

Evaluating Need for Additional Imaging and Biopsy after Oncoplastic Breast Conserving Surgery

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BACKGROUND

- Breast conserving therapy (BCT) using oncoplastic surgery (OPS) allows for larger resections and improved cosmesis
- Imaging after BCT can be a challenge when deciphering between normal post-surgical changes and new pathology
- Tissue rearrangement performed as part of OPS may impact surveillance imaging and may lead to additional biopsies
- We evaluated the impact of OPS on the rates of post-operative surveillance imaging, biopsy, and additional surgery

METHODS

- Observational cohort of patients undergoing BCT at Virginia Mason Medical Center in Seattle, WA from 2009-2018
- Standard surgery (STS) was the predominant approach until OPS was introduced in 2012
- Rates of imaging beyond standard diagnostic views as well as rates of biopsy and additional operations were compared

RESULTS

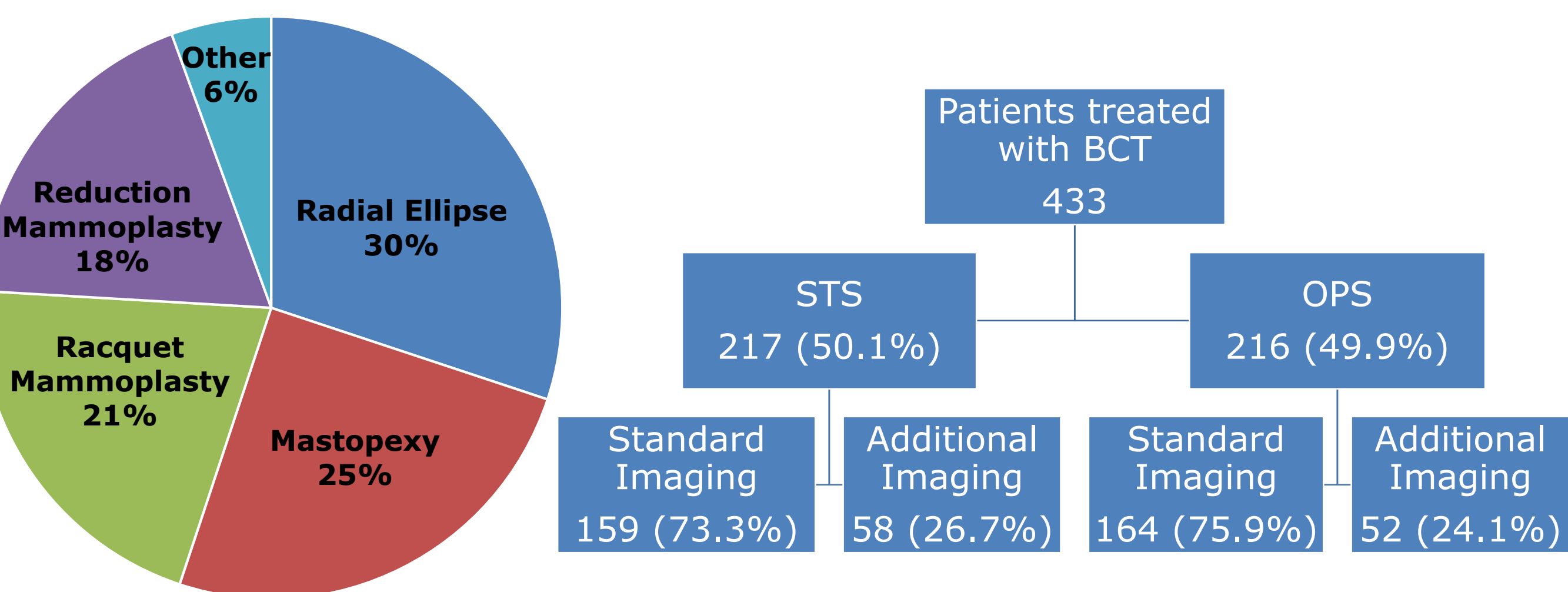


Figure 1. OPS techniques.

Figure 2. Rates of additional imaging.

Table 1. Patient demographics and tumor characteristics.

	STS N=217 (%)	OPS N=216 (%)	P value
Age (years)	60.4 ± 11.8	59.8 ± 11.8	0.40
BMI (kg/m ²)	28.3 ± 6.9	28.1 ± 7.3	0.57
Size (mm)	13.4 ± 11.3	14.9 ± 12.7	0.08
Histologic type			
Invasive ductal carcinoma	111 (51.2%)	126 (58.3%)	0.21
Invasive lobular carcinoma	10 (4.6%)	15 (6.9%)	
Mixed ductal-lobular carcinoma	35 (16.1%)	21 (9.7%)	
Ductal carcinoma in situ	59 (27.2%)	52 (24.1%)	
Other	2 (0.9%)	2 (0.9%)	
Receptor status			
ER positive	194 (89.4%)	196 (90.7%)	0.75
PR positive	149 (68.7%)	142 (65.7%)	0.54
Her2 positive	9 (4.1%)	7 (3.2%)	0.80
Triple negative	9 (4.1%)	8 (3.7%)	>0.99
Re-excision	78 (35.9%)	46 (21.3%)	<0.01
Mean follow-up (months)	79 ± 27	40 ± 17	<0.01

