

The Impact of Radiation and Chemotherapy on Outcomes in Patients who Complete Implant-Based Breast Reconstruction.

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Introduction

- Treatments for breast cancer include neoadjuvant chemotherapy (NACT), adjuvant chemotherapy (ACT), radiation (RAD), and combinations of these therapies.
- Effects of these therapies on the outcomes of implant-based breast reconstructions have not been studied fully.

Methods

- Retrospective review of 272 patients who completed implant-based breast reconstruction after mastectomy.
- Patients were split into 8 groups based on cancer therapy received:
 - Group 1: no treatment, n=139
 - Group 2: NACT, n=32
 - Group 3: ACT, n=44
 - Group 4: NACT+ACT, n=14
 - Group 5: NACT+RAD, n=17
 - Group 6: ACT+RAD, n=13
 - Group 7: RAD, n=12
 - Group 8: ACT+NACT+RAD, n=1
 - *Group 8 was excluded because it had only one patient, leaving n=271.*
- ANOVA and Tukey HSD were run to compare percentages of patients with various complications and percentages of patients undergoing complication & revision surgeries.

Results

- There were no significant differences in percentages of patients with infection requiring IV antibiotics (p=.32), necrosis requiring operation (p=.09), or seroma (p=.40).
- For patients who required replacement of TE with another TE due to complication, only Group 1 (1.4%) vs Group 6 (15.4%) had a significant difference, p=.04.
- There were no significant differences in the percentages of patients receiving at least one complication-related surgery before implant placement (p=.16), at least one complication-related surgery after implant placement (p=.85), or at least one revision surgery (p=.94).

Conclusions

- Although Group 6 (ACT+RAD) patients showed a significantly higher rate of tissue-expander exchange due to complication, the rates of other complications and surgeries across groups were equivalent.
- These results should allow both plastic surgeons and mastectomy patients to be cautiously optimistic when pursuing implant-based breast reconstruction concurrently with cancer treatments.

Figure 1. Percentages of patients with specific complications and undergoing different types of surgeries.

Group	Infection requiring IV antibiotics	Necrosis requiring operation	TE exchange for new TE	At least one complication-related surgery before implant placement	At least one complication-related surgery after implant placement	At least one revision surgery
1	5.7	4.3	1.4*	20.9	5.0	46.8
2	6.3	12.5	3.1	15.6	3.1	53.1
3	13.3	0	2.3	20.5	2.3	40.9
4	0	0	7.1	7.1	0	42.9
5	0	5.9	0	41.2	5.9	52.9
6	15.4	15.4	15.4*	38.5	0	53.9
7	8.3	9	0	33.3	0	41.7
F; p (ANOVA)	1.2; .32	1.9; .09	1.9; .08	1.6; .16	.4; .85	.3; .94
p (Tukey HSD)	N/A	N/A	*p=.04	N/A	N/A	N/A