Local Therapy Decision-Making and Contralateral Prophylactic Mastectomy in Young Women with Early-Stage Breast Cancer.


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BACKGROUND: Rates of contralateral prophylactic mastectomy (CPM) have increased in the United States, with younger women with breast cancer the most likely to have CPM.

METHODS: As part of an ongoing cohort study of young women diagnosed with breast cancer at age ≤40 years, we conducted multinomial logistic regression of data from 560 women with unilateral Stage I-III disease to identify factors associated with: (1) CPM versus unilateral mastectomy (UM); (2) CPM versus breast-conserving surgery (BCS).

RESULTS: Median age at diagnosis was 37 years; 66 % of women indicated that their doctor said that BCS was an option or was recommended. Of all women, 42.9 % had CPM, 26.8 % UM, and 30.4 % BCS. Among women who said the surgical decision was patient-driven, 59.9 % had CPM, 22.8 % BCS, and 17.3 % UM. Clinical characteristics associated with CPM versus BCS included HER2 positivity, nodal involvement, larger tumor size, lower BMI, parity, and testing positive for a BRCA mutation. Emotional and decisional factors associated with CPM versus UM and BCS included anxiety, less fear of recurrence, and reporting a patient-driven decision. Women who reported a physician-driven decision were less likely to have had CPM than both of the other surgeries, whereas higher confidence with the decision was associated with having CPM versus BCS.

CONCLUSIONS: Many young women with early-stage breast cancer are choosing CPM. The association between CPM and emotional and decisional factors suggest that improved communication together with better psychosocial support may improve the decision-making process.

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PURPOSE: Studies demonstrate an increasing rate of contralateral prophylactic mastectomy (CPM). The purpose of this study is to evaluate decision making and factors influencing women's long-term satisfaction with CPM. Descriptive analysis is used to analyze the results of our designed questionnaire approved by our Institutional Review Board.

METHODS: We searched our institutional cancer registry for patients diagnosed with breast cancer between 2000 and 2010. The studied time frame is of significance as this study is the first to measure response rate in questions examining patient satisfaction for >1 year after undergoing CPM. The questionnaire was mailed to all consented participants to examine factors contributing to the choice of CPM and postoperative satisfaction.

RESULTS: Of the 206 women included in the study, 147 were aged up to 50 years. Majority of women who underwent CPM in this cohort was with a bachelor's degree or higher, married or partnered women, and women earning >$60,000/y. Almost all women were "happy with overall surgery" and would recommend CPM to other patients. Psychological factors, such as fear of recurrence, were more commonly associated with the decision for CPM in patients with invasive carcinoma. Opinions of partners, relatives, friends, and physicians further contributed to the decision to undergo surgery. The availability of reconstruction was also an influential factor in the overall decision.

CONCLUSIONS: The majority of our study participants experienced long-term satisfaction with the surgical procedure of CPM. From our analysis, we can confidently say that fear of cancer recurrence and the opinions of others, among other factors, were influencing contributors toward the decision of undergoing CPM.

PMID: 23648435  [PubMed - in process]
Factors Affecting Informed Decision-Making in Women with Increased Breast Cancer Risk or DCIS Pursuing Contralateral Prophylactic Mastectomy.

Valente J, Stybio T, Hyde S, Lipscomb J, Gillespie TW.

