Background
In our community hospital, Intraoperative Biopsy (IOB) is not always available, and when it is, it uses a significant amount of operating room (OR) minutes. With only one pathologist working in IOB outside the OR, availability and time spent in IOB are concerning issues.

Objective
Our primary objective is to evaluate whether measuring specimen margins with intraoperative ultrasonography (US) could be performed faster than IOB and even replace IOB when this is not available. The second aim is to improve surgical accuracy of palpable and non-palpable breast cancer excision in order to obtain clear margins.

Materials and methods
26 female patients undergoing breast-conserving surgery (BCS) for palpable or non-palpable, T1 or T2 invasive breast cancer were recruited between August 2016 and October 2017. Data included patient demographics, tumor localization and biology and US tumor diameter measured in the OR previous to surgery. Once the tumor was excised, the margins of the six faces of the specimen were measured and registered with US. All specimens were oriented by sutures placed by the surgeon. The IOB tumor diameter and histological margin status of each surface were documented. Time was recorded since the specimen left the OR until the pathologist reported results. Margin length results were compared among the records provided by US, IOB and the final pathology report.

Results
154 margins were finally evaluated. In two cases the anterior face was the skin.

- Size of tumor by US: 1.9 cm
- Size of tumor by pathology: 1.8 cm
- By US: 5 (3.2%) margins were positive and 47 (30.5%) had 3mm or less of clear margins. Which coincides with IOB results. In these cases, an additional margin shaving was performed.
- None margin were negative with US and positive in IOB.
- 8 margins seemed closer with US rather than IOB.
- An average of 22 minutes was spent in IOB compared to 3.5 minutes of US specimen measuring.
- 102 margins (not shaving was performed), 6mm was the average measured by US and 7.5mm by IOB:
- All patients had negative margins at final pathology, none need re-excision.

Conclusion
The use of intraoperative US to measure specimen margins optimizes surgical accuracy when IOB is not available and saves OR time when the pathologist is not present in the OR. Margin status was improved, and re-excision was not needed. The technique is effective, simple, and non-invasive, requiring no additional resources for obtaining adequate resection margins.

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