Surgical de-escalation after neoadjuvant chemotherapy in breast cancer: a real-world single breast unit experience

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Abstract

Background: Neoadjuvant chemotherapy (NACT) has increasingly influenced surgical decision-making in breast cancer. Beyond systemic control, NACT may enable tumor downstaging and support less extensive breast and axillary surgery. Tumor biology plays a key role in predicting treatment response and guiding surgical strategies.

Methods: We conducted a retrospective analysis of breast cancer patients treated with neoadjuvant chemotherapy followed by surgery at a single breast unit between 2016 and 2018. Clinicopathological characteristics, molecular subtype, treatment response, and surgical management were evaluated.

Results: Fifty-seven patients were included (mean age 58 years). Molecular subtypes were Luminal A (12%), Luminal B (24%), HER2-positive luminal (30%), HER2-enriched (16%), and triple-negative breast cancer (14%). Neoadjuvant chemotherapy enabled breast-conserving surgery in 39% of patients. Among patients presenting with clinically positive axillary nodes at diagnosis, nodal downstaging after systemic therapy allowed sentinel lymph node biopsy in selected cases, potentially avoiding axillary lymph node dissection.

Conclusions: Tumor biology strongly influences response to neoadjuvant chemotherapy and subsequent surgical management. Neoadjuvant therapy may support personalized surgical strategies and facilitate safe de-escalation of both breast and axillary surgery in selected patients.