Breast Tissue Handling; Reduction of Process Delays and Decrease from Cold Ischemic to Fixative Time to Less than 60 Minutes

a Quality Assessment Study and a Quality Improvement Process

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Proper diagnosis of the hormone-sensitivity of breast cancer is an essential part of breast cancer treatment. Eligible breast cancer patients who receive hormonal therapy achieve a significantly better prognosis than those who do not. However, in order to perform proper diagnosis of breast tissue, the specimen should be handled correctly. The American Society of Clinical Oncology/College of American Pathologists (ASCO/CAP) recommended in 2007 that the ischemia and fixation time should be less than an hour to avoid false negative results. We sought to evaluate to what extent the ASCO/CAP recommendation has been implemented at our institution, assess potential causes of non-compliance, and identify perceived reasons by the Operative Room (OR) nursing staff.

Introduction

Materials and Methods

We assessed de-identified information regarding the fixation time of all the breast tissue specimens handled between July 2014 and November 2016. Statistical analysis included descriptive statistics, scatter plots, Pearson's correlation, and simple linear regression evaluating associations between the number of delayed specimens, the overall volume of specimens, and the reason for the delay (including clinical and grossing delays). An educational intervention was conducted between December 2016 and January 2017, after which anonymous surveys were completed by the OR nursing staff regarding possible barriers in the implementation of the ASCO/CAP recommendation.

Results

Appropriate handling of the breast tissue was achieved on a monthly average of 35% of the cases. Delays were noted in 30-88% of the cases over time. Our results indicate that the number of delayed specimens was not correlated with the overall volume of breast specimens handled each month. Delays because of clinical, grossing or clinical and grossing etiology were similar across the study period. According to the results of the 73 survey responses, the presence of multiple breast operations at the same time was reported as the most common perceived cause of delays. In addition, the need for further education regarding tissue management requirements and more dedicated staff were among the most common recommendations.

Conclusions

Based on the present Quality Assessment Study, it is evident that ASCO/CAP standards have not been met. However, we are establishing a Quality Improvement Process to achieve appropriate breast tissue specimen handling in 90% of the cases by September, 2018. This process includes continuous monitoring of the delays, review of the process to detect possible reasons for delays and engagement of the involved stakeholders, including the nursing staff, surgical oncologists, radiologists and plastic surgeons.

References


Cold Ischemic Time (removed from body) → In OR room X-ray → Carried to Pathology → Accessioning → Grossing → Tissue In fixative

High Level Process Map and Fishbone Diagram picturing the different barriers and reasons for delays at our institution

Recommendations and Perceived Barriers of Delays. Results of the 73 surveys respondents from 2 separate sites (Operative Rooms at Johns Hopkins Outpatient Clinic and Operative Rooms at Weinberg Building)