Decreasing Trend in Contralateral Prophylactic Mastectomy Rate in Average-Risk Women with Unilateral Breast Cancer (787740)

Hannah Kapur BSc, Rebecca Warburton MD, Jin-Si Pao MD, Urve Kuusk MD, Carol Dingee MD, Leo Chen MSc, Amy Bazzarelli MD, Elaine McKevitt MD
University of British Columbia Faculty of Medicine, Department of Surgery, Division of General Surgery, Mount Saint Joseph Hospital

Introduction

- Despite lack of evidence for survival benefit, recent studies have demonstrated increasing rates of contralateral prophylactic mastectomy (CPM) among women with unilateral breast cancer (1).
- For average-risk women with unilateral breast cancer, the risk of contralateral breast cancer (CBC) at 10 years is low (2).
- CPMs are not recommended for average-risk patients with unilateral cancer because they do not provide a survival benefit compared to a unilateral procedure. CPMs are reserved for a select patients with genetic mutations, such as BRCA1/2, at high risk for CBC (3).
- This increasing trend is largely attributable to patient factors, such as fear of recurrence and peace of mind.
- In order to prevent overtreatment of unilateral breast cancer, there is consensus to counsel the average risk patient about the risks of recurrent or metachronous breast cancer, and the limited benefit compared to risks of CPMs.

Objectives

1. Assess the rate of detecting occult malignancy or high-risk lesions in CPM specimens at our institution.
2. Evaluate trends in CPM rates between 2013 to 2017.

Methods

- All patients receiving a total mastectomy for unilateral breast cancer between 2013 to 2017 were identified with our institution's database. Patient and tumour characteristics were verified by chart review.
- **Inclusion:** Patients with unilateral breast cancer treated with unilateral mastectomy or total mastectomy plus a CPM (average-risk patients).
- **Exclusion:** Patients with BRCA or other genetic predispositions (high-risk patients).
- CPM rate was calculated based on prospectively-collected data.
- Pathology data was investigated among patients undergoing total mastectomy plus a CPM for occult malignancy detection.

Results

Figure 1: CPM Rates and Occult Malignancy Detection Rates by Year in Average-Risk Patients with Unilateral Breast Cancer