Despite lack of survival benefit, an increasing number of women diagnosed with ductal carcinoma in situ (DCIS) opt for removal of the unaffected breast in addition to the breast with known pathology, i.e. contralateral prophylactic mastectomy (CPM). Little is known about women’s decision-making processes that contribute to this rising trend, particularly for DCIS. Further obscuring the decision is the highly variable terminology used to discuss breast cancer pathologies and treatments. The purpose of this study was to investigate factors impacting risk comprehension and decision-making related to increased risk for breast cancer or DCIS. We conducted a retrospective and prospective pilot study to evaluate women’s perceived contralateral breast cancer risk, health literacy, numeracy, and comprehension of terms used in genetics and breast cancer. Clinical data such as breast MRI, genetic testing, family history, and breast cancer risk derived from predictive models were also collected. Women with DCIS and those high-risk for development of invasive breast cancer were eligible, and 68 patients participated. Of the cohort, 33 (48.5%) women considered pursuing CPM and 11 (16.2%) underwent CPM. Anxiety about cancer recurrence was the top reason for considering CPM. Undergoing CPM was significantly associated with plastic surgery consultation, increased 10-year breast cancer risk, genetic counseling, and genetic testing. The consideration of CPM was also associated with higher incomes. Numeracy, health and genetic literacy, and terminology scores were not significant predictors of CPM. Lastly, 83.8% of respondents stated DCIS qualified as breast cancer, but only 39.7% of patients correctly defined DCIS. When asked to interpret the phrase "indolent lesion of epithelial origin" (new terminology advocated to replace "DCIS"), 27.9% of respondents believed it referred to cancer, 47.1% did not, and 23.5% were unsure. Patients commonly thought "lesion" meant "skin wound" or "sore". Decision-making related to DCIS remains complex. Although CPM has not shown a survival advantage and can have significant complications, CPM rates continue to rise. Recognizing patients’ knowledge of risk communication and terminology is vital to support shared and informed surgical decisions.

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Prospective Study of Surgical Decision-making Processes for Contralateral Prophylactic Mastectomy in Women With Breast Cancer.

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OBJECTIVE: We prospectively examined the psychosocial predictors and the decision-making process regarding contralateral prophylactic mastectomy (CPM) among women with sporadic breast cancer.

BACKGROUND: Increasing numbers of women with breast cancer are seeking CPM. Data are limited about the surgical decision-making process and the psychosocial factors that influence interest in CPM.

METHODS: Women with early-stage unilateral breast cancer (n = 117) were recruited before their first surgical visit at MD Anderson and completed questionnaires assessing knowledge of and interest in CPM and associated psychosocial factors. After the appointment, women and their surgeons completed questions about the extent that various surgical options (including CPM) were discussed; also, the women rated their perceived likelihood of having CPM and the surgeons rated the appropriateness of CPM.

RESULTS: Before their first visit, 50% of women were moderately to extremely interested in CPM and 12 (10%) of women had CPM at the time of their primary breast cancer surgery. Less knowledge about breast cancer (P = 0.02) and greater cancer worry (P = 0.03) predicted interest in CPM. Greater cancer worry predicted who had CPM (P = 0.02). Interest in CPM before surgical visit and the likelihood of having CPM after the visit differed (P = <0.001). Surgeons' rating of the appropriateness of CPM and the patient's reported likelihood of having CPM were not significantly different (P = 0.49).

CONCLUSIONS: Interest in CPM is common among women with sporadic breast cancer. The informational and emotional aspects of CPM may affect the decision to have
CPM and should be addressed when discussing surgical options.

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Perceptions of Contralateral Breast Cancer Risk: A Prospective, Longitudinal Study.

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PURPOSE: An increasing proportion of breast cancer patients undergo contralateral prophylactic mastectomy (CPM) to reduce their risk of contralateral breast cancer (CBC). Our goal was to evaluate CBC risk perception changes over time among breast cancer patients.

METHODS: We conducted a prospective, longitudinal study of women with newly diagnosed unilateral breast cancer. Patients completed a survey before and approximately 2 years after treatment. Survey questions used open-ended responses or 5-point Likert scale scoring (e.g., 5 = very likely, 1 = not at all likely).

RESULTS: A total of 74 women completed the presurgical treatment survey, and 43 completed the postsurgical treatment survey. Baseline characteristics were not significantly different between responders and nonresponders of the follow-up survey. The mean estimated 10-year risk of CBC was 35.7 % on the presurgical treatment survey and 13.8 % on the postsurgical treatment survey (p < 0.001). The perceived risks of developing cancer in the same breast and elsewhere in the body significantly decreased between surveys. Both CPM and non-CPM (breast-conserving surgery or unilateral mastectomy) patients' perceived risk of CBC significantly decreased from pre- to postsurgical treatment surveys. Compared with non-CPM patients, CPM patients had a significantly lower perceived 10-year risk of CBC (5.8 vs. 17.3 %, p = 0.046) on postsurgical treatment surveys.

