Total skin-sparing mastectomy in BRCA mutation carriers
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ABSTRACT

BACKGROUND: Total skin-sparing mastectomy (TSSM) with preservation of the nipple-areolar complex skin has become increasingly accepted as an oncologically safe procedure for both prophylactic and therapeutic indications. The goal of this study was to evaluate the oncologic outcomes after TSSM in BRCA mutation carriers.

METHODS: We identified 53 BRCA-positive patients who underwent bilateral TSSM for prophylactic (26 patients) or therapeutic indications (27 patients) from 2001 to 2011. Cases were age-matched (for prophylactic cases) or age- and stage-matched (for therapeutic cases) with non-BRCA-positive patients who underwent bilateral TSSM during this time period. Outcomes included tumor involvement of the resected nipple tissue, the development of new breast cancers in patients who underwent bilateral risk-reducing TSSM, and the development of any local-regional recurrence in patients who underwent TSSM.

RESULTS: Outcomes from 212 TSSM procedures in 53 cases and 53 controls were analyzed. In patients undergoing TSSM for prophylactic indications, in situ cancer was found in 1 (1.9%) of the nipple specimens in the BRCA-positive patients vs. 2 specimens (3.8%) in the non-BRCA-positive cohort (p = 0.49). At a mean follow-up of 43 months, there were no local-regional recurrences in the BRCA-positive cohort. In patients undergoing TSSM for therapeutic indications, in situ or invasive cancer was found in 0 of the nipple specimens in the BRCA-positive patients vs. 2 specimens (3.7%) in the non-BRCA-positive cohort (p = 0.49). At a mean follow-up of 33 months, there were no local-regional recurrences in the BRCA-positive cohort.

CONCLUSIONS: TSSM is an oncologically safe procedure in BRCA-positive patients, as evidenced by the low rates of tumor involvement of the nipple tissue and local-regional recurrence after therapeutic mastectomy. In BRCA-positive patients undergoing TSSM as a risk-reducing strategy, five-year follow-up demonstrates no increased risk for the development of new breast cancers; longer-term follow-up is anticipated to further confirm its safety.

RESULTS

- Review of prospectively-collected database of patients undergoing TSSM and immediate reconstruction
- Determine rates of tumor involvement of resected nipple tissue after TSSM in BRCA+ patients
- Assess local-regional recurrence rates after therapeutic TSSM in BRCA+ patients
- Assess rates of new breast cancers after prophylactic TSSM in BRCA+ patients

Table 1. Patient characteristics

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<th>PROPHYLACTIC</th>
<th>THERAPEUTIC</th>
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<tr>
<td></td>
<td>BRCA+ (n = 26)</td>
<td>Non-BRCA+ (n = 26)</td>
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<tr>
<td>Mean age (years)</td>
<td>41.2</td>
<td>43.1</td>
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<td>Mean follow-up (months)</td>
<td>37.1</td>
<td>49.8</td>
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<tr>
<td>Mean follow-up (months): subgroup with minimum 2 years follow-up</td>
<td>49.4</td>
<td>53.1</td>
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- TSSM (with resection of all breast and nipple tissue) is oncologically safe in BRCA+ patients for prophylactic and therapeutic indications in the context of prior studies on mastectomy in BRCA+ patients

- TSSM is associated with low rates of tumor involvement in resected nipple specimens in BRCA+ and non-BRCA+ patients

- Low recurrence rates after TSSM in BRCA+ patients are anticipated to be further supported with longer-term follow-up, mirroring outcomes after SSM

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