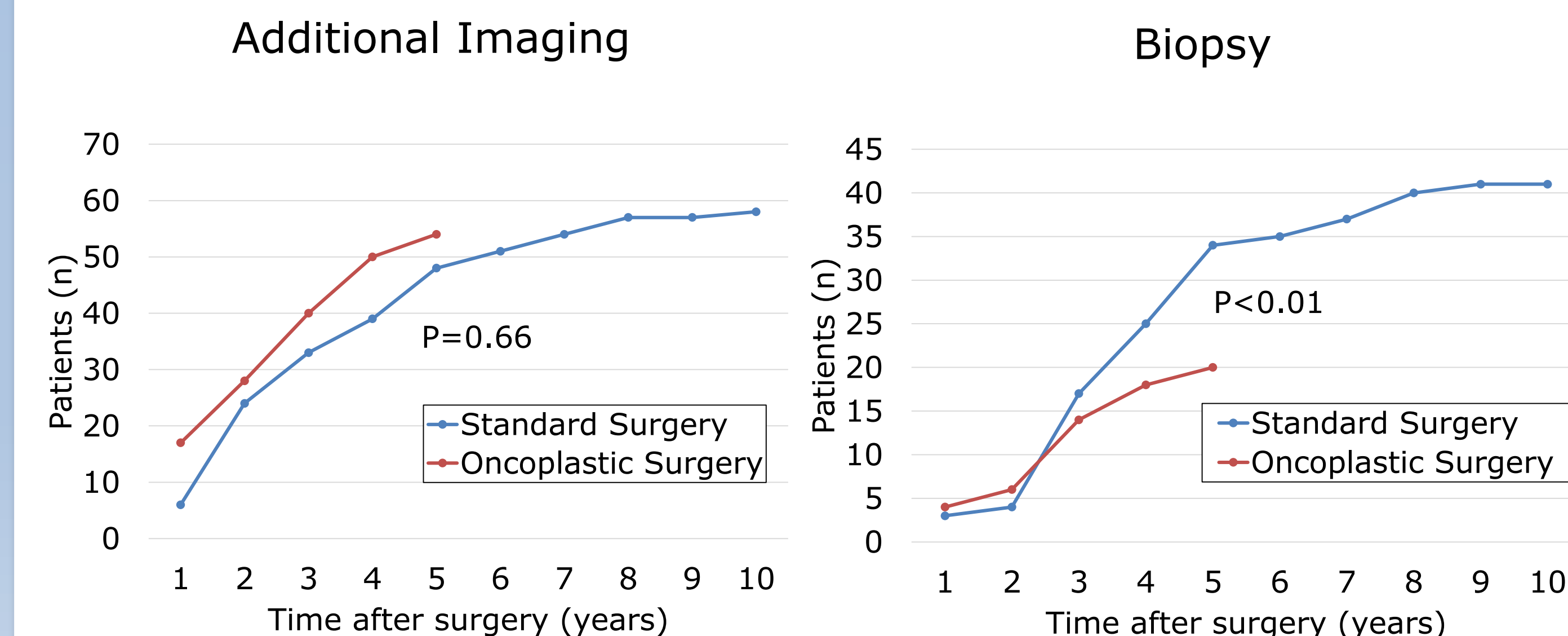


Figure 3. Rates of additional imaging and biopsy.

Table 2. Patients requiring biopsy and additional surgery.

	STS N=217 (%)	OPS N=216 (%)	P value
Patients needing imaging¹	58 (26.7%)	52 (24.1%)	0.66
Ipsilateral	35 (60.3%)	23 (44.2%)	0.12
Contralateral ²	23 (39.7%)	29 (55.8%)	
Patients needing biopsy³	41 (18.9%)	20 (9.3%)	<0.01
Ipsilateral	17 (41.5%)	14 (70.0%)	0.10
Contralateral	19 (46.3%)	4 (20.0%)	
Bilateral	5 (12.2%)	2 (12.2%)	
Biopsy findings⁴			
Malignancy	25 (11.5%)	10 (4.6%)	0.58
Risk lesion	4 (8.5%)	1 (4.5%)	0.55
Benign	18 (38.3%)	11 (50.0%)	0.36
Additional surgery³	22 (10.1%)	9 (4.2%)	0.03
Excisional biopsy	4 (1.8%)	1 (0.5%)	0.64
Partial mastectomy	12 (5.5%)	4 (1.9%)	
Unilateral mastectomy	5 (2.3%)	4 (1.9%)	
Bilateral mastectomy	1 (0.5%)	0	

¹Rates of additional imaging remained similar between groups when the follow-up was limited to the first 36 months. ²Of these 29 OPS patients, 14 (48.3%) had contralateral symmetry procedures performed during the index operation. ³Findings remained statistically significant when the follow-up was limited to the first 36 months. ⁴41 STS patients underwent a total of 47 biopsies and 20 OPS patients underwent a total of 22 biopsies.

CONCLUSION

- OPS was not associated with an increased need for additional imaging compared to STS
- OPS was associated with fewer biopsies and fewer operations as a result of biopsy pathology compared to STS
- Post-operative imaging can be a challenge BCT; however, use of OPS did not negatively impact imaging
- Further study is warranted to better understand the need for additional imaging, biopsy, and surgical procedures following OPS