Chirurgia (Bucur). 2026 November, Online Ahead of Print
http://dx.doi.org/10.21614/chirurgia.3406

Could Intraoperative Frozen Section Replace Preoperative Core Needle Biopsy in Selected Small Breast Lesions? A Hypothesis for Prospective Evaluation

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Abstract

Background: Core needle biopsy (CNB) remains the standard diagnostic approach for suspicious breast lesions, providing preoperative histological confirmation and biological characterization essential for treatment planning. However, the increasing detection of small, clinically localized breast cancers raises the question of whether a separate preoperative biopsy is indispensable in every carefully selected patient already considered suitable for upfront surgery. Objective: To explore the hypothesis that intraoperative frozen-section examination could potentially replace a separate preoperative CNB in a narrowly defined subgroup of patients with small, highly suspicious, clinically node-negative breast lesions.

Discussion: A one-stage diagnostic and therapeutic pathway might be considered for prospective investigation when multidisciplinary assessment indicates that upfront surgery would remain the preferred initial treatment and preoperative tumour biology is unlikely to alter therapeutic sequencing. Potential advantages include fewer separate procedures and healthcare encounters. Nevertheless, the proposed approach presents important limitations, including inconclusive frozen-section findings, delayed receptor characterization, possible additional surgery, and the risk of inappropriate treatment sequencing. Preoperative CNB remains essential whenever tumour biology may influence neoadjuvant treatment decisions.

Conclusion: Intraoperative frozen-section examination should not be considered an established alternative to CNB. Its potential role in highly selected patients warrants prospective comparative investigation to assess diagnostic accuracy,
oncological safety, patient-reported outcomes, and healthcare resource use.

Keywords: frozen section, core needle biopsy, breast cancer, early breast cancer, breast surgery