CONCLUSIONS: The perceived risk of CBC significantly attenuated over time for both CPM and non-CPM patients. These data emphasize the importance of early physician counseling and improvement in patient education to provide women with accurate risk information before they make surgical treatment decisions.

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Defining the relationship between patient decisions to undergo breast reconstruction and contralateral prophylactic mastectomy.

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BACKGROUND: Recent studies suggest that the decisions to undergo breast reconstruction and contralateral prophylactic mastectomy are closely related. In this article, the relationship between method of reconstruction and decision to undergo contralateral prophylactic mastectomy is described. Recent trends in contralateral use in the context of literature questioning its oncologic benefit are also evaluated.

METHODS: Female patients with unilateral breast cancer were identified and data extracted from the Surveillance, Epidemiology, and End Results database from 2000 through 2010. Logistic regression analyses were performed to study the relationship between having contralateral prophylactic mastectomy and key demographic, oncologic, and reconstructive factors among women with unilateral breast cancer.

RESULTS: A total of 157,042 patients with unilateral breast cancer were included. The contralateral prophylactic mastectomy rate increased from 7.7 percent to 28.3 percent during the study period, and the proportion of reconstructed patients who underwent contralateral prophylactic mastectomy increased from 19 percent to 46 percent. Reconstruction was associated with higher odds of contralateral prophylactic mastectomy (OR, 2.79; 95 percent CI, 2.70 to 2.88; p < 0.0001). Among women who had reconstruction, implant-based reconstruction was associated with significantly higher odds of contralateral prophylactic mastectomy than autologous tissue reconstruction (OR, 1.38; p < 0.0001).

CONCLUSIONS: This study confirms that reconstruction and the decision to undergo contralateral prophylactic mastectomy are closely related, with implant reconstruction dominating in these patients. Given the close relationship between reconstruction and the choice for contralateral prophylactic mastectomy, plastic surgeons should play an active role in educating patients to avoid decisions made based on inaccurate information.

CLINICAL QUESTION/LEVEL OF EVIDENCE: Risk, II.

PMID: 25719688 [PubMed - in process]


Impact of reconstruction and reoperation on long-term patient-reported satisfaction after contralateral prophylactic mastectomy.

Boughey JC(1), Hoskin TL, Hartmann LC, Johnson JL, Jacobson SR, Degnim AC, Frost MH.
BACKGROUND: Contralateral prophylactic mastectomy (CPM) is increasingly chosen by breast cancer patients and may be related to increased use of immediate reconstruction. This study examines long-term patient satisfaction with CPM and reconstruction in a historical cohort.

METHODS: 621 unilateral breast cancer patients with a family history of breast cancer who underwent CPM between 1960 and 1993 were surveyed regarding quality of life (QOL) and satisfaction with CPM at two time points (approximately 10 and 20 years after CPM).

RESULTS: 583 women responded to the first follow-up questionnaire (median 10.7 years; mean 11.9 years) after CPM. There were 403 (69%) patients who underwent reconstruction and 180 (31%) patients who did not. Women electing reconstruction were younger [mean age 47 versus (vs.) 53 years; p = 0.01] and more likely to be married (85 vs. 78%; p = 0.048). Most women reported satisfaction with CPM (83%), and they would choose CPM again (84%) and make the same choice regarding reconstruction (73%). However, reconstruction patients demonstrated significantly lower satisfaction (p = 0.0001) and were less likely to choose CPM again (p < 0.0001). Within the reconstruction group, 39% needed 1 unplanned reoperation, which was strongly associated with lower satisfaction (p = 0.0001), lower likelihood of choosing CPM again (p = 0.006), and lower likelihood of choosing reconstruction again (p < 0.0001). There were 269 women who responded to the second questionnaire (median 18.4 years; mean 20.2 years after CPM). Satisfaction with CPM remained high, with 92% of the women stating they would choose CPM again.

