p-value
Tumor characteristics, n (%)			
IDC ± DCIS	657 (60.1%)	327 (58.5%)	0.54
ILC ± DCIS	128 (11.7%)	50 (8.9%)	0.09
Pure DCIS	254 (23.2%)	150 (26.8%)	0.11
DCIS + microinvasion	31 (2.8%)	20 (3.6%)	0.41
Invasive Mammary/Other	24 (2.2%)	12 (2.2%)	0.95
ER +	915 (83.6%)	458 (81.9%)	0.38
PR +	810 (74.0%)	411 (73.5%)	0.82
HER2+	138 (16.4%)	63 (15.4%)	0.64
Tumor grade, n (%)			
1	118 (10.8%)	91 (16.3%)	0.002
2	557 (50.9%)	263 (47.0%)	0.14
3	413 (37.8%)	198 (35.4%)	0.35
Unknown	6 (0.5%)	7 (1.3%)	0.13
Invasive tumor size, cm, mean (range)	1.9 (0.05-12.2)	2.0 (0.1-15.0)	0.27
Stage, n (%)			
0	252 (23.0%)	148 (26.5%)	0.12
I	473 (43.2%)	207 (37.0%)	0.015
II	294 (26.9%)	160 (28.6%)	0.45
III	75 (6.9%)	44 (7.9%)	0.45
Positive axillary nodes	215 (19.6%)	121 (21.6%)	0.34
Treatment, n (%)			
Neoadjuvant Systemic Therapy	153 (14.0%)	48 (8.6%)	0.0015
Adjuvant Chemotherapy	412 (37.7%)	218 (39.0%)	0.60
Adjuvant Endocrine Therapy	692 (63.3%)	352 (63.0%)	0.91
Radiation Therapy	251 (22.9%)	135 (24.2%)	0.58
Outcomes, n (%)			
Recurrence			
Local-regional only		NSM Follow-Up = 60 Months	SSM Follow-Up = 82 Months
Local-regional only	34 (3.1%)	12 (2.1%)	---
Nipple	2	N/A	---
Distant only	29 (2.7%)	28 (5.0%)	---
Local-regional and distant	5 (0.5%)	1 (0.2%)	---
Kaplan-Meier Estimated 5-year locoregional recurrence-free survival	96.9%	98.3%	0.1
Kaplan-Meier Estimated 5-year disease-free survival	93.5%	94.0%	0.8
Kaplan-Meier Estimated 5-year survival	98.2%	97.0%	0.2

- From a prospective database of 3242 NSM performed at our institution from 6/07-7/19, we identified 1094 sequential NSM performed for cancer in 1002 patients from 06/07-4/17, with a median follow-up of 60 months, and mean age of 49 years (range 20-78).
- From a prospective database of 939 SSM performed at our institution from 01/10-12/13, we identified 559 sequential SSM performed for cancer in 504 patients from 01/10-12/13, with a median follow-up 82 months, and mean age of 51 years (range 19-80).
- Tumor characteristics and adjuvant treatments were similar in nipple-sparing and skin-sparing patients.
- Local-regional and distant recurrence rates were low in nipple-sparing and skin-sparing patients.
- Of the 1094 nipple-sparing mastectomy procedures for cancer, 2 patients had a nipple areola complex recurrence.
- There was no significant difference in 5-year locoregional recurrence-free survival, disease-free survival, or overall survival between NSM and SSM patients.

Conclusions

- Both nipple-sparing and skin-sparing patients experienced low rates of locoregional and distant recurrence at 5-years median follow-up.
- The absolute rate of tumor recurrence in the nipple was 0.2%.
- Nipple sparing mastectomy is a safe alternative to skin-sparing mastectomy for patients with breast cancer.**

Acknowledgements

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