Achieving Tumor Free Margins: Intra-Operative Pathology Consultation to Lower Re-Excision Rates at a Community Hospital

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Background:
- Achieving tumor free margins in a single surgical procedure is the primary goal for breast conserving therapy.
- It is not uncommon for these patients to undergo more than one operation.
- Positive margins increase the patient’s risk of local recurrence and reduced quality of life with multiple procedures.
- Based on anecdotal data within our patient population, lumpectomy specimens requiring re-excision had gross pathological findings that could have potentially warranted further margin excision at the index surgery, avoiding re-excision all together.

Objective
To evaluate the number of re-excision lumpectomies that could have been avoided with intra-operative pathology consultation for grossly positive margins.

Methods
- Retrospective chart review 2010-2017 of lumpectomy cases exhibited in Figure 1.
- 579 patients who underwent lumpectomy were reviewed.
- 478 cases of DCIS and invasive ductal carcinoma were included in the study.
- 91 patients underwent re-excision, of which the gross pathology of each case was reviewed.
- Gross findings that came within 2mm margins for DCIS and ink on tumor for invasive ductal carcinoma were considered potentially avoidable re-excisions.
- 35 cases of the 91 re-excision lumpectomies were found to have positive margins on gross pathologic evaluation at the index surgery.

Results
- 91 of 478 lumpectomy cases for DCIS and invasive ductal carcinoma underwent re-excision from 2010-2017.
- The re-excision rate over this time period was calculated to be 19% with an average of 11 women each year requiring re-excision.
- 38% (n=35) of 91 re-excision cases had gross pathologic findings correlating with positive margins and were potentially avoidable re-excisions.
- The potentially avoidable re-excision rate according to types of histopathology was 28% in DCIS, 55% in invasive ductal carcinoma, and 53% in combined DCIS with invasive ductal carcinoma as demonstrated in Graph 1.
- Graph 2 demonstrates the yearly predicted decrease in re-excisions with intraoperative pathology consultation and further excision of grossly positive margins at the index surgery.

Graph 1: Re-Excision Cases with Evident Gross Pathology Based on Histopathology

Graph 2: Predicted Decrease in Re-Excisions with Intraoperative Pathology Consultation

Conclusion
- Based on the Society of Surgical Oncology-American Society for Radiation Oncology Consensus Guideline on margins, the re-excision rate for breast conserving therapy is 25% in the US.
- Re-excision surgery has the potential for added discomfort, surgical complications, increased health care cost, and additional unnecessary emotional stress for patients and their families.
- Our re-excision rate could have been reduced from 19% to 12% if intra-operative pathology consultation had been utilized.
- By implementing intra-operative pathology consultation for lumpectomies, the re-excision rate can be reduced by more than one-third with the highest impact in patients with invasive ductal carcinoma and combined DCIS-invasive ductal carcinoma.

References

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