CONCLUSIONS: Most women report stable long-term satisfaction with CPM. Women who had reconstruction and required reoperations in this historical cohort reported lower satisfaction.

PMID: 25192678  [PubMed - in process]
Recent studies suggest that this increase may be due to women choosing UM and CPM because of fear. We conducted an in-depth qualitative study to identify those factors influencing a woman's choice for more extensive surgery. METHODS: Semi-structured interviews were conducted with breast cancer patients to examine the experiences, decision making, and choice of UM ± CPM for the treatment of ESBC. Purposive sampling identified suitable candidates for breast-conserving therapy (BCT) who underwent UM ± CPM. Interviews were guided by grounded theory methodology, and constant comparative analysis identified key concepts and themes. RESULTS: Data saturation was achieved after 29 interviews. ‘Taking control of cancer’ was the dominant theme. Fear of breast cancer was expressed at diagnosis and remained throughout decision making. Personal experiences of family or friends ‘living with cancer’ were the most influential source of information during the decision-making process. Fear translated into an overestimated risk of recurrence, contralateral breast cancer (CBC), and death. Despite surgeons discussing equivalent survival with BCT, UM ± CPM patients believed that by choosing UM ± CPM they would eliminate recurrence, CBC and live longer. By choosing more extensive surgery, women were actively trying to control cancer outcomes as more surgery was believed to offer greater survival. CONCLUSIONS: Women seek UM and CPM to take control of cancer and manage their fear. It is important for surgeons to understand how personal experiences shape women's choice for UM ± CPM to facilitate informed decision making.

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Growing Use of Mastectomy for Ductal Carcinoma-In Situ of the Breast Among Young Women in the United States.

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BACKGROUND: Ductal carcinoma-in situ (DCIS) is a preinvasive form of breast cancer associated with excellent outcomes after either mastectomy or breast conservation therapy. Previous studies have demonstrated declining rates of mastectomy. However, it is unclear how this pattern has changed in recent years. METHODS: Women with DCIS were identified within the National Cancer Data Base. Patients treated with lumpectomy with or without radiotherapy were compared to women treated with mastectomy on the basis of demographic, clinicopathologic, and reporting facility details using χ² tests and multivariable logistic regression modeling to identify factors that may influence surgical choice. Changes in the proportion of women receiving contralateral prophylactic mastectomy (CPM) were assessed in a similar fashion.
RESULTS: We identified 212,936 women diagnosed with DCIS between 1998 and 2011. Lumpectomy was performed in 68\% (144,681) of patients. Mastectomy rates initially declined from 1998 (36\%) through 2004 (28\%), before increasing again through 2011 (33\%). Younger patient age, greater medical comorbidity, more extensive disease, higher tumor grade, treatment at an academic facility, and greater distance from the reporting facility were associated with heightened use of mastectomy (all p < 0.001). CPM also increased over time, particularly among younger patients, on multivariate analysis (p < 0.001).

CONCLUSIONS: Mastectomy utilization appears to be rising between 2004 and 2011, particularly among younger patients and those with higher-risk histopathologic features. CPM is increasing in a similar fashion. Further research is needed to understand the drivers of this change.

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Factors associated with contralateral preventive mastectomy.

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INTRODUCTION: Contralateral prophylactic mastectomy (CPM) is an option for women who wish to reduce their risk of breast cancer or its local recurrence. There is limited data on demographic differences among patients who choose to undergo this procedure.

METHODS: The population-based Florida cancer registry, Florida's Agency for Health Care Administration data, and US census data were linked and queried for patients diagnosed with invasive breast cancer from 1996 to 2009. The main outcome variable was the rate of CPM. Primary predictors were race, ethnicity, socioeconomic status (SES), marital status and insurance status.

