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895 – Involvement of nipple-areolar complex dermal graft in breast cancer: clinical, radiological, and pathological correlations in mastectomy specimens – preliminary results from 28 patients

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Introduction: As breast cancer surgery has evolved toward less invasive approaches, breast-conserving surgery and nipple-sparing mastectomy are increasingly adopted to improve quality of life. Preservation of the nipple-areolar complex (NAC) has important aesthetic and functional value. When oncologic safety precludes pedicled preservation, NAC grafting may be considered. However, the oncologic safety of this approach remains insufficiently investigated.

Objective: To analyze clinical, radiological, and pathological factors associated with NAC graft involvement in mastectomy specimens and to evaluate the diagnostic accuracy of intraoperative retroareolar margin assessment compared with final histopathology.

Methods: This was a prospective cohort study with a planned sample of 232 patients undergoing total mastectomy. The NAC was harvested as a full-thickness dermal graft before mastectomy. Intraoperative frozen-section analysis of the retroareolar margin was performed. Specimens were formalin-fixed, paraffin-embedded, stained with hematoxylin-eosin, and evaluated by pathologists. Histopathological results were compared with intraoperative, clinical, and radiological findings. Written informed consent was obtained from all patients.

Results: To date, 28 women have been included. Invasive ductal carcinoma comprised 68% of cases, and most tumors were grade II–III (78%). Hormone receptor positivity was observed in 75% (estrogen receptor) and 61% (progesterone receptor), while human epidermal growth factor receptor 2 (HER2) positivity occurred in 12%. Locally advanced disease (cT3–cT4) occurred in 64%, with 57% presenting axillary and multifocal involvement. Cutaneous findings included hyperemia (25%), edema (46%), and ulceration (4%). Neoadjuvant chemotherapy was delivered to 54% of patients. Clinical tumor response was complete in 20%, while most showed partial reduction (53%). Radiologic tumor size at diagnosis ranged from 4.4–6.6 cm. Lesion-to-NAC distance ranged from 2.5–3.2 cm. NAC involvement was observed in 14% of patients. Intraoperative frozen-section analysis of the retroareolar margin showed 92.9% accuracy, outperforming magnetic resonance imaging (88%), mammography (81.5%), and ultrasound (85.7%) in predicting NAC involvement.

Conclusion: This study may help guide the safe clinical application of NAC grafting in carefully selected patients.

Ethics: Research Ethics Committee Approval (CAAE 81565624.8.0000.0071).

Registry: Brazilian Registry of Clinical Trials (ReBEC), RBR-6n3crpc.

Keywords: breast neoplasms; mastectomy; nipples; skin transplantation.