

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

David Chen BS¹, Madeline Higgins MD², Salvador Rodriguez Franco MD², Colleen Murphy MD², Nicole Christian MD², Sarah EA Tevis MD², Gretchen Ahrendt MD²

1. University of Colorado School of Medicine

2. Department of Surgery, University of Colorado Anschutz Medical Campus



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

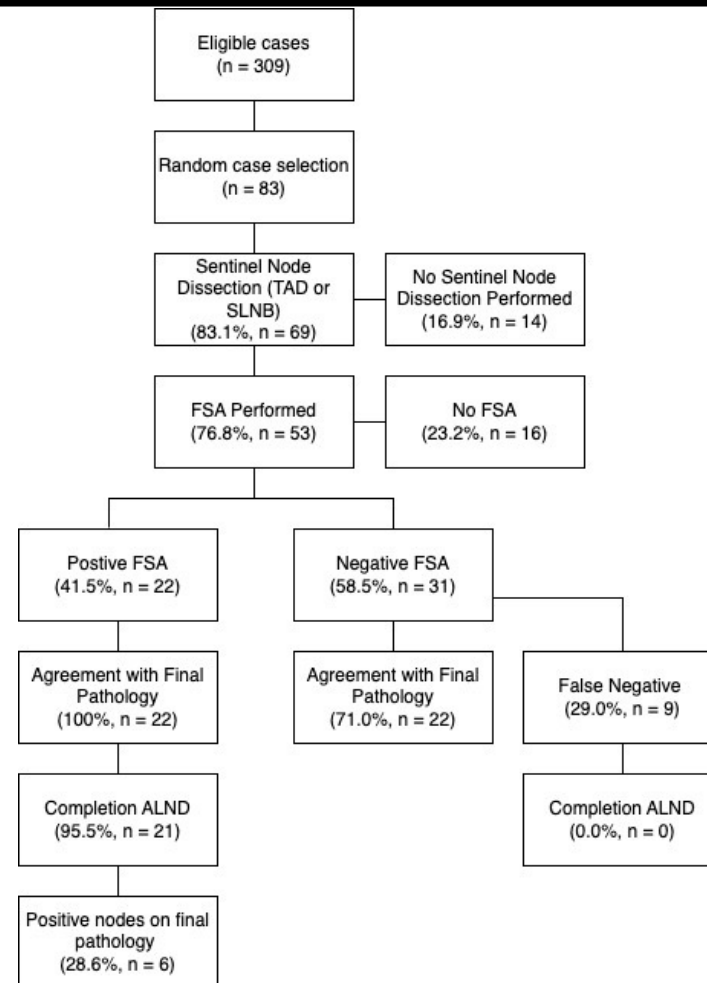
STUDY AIM:

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

1. Ernst MF, Voogd AC, Balder W, Klinkenbijn JH, Roukema JA. Early and late morbidity associated with axillary levels I-III dissection in breast cancer. *J Surg Oncol.* Mar 2002;79(3):151-5; discussion 156. doi:10.1002/jso.10061