ABSTRACT

Purpose: Partial breast irradiation (PBI) is an attractive alternative to whole breast irradiation (WBRT) for breast cancer. Xoft Axxent Electronic Brachytherapy (XB) is a balloon based system using a kilovoltage source to deliver radiation therapy. Smaller tumors undergoing interoperative use are of interest for improving radiation therapy. We report the first use of single fraction intraoperative radiation therapy (IORT) with the Xoft system.

Method: A 61 year old woman was treated with PBI utilizing XB IORT. Intraoperative pathologic assessment of sentinel nodes and lumpectomy margins was affirmed by the surgeon, and the patient was discharged home the same day. She was able to continue daily activities.

Results: IORT utilizing XB was effective in delivering a tissue sparing dose to tissues surrounding the breast. The patient successfully underwent BCT with XB IORT. Intraoperative pathologic assessment of sentinel nodes and lumpectomy margins was affirmed by the surgeon, and the patient was discharged home the same day. She was able to continue daily activities.

RESULTS

A 61 year old diagnosed with BIRADS 4 micro calcifications in the outer quadrant of the left breast underwent stereotactic core biopsy. New calcifications were noted at the 12 o’clock position that measured 8 mm. The patient elected treatment with IORT utilizing XB.

METHODS

A patient with early stage breast cancer was treated with IORT using the eBx system following lumpectomy and sentinel lymph node biopsy. Intraoperative pathologic assessment of sentinel nodes and lumpectomy margins was affirmed by the surgeon, and the patient was discharged home the same day. She was able to continue daily activities.

CONCLUSIONS

IORT utilizing eBx is feasible and can be accomplished with a total procedure time of approximately 2 hours. If IORT methods, including eBx, are established as a treatment option, this will increase access to BCT, improve tumor control rates, and decrease complications associated with the treatment of early stage breast cancer.