

Leveraging RFID Localizer to Reduce Delays in Breast Conserving Surgery.

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Introduction

Surgery for non-palpable breast lesions is more commonplace due to advances in imaging and early detection. Wire localization is the most common method of lesion localization prior to surgical excision; however, the requirement for same-day localization has been associated with case delays estimated to cost hospitals \$20-\$40 per minute.

Objective: To compare case delays in all patients undergoing breast conserving surgery (BCS) with wire localization in 2017 with all patients undergoing BCS with a radiofrequency identification tag system.

Methods

- A retrospective analysis was conducted using the Johns Hopkins perioperative dashboard. Case delay data for all patients undergoing surgical excision with same-day wire localization in 2017 and for 18 patients undergoing surgical excision with the RFID Localizer was assessed.
- Lean systems practices (visualized with spaghetti charts) were used to show patient, radiologist, and radiation tech flow on the day of surgery.

Results

Same-Day Wire Localization	RFID Localizer
Patient flow: Registration desk → Pre-operative holding room → Waiting room → Mammogram room or ultrasound room → Pre-operative holding room → Operating room	Patient flow: Registration desk → Pre-operative holding room → Operating room
Radiology tech movement: Multiple visits to 7 locations (Mammogram tech area, Waiting room, Pre Op holding, Nuclear Medicine, Mammogram room, Ultrasound room, and Reading room)	Radiology tech movement: None
Total case time: 180-240 minutes	Total case time: 25-35 minutes

- The authors found that utilization of wire localization for the first case of the day resulted in a late start in 91.5% of cases; furthermore, this delay extended to subsequent surgical cases that day about 73% of the time.
- Eleven of 18 RFID cases did not have a delayed case start time
- In the 7 RFID cases with delays, the average case delay was 3 minutes.

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