Comparison of radioactive seed localization and wire localized excision of breast lesions: A community hospital’s experience

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Background

Screening and improvement in imaging techniques has increased the incidence of non-palpable breast lesions [1].

Wire localized excision (WLE), the gold standard technique to treat non-palpable breast lesions, is limited by delay in operative room setup, wire migration, diathermy burns, difficulty locating the wire tip, poor cosmesis, and a high positive margin rate (21-43%) [2-9].

Radioactive seed localized excision (RSLE) is an alternative technique that avoids these disadvantages. Complications unique to RSLE (e.g.; seed migration and seed localization failure) as well as radiosafety are minimal [9].

Methods

1. Primary: To compare the positive margin rate between RSLE and WLE of non-palpable breast lesions within a community practice.
2. Secondary: To compare the surgical volume, operative time and re-operation rates between the two techniques.

Study Design

Retrospective cohort study conducted on patients who underwent WLE or RSLE for non-palpable breast lesions between 09/2001 and 07/2017.

Selection Criteria

- Inclusion criteria
  - Indication of procedure was breast cancer
  - Primary surgery at NYGH
- Exclusion criteria
  - Bilateral lesions
  - Patients undergoing RSLE and WLE simultaneously
  - Diagnosis other than breast cancer

Data Collection

Source: NYGH’s Cancer Care Ontario (CCO) annual report and retrospective chart review.

Definitions

- Tumors: 3-Dimensional tumor with ≥ 5 mm in size (width x length x height).
- Operative time: time spanning between incision and completion of the surgical procedure.
- Re-operation: re-excision or completion mastectomy positive margin.
- DCIS negative margin: ≥ 2 mm
- DCIS negative margin: no ink on tumor.

Statistical Analysis

- Univariate comparisons: student’s t, Pearson’s Chi-square, or Fisher’s exact test
- Multivariable logistic regression to determine if RSLE/WLE were independently associated with having a positive margin
- Statistical significance: p-value < 0.05

Conclusions

- RSLE was associated with lower margin positivity rate compared to WLE, however the technique of localization was not an independent predictor of margin positivity.
- RSLE was associated with shorter operative time and smaller surgical specimens in comparison to WLE.
- RSLE is an effective technique to excise non-palpable breast lesions in the community setting.