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Nipple-sparing mastectomy in young patients: evaluating oncologic efficacy and prophylactic benefits

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Objective: To evaluate the indications, complication rates, and outcomes of very young breast cancer patients undergoing nipple-sparing mastectomy (NSM). **Methods:** This is a retrospective review of medical records and updated patient follow-ups during routine appointments. Thirty breast cancer patients aged <30 years who underwent NSM with immediate breast reconstruction were assessed, between January 2007 and December 2024. **Results:** Indications for NSM included early breast cancer (n=18), ipsilateral recurrence (n=1), compromised margins after previous surgery (n=1), and risk reduction (n=10). Notably, 90% underwent bilateral surgery. In risk-reducing cases, seven patients carried BRCA mutations, one had a p53 mutation, and two had a strong family history of breast cancer with breast atypia. Among therapeutic NSM, one patient was diagnosed with ductal carcinoma in situ, and 19 with invasive ductal carcinoma, being 42.1% luminal tumors, 5.3% luminal/ human epidermal growth factor receptor-type 2 (HER2), 21% HER2, and 31.6% triple negative. Neoadjuvant chemotherapy was given to 73.7% (n=14), with 42.8% (n=6) achieving a pathological complete response, while five patients received adjuvant chemotherapy, and 80% underwent radiotherapy. Out of 57 NSM performed, minor postoperative complications were observed, including one (1.7%) hematoma needing drainage and one (1.7%) infection. Over a mean follow-up of 45 months, no patients undergoing risk-reducing NSM developed breast cancer. Two patients in the therapeutic group experienced recurrence: one (5%) in the ipsilateral axilla and one (5%) in contralateral breast. The patient with contralateral recurrence did not receive bilateral NSM as part of treatment. **Conclusion:** These findings highlight the aggressive nature of breast cancer in very young patients, suggesting that combining neoadjuvant chemotherapy with NSM seems to be an effective strategy for very young patients. Additionally, NSM demonstrated promising risk reduction outcomes in this high-risk group.

Keywords: subcutaneous mastectomy; postoperative complications; breast neoplasms; recurrence.