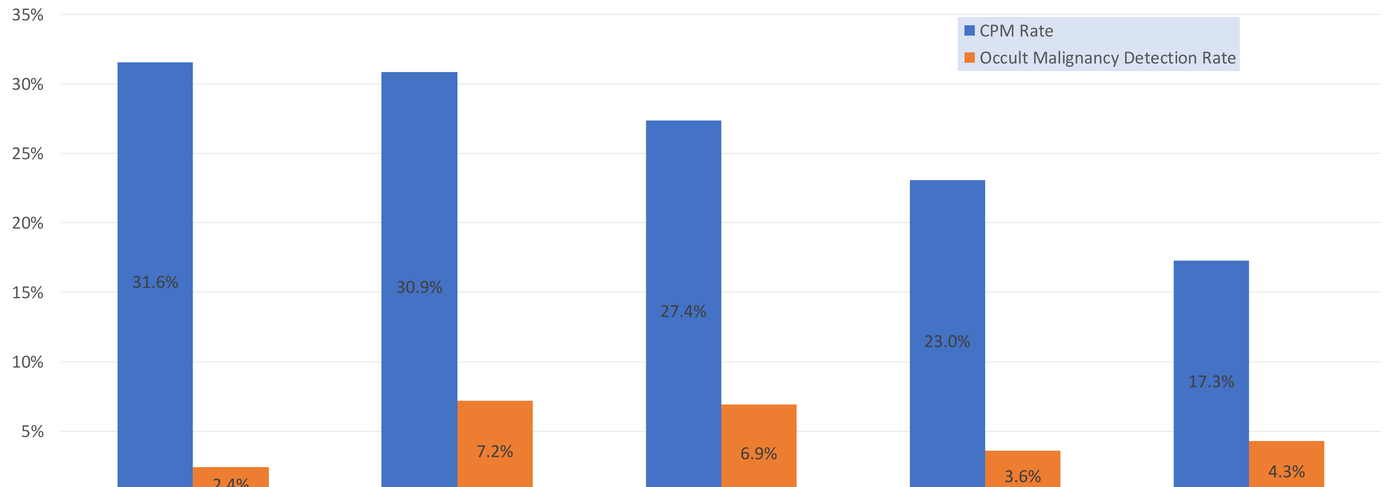

Table 1: Patient Characteristics

		Unilateral TM (N=998)	TM and CPM (N=355)	p-value
Patient Age (continuous)	Mean	59.3	52.0	< 0.001
	Median	58	51	< 0.001
	Range	26 to 96	27 to 81	NA
Patient Age (Categorical)	< 40	64 (6.4%)	44 (12.4%)	< 0.001
	40 to 74	779 (78.1%)	304 (85.6%)	
	75 +	155 (15.5%)	7 (2.0%)	
Bilateral Cancer	Rate	7 (0.7%)	1 (0.3%)	0.689
Reconstruction	Rate	436 (43.7%)	255 (71.8%)	< 0.001
Reason for Mastectomy	Medically Necessary	755 (76.5%)	233 (68.7%)	0.006
	Patient Preference	232 (23.5%)	106 (31.3%)	
Indication for Surgery	Primary Treatment	771 (77.3%)	240 (71.6%)	0.124
	Completion TM after BCS	143 (14.3%)	65 (19.4%)	
	Locally Recurrent	51 (5.1%)	16 (4.8%)	
	Second Primary	26 (2.6%)	13 (3.9%)	

Table 2: Tumour Characteristics

		Unilateral TM (N=998)	TM and CPM (N=355)	p-value
Tumour Size (mm)	Mean Pre-Operative Size	30.8	26.0	0.003
	Mean Post-Operative Size	23.9	18.5	< 0.001
Tumour Morphology	IDC	718 (73.9%)	254 (78.4%)	0.132
	DCIS	205 (21.1%)	61 (18.8%)	
	Other (LCIS, Paget's ILC)	49 (5.0%)	9 (2.8%)	
Lymph Node Status	Positive	168 (19.9%)	71 (26.4%)	0.031
Presenting Problem	Mass	542 (59.0%)	184 (63.9%)	0.534
	Abnormal Imaging	336 (36.6%)	96 (33.3%)	
	Nipple Discharge	19 (2.1%)	3 (1.0%)	
	Breast Pain	3 (0.3%)	1 (0.3%)	
Neoadjuvant Therapy	Yes	140 (14.0%)	77 (21.7%)	0.001
Receptor Status	ER Positive	314 (78.9%)	79 (79.8%)	0.952
	PR Positive	262 (71.4%)	64 (67.4%)	0.522
	HER Positive	79 (22.7%)	20 (23.0%)	1.000

Conclusion

- Our institution had an occult malignancy detection rate of 5.6% in CPM tissue between 2013 to 2017. Our results support findings in the literature that there is a low risk of malignancy in CPM tissue, and thus warrants continued advocacy and patient education to reduce the number of CPMs performed in average-risk patients with unilateral cancer (Figure 1).
- After identifying a high CPM rate in 2012, our institution demonstrated a decreasing trend in CPM rate between 2013 to 2017 from 31.6% to 17.3% ($p<0.001$) with no significant change in the occult malignancy detection rate ($p=0.8126$) (Figure 1).
- Among average-risk patients with unilateral cancer, those that underwent a CPM have significantly higher reconstruction rates (Table 1), although there was no significant change in the reconstruction rate over 5 years.
- As often reported in the literature, patient choosing a CPM tended to be younger, but they did not have a significantly higher rate of completion mastectomies (Table 1).
- We did not find a statistical difference in the bilateral cancer rate, reason for mastectomy, pre-operative tumour size, lymph node status, presenting problem, or receptor status, although post-operative sizes were statistically smaller in patients who had a CPM (Table 1 and 2).

Summary

- Our institution's data confirms that there is a low risk of malignancy in CPM specimens in patients with average-risk unilateral breast cancer. This data can be used to counsel patients at our institution who may ask about CPMs and empower them to make informed decisions.
- CPM rates provide an actionable measure and opportunity to de-escalate surgery for average-risk unilateral breast cancer, and thus could potentially serve as a quality indicator for institutions to monitor breast cancer care.
- The findings of younger age and high reconstruction rates in patients receiving a CPM highlights potential patient decision-making factors and may serve as an opportunity to identify select patients and offer individualized counselling and risk-profiling, as well as potential to collaborate with plastic surgeons.
- We suggest that to prevent overtreatment of breast cancer, CPM rates could be used in conjunction with other published quality indicators, such as breast conserving surgery rates, re-excision rates, and single-operation rates.

Contact Information

Hannah Kapur
- Email: hannah.kapur@alumni.ubc.ca

Dr. Elaine McKevitt
- Email: emckevitt@providencehealth.bc.ca

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