Embargoed Until Friday, May 22, 11AM

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Lumpectomy in Women with Multiple Breast Cancers Provides Cosmetically Satisfying Results

2020 Virtual Scientific Session Abstract:
Cosmetic Outcomes Following Breast Conservation Surgery and Radiation for Multiple Ipsilateral Breast Cancer: Data from the Alliance Z11102 Study

Columbia, MD, May 22, 2020--The majority of women with multiple tumors in a single breast reported good or excellent satisfaction with the cosmetic results of lumpectomy (removal of the diseased portions of the breast) despite loss of significant breast volume and often multiple incisions. These are findings from an ongoing multi-center, prospective trial examining the feasibility of breast conserving surgery in this growing patient population. Researchers will present the study on May 23 online as part of the American Society of Breast Surgeons (ASBrS) 2020 Scientific Session. It also will be posted online on May 22 in the ASBrS 2020 Virtual Scientific Session Official Proceedings* and in the Annals of Surgical Oncology.

"Today, this patient population comprises an estimated 15% of women with breast cancer. Traditionally, they have been treated with mastectomy (removal of the entire breast) due to concerns about tumor recurrence and poor cosmetic outcomes with large-volume excision and radiation," explains lead author Kari Rosenkranz, MD, Dartmouth-Hitchcock Medical Center. "Cosmetic issues for these patients are addressed with the option of immediate breast reconstruction. However, for many women, the loss of a breast with mastectomy rather than lumpectomy leads to diminished well-being, self-image and overall quality-of-life.

Now, the findings of this study--part of a trial assessing cancer recurrence with breast conservation in these patients--may help validate that preserving the breast is both oncologically safe and has reasonable cosmetic outcomes, if borne out by five year recurrence data.

Researchers focused on cosmetic data from 216 women who completed lumpectomy and radiation. All participants had two or three discreet malignancies in a single breast separated by more than two centimeters and confirmed on biopsy. Individually, each tumor met criteria for lumpectomy.

Both patients and surgeons completed surveys to rate their perceptions of cosmetic results on a four point scale, with one representing excellent and four representing poor results. Patients were surveyed at eight post-operative time points, beginning at 30 days and ending at 60 months. Surgeons were surveyed once at 30 days post-procedure.

In addition, patient perception was assessed with BREAST-Q, a validated self-rating tool that quantifies patient quality of-life and satisfaction related to breast surgeries. BREAST-Q scores range from one through a high of 100.

On the surveys, the majority of women reported good or excellent cosmetic results. At two years post-surgery, 70.6% of patients scored results as good or excellent and only 3.7% as poor. These ratings are similar to those treated with lumpectomy for single-site disease. Age, the number of lesions, and the number of lumpectomies to achieve negative margins had no impact on the cosmetic results. Data remained relatively consistent across the five-year study period, although the number of survey participants declined.

Patient BREAST-Q scores were similarly strong, with an expected slight drop in the Effects of Radiation section during the six to 12 month intervals when radiation impact is most severe.

“During recent years, diagnosis of multi-focal breast disease has significantly increased as today’s more sensitive breast imaging technologies pick up more lesions than in the past,” commented Dr. Judy Boughey, co-principal investigator of the trial. “As a result, today’s multi-focal population is characterized by a greater number of patients with earlier stage, less aggressive tumors. Moreover, modern targeted therapies are more effective in treating breast disease than in the past, leading to long term survival with less invasive surgical approaches.”

This trial was designed following a growing number of retrospective studies that demonstrated recurrence rates in appropriately selected patients with multiple tumors treated with breast conservation are similar to those expected in women with a single tumor. However, the cosmetic impact of this surgery has been uncertain.

“We are hopeful that this new data on cosmesis and the future overall results regarding cancer recurrence from this trial will enhance the dialogue regarding best treatments for women with more than one site of disease in a breast and open new options for patients who desire breast preservation. We believe this could greatly improve patient satisfaction and well-being,” Dr. Rosenkranz concludes.

***The Official Proceedings is a comprehensive online compilation of peer-reviewed research selected for presentation at the 2020 Annual Meeting of the American Society of Breast Surgeons. The Meeting was cancelled due to caution surrounding the coronavirus.**

Abstract, Official Proceedings

Cosmetic Outcomes Following Breast Conservation Surgery and Radiation for Multiple Ipsilateral Breast Cancer: Data from the Alliance Z11102 Study

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Objective: With improved imaging modalities, the diagnosis of multiple synchronous breast cancers (multiple ipsilateral breast cancer- MIBC) is rising. Historically, the primary treatment for MIBC has been mastectomy due both to concerns about in-breast recurrence risk and poor cosmetic outcomes in women requiring larger volume or multiple sites of excision. The Alliance Z11102 study prospectively assessed patient and surgeon perceptions of cosmesis in women with MIBC treated with breast conserving therapy (BCT).

