Evaluating the accuracy of intraoperative frozen section with final pathology in sentinel node dissection following neoadjuvant chemotherapy in cN1 breast cancer patients

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Introduction

- Frozen section analysis (FSA) after sentinel node dissection is routine for management of patients with known nodal metastasis after neoadjuvant chemotherapy
- A positive FSA indicates the need for completion axillary lymph node dissection (ALND)
- Utility of FS in context of post-neoadjuvant chemotherapy is of concern due to false negative results

STUDY AIM:
Evaluate accuracy of FSA in breast cancer patients with cN1 disease.

Methods

- Retrospective review of single institution database including:
  - Breast cancer patients with cT1-3N1-2M0 disease from January 2017-October 2023
- FS analysis results were compared with final pathology to assess
  - Accuracy
  - Positive predictive value
  - Negative predictive value

Results

- FS analysis revealed an overall accuracy of 83.02%
  - PPV was 100%
  - NPV was 71.0%
- Completion of axillary dissection in 21/22 positive cases
  - Additional positive nodes only in 6 cases
- 9 cases of false negative between FS and final pathology
  - 8 cases had low-volume disease
  - All managed non-operatively

Discussion

- Frozen section analysis in sentinel node dissection post-neoadjuvant chemotherapy demonstrates reasonable accuracy and positive predictive value
- High incidence of no further nodes being identified in cases where ALND was performed after a positive FSA
  - Absence of axillary reintervention in false negative FSA cases
  - Suggests opportunity to explore when ALND can be safely omitted

Future Directions

- ALND is associated with post-operative morbidity1
- Identify predictors of low-volume residual nodal disease
- Explore data in larger subset

References