



# Single-Institution Experience with Nipple-Sparing Mastectomy in BRCA 1 and 2 Patients

D Henry MD; M Demers MD; J Feiner MD; M Kahky MD; R Klein MD;  
K Lee MD; J Smith MD; E Mamounas MD



Orlando Regional Medical Center and UF Health Cancer Center at Orlando Health, Orlando, Florida

## BACKGROUND

Nipple-sparing mastectomy (NSM) has gained momentum as a cosmetically desirable, but also oncologically safe surgical option for appropriately selected breast cancer patients and those who are at significantly high risk for developing the disease.

## OBJECTIVE

We sought to evaluate our institutional experience following NSM in a high-risk cohort of patients with BRCA 1 and 2 germline mutations.

## METHODS

A retrospective chart review of all NSM patients treated at our cancer center between 2009 and 2015 was performed, and those with BRCA mutations were selected for study inclusion. Patient demographics, tumor characteristics, type of reconstruction, postoperative complications, recurrences and second primary events were reviewed.

## RESULTS

Twenty-four patients with BRCA 1 and 2 germline mutations underwent 46 NSMs. The mean age was 41.7 (24-67 years). There was one active smoker, and mean BMI was 24.5 (19.4-38.8 BMI). Eight patients (33%) had BRCA 1 mutations and 16 patients (67%) had BRCA 2 mutations. Eighty-three percent of NSMs were prophylactic and 17% were therapeutic.

Patient Demographics n=24	
Age (years)	41.7 (24-67)
BMI (kg/m <sup>2</sup> )	24.5 (19–39)
Follow-up (months)	16 (3-47)
BRCA 2	16
BRCA 1	8
Recurrences	2

Nipple-Sparing Mastectomies n=46		
	Therapeutic n=8	Prophylactic n= 38
Previous surgery	3	
Tumor size (mm)	18.5 (8-37)	
Invasive ductal carcinoma (%)	63	
Nipple loss (%)		7

For therapeutic NSMs, mean tumor size was 18.5 mm (8-37 mm), and 5 of 8 (63%) tumors were invasive ductal carcinoma. No incidental cancer was found in any prophylactic pathology specimen. Atypical ductal and lobular hyperplasia was found in 4 of 38 (11%) prophylactic NSMs. Of the 8 therapeutic NSMs, 3 had prior lumpectomy for breast cancer 5 months to 1.4 years earlier (including prior adjuvant XRT and chemotherapy). Seventy-five percent of patients underwent implant-based reconstruction, 8% had a free flap, and 17% had tissue expanders at follow-up.

The overall postoperative complication rate was 15%. Three out of 46 (7%) breasts developed nipple necrosis resulting in nipple loss. Mean follow-up was 16 months (3-47 months). There were no local recurrences in the nipple areolar complex of therapeutic NSMs. There were 2 cancer events (8%), both in the therapeutic cohort of patients (1 loco-regional recurrence of the chest wall/axilla and 1 brain metastasis). There were no breast cancer events in the prophylactic NSM cohort.

## CONCLUSIONS

Although our patient cohort is small and mean follow-up is short, our results are concordant to those from similar previous reports suggesting that NSM is an oncologically safe therapeutic and prophylactic procedure for patients with germline BRCA 1 and 2 mutations. Based on our findings and similar reports, we continue to offer NSM to the subset of breast cancer and high-risk patients with germline BRCA 1 and 2 mutations.