Methods: Z11102 was a multicenter trial enrolling women with 2 or 3 separate sites of biopsy proven malignancy separated by >2 cm within one breast. Cosmetic outcome was a planned secondary end-point of the trial. Surgeon perception of cosmesis was assessed at 30 days post operatively. Patients were administered surveys post-operatively at the following time points: 30 days, 6 months, 12 months, 18 months, 24 months, 36 months, 48 months and 60 months. Surveys assessed cosmesis on a 4 point Likert scale with 1 representing excellent cosmesis, 2 good, 3 fair and 4 poor, as well as the Breast Q, a validated assessment tool, to measure patient satisfaction. All patients undergoing successful breast conserving therapy were treated with whole breast radiation. Associations were assessed with chi-square or Fisher's exact tests as appropriate.

Results: Of 270 women enrolled, 54 were excluded due to ineligibility or conversion to mastectomy. Cosmetic outcome data is available on the 216 eligible women who completed breast conservation. Thirty days post-operatively, surgeons were more likely to rate cosmetic outcome good or excellent compared to patients: 95.2% versus 86.8% (p =0.001 by Fisher exact testing), respectively. Two years post operatively, of the 136 patients who completed the survey, 76.6% felt the result was good or excellent while 3.7% felt the result was poor. We found no significant differences in patient reported cosmetic outcomes when stratifying by patient age, number of lesions (2 or 3), number of incisions, number of lumpectomies or size of largest area of disease. Median satisfaction score on the Breast Q was 76.3 post-operatively with slight decrease to 73.7 by 3 years after surgery (Table 1). The most common reports of adverse effects of radiation were noted at the 6 months post-surgery survey with improvement at later intervals.

Conclusions: BCT performed in women with MIBC results in good or excellent cosmesis for the majority of women, similar to that seen in unifocal disease treated with BCT. Patients should be cautioned that the breast appearance may change with time and perceptions of cosmesis may decline in the months or

years following treatment. Over time, the adverse effects of radiation lessen, and patient physical well-being improves. Support: U10CA180821, U10CA180882; ClinicalTrials.gov Identifier: NCT01556243

Table 1: Assessment of Cosmetic Outcome over Time

	5-30 days post-surgery (N=216)	6 months post-WBI* (N=205)	12 months post-WBI (N=199)	18 months post-WBI (N=196)	24 months post-WBI (N=194)	36 months post-WBI (N=165)	48 months post-WBI (N=93)	60 months post-WBI (N=44)
Patient Breast Cosmesis Score								
Excellent	89 (51.7%)	49 (32.5%)	43 (30.1%)	46 (33.1%)	44 (32.4%)	37 (36.6%)	20 (38.5%)	4 (21.1%)
Good	60 (34.9%)	71 (47.0%)	64 (44.8%)	64 (46.0%)	52 (38.2%)	34 (33.7%)	17 (32.7%)	10 (52.6%)
Fair	21 (12.2%)	28 (18.5%)	30 (21.0%)	24 (17.3%)	35 (25.7%)	23 (22.8%)	13 (25.0%)	5 (26.3%)
Poor	2 (1.2%)	3 (2.0%)	6 (4.2%)	5 (3.6%)	5 (3.7%)	7 (6.9%)	2 (3.8%)	0 (0.0%)
Missing or Not Done	42	54	56	57	58	64	41	25
Surgeon Breast Cosmesis Score								
Excellent	104 (54.7%)							
Good	76 (40.0%)							
Fair	10 (5.3%)							
Poor	0 (0.0%)							
Missing or Not Done	26							
BreastQ Score: Satisfaction with Breast								
N	175	159	148	143	143	101	54	17
Mean (SD)	76.3 (18.2)	77.2 (19.0)	75.7 (17.5)	76.1 (18.9)	74.9 (17.2)	73.7 (20.1)	77.0 (17.5)	71.1 (12.7)
BreastQ Score: Adverse Effects of Radiation								
N	61	158	149	140	142	97	54	17
Mean (SD)	95.7 (13.3)	86.1 (16.8)	88.7 (15.5)	91.1 (14.6)	92.4 (11.9)	91.1 (13.1)	93.9 (11.6)	94.3 (10.1)
BreastQ Score: Physical Well-Being								
N	171	158	147	142	142	99	54	17
Mean (SD)	58.6 (23.1)	67.6 (28.2)	73.2 (27.4)	75.4 (27.9)	77.7 (25.5)	77.7 (27.0)	80.4 (25.5)	72.8 (30.7)