RESULTS: Our population was 91.1\% White and 7.5\% Black; 89.1\% non-Hispanic and
10.9% Hispanic. Out of 21,608 patients with a single unilateral invasive breast cancer lesion, 837 (3.9%) underwent CPM. Significantly more White than Black (3.9% vs 2.8%; P<0.001) and more Hispanic than non-Hispanic (4.5% vs 3.8%; P=0.0909) underwent CPM. Those in the highest SES category had higher rates of CPM compared to the lowest SES category (5.3% vs 2.9%; P<0.001). In multivariate analyses, Blacks compared to Whites (OR =0.59, 95% CI =0.42-0.83, P=0.002) and uninsured patients compared to privately insured (OR =0.60, 95% CI =0.36-0.98, P=0.043) had significantly less CPM.

CONCLUSION: CPM rates were significantly different among patients of different race, socio-economic class, and insurance coverage. This observation is not accounted for by population distribution, incidence or disease stage. More in-depth study of the causes of these disparities in health care choice and delivery is critically needed.

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Rates of contralateral risk-reducing mastectomy have increased substantially over the last decade. Surgical oncologists are often in the frontline, dealing with requests for this procedure. This paper reviews the current evidence base regarding contralateral breast cancer, assesses the various risk-reducing strategies, and evaluates the cost-effectiveness of contralateral risk-reducing mastectomy.

PMCID: PMC4322656
PMID: 25692038 [PubMed - in process]
Better contralateral breast cancer risk estimation and alternative options to contralateral prophylactic mastectomy.

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The incidence of contralateral prophylactic mastectomy (CPM) has increased among women with breast cancer, despite uncertain survival benefit and a declining incidence of contralateral breast cancer (CBC). Patient-related reasons for undergoing CPM include an overestimation of the risk of CBC, increased cancer worry, and a desire to improve survival. We summarize the existing literature on CBC risk and outcomes and the clinical benefit of CPM among women with unilateral breast cancer who have a low-to-moderate risk of developing a secondary cancer in the contralateral breast. Published studies were retrieved from the MEDLINE database with the keywords "contralateral breast cancer" and "contralateral prophylactic mastectomy". These include observational studies, clinical trials, survival analyses, and decision models examining the risk of CBC, the clinical and psychosocial effects of CPM, and other treatment strategies to reduce CBC risk. Studies that have evaluated CBC risk estimate it to be approximately 0.5% annually on average. Patient-related factors associated with an increased risk of CBC include carriers of BRCA1/2 mutations, young age at breast cancer, and strong family history of breast cancer in the absence of a BRCA1/2 mutation. Although CPM reduces the risk of CBC by approximately 94%, it may not provide a significant gain in overall survival and there is conflicting evidence that it improves disease-free survival among women with breast cancer regardless of estrogen receptor (ER) status. Therefore, alternative strategies such as the use of tamoxifen or aromatase inhibitors, which reduce the risk of CBC by approximately 50%, should be encouraged for eligible women with ER-positive breast cancers. Future research is needed to evaluate the impact of decision and educational tools that can be used for personalized counseling of patients regarding their CBC risk, the uncertain role of CPM, and alternative CBC risk reduction strategies.

PMCID: PMC4324540
PMID: 25678823 [PubMed]
Prophylactic mastectomy generally occurs in two different patient populations: (1) high-risk women without breast cancer who undergo bilateral prophylactic mastectomy (BPM) to reduce their risk of developing breast cancer and (2) women with unilateral breast cancer who choose contralateral prophylactic mastectomy (CPM) to prevent cancer in the contralateral breast. The purpose of this article is to review the indications, outcomes, and trends in the use of BPM and CPM.

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Angelina Jolie and medical decision science.

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Cancer information seeking in the digital age: effects of Angelina Jolie's prophylactic mastectomy announcement.
OBJECTIVE: This study used digital surveillance to examine the impact of Angelina Jolie's prophylactic mastectomy announcement on cancer information seeking.

METHODS: We analyzed 4 categories of breast cancer-related Internet search queries from 2010 to 2013 in the United States.

RESULTS: Compared with the preceding 6 weeks, general information queries were 112% (95% confidence interval [CI], 79-146) higher the day of the announcement and remained 35% (95% CI, 22-49) higher over the week after the editorial. Risk assessment queries were 165% (95% CI, 110-222) higher the day of the announcement and 52% (95% CI, 31-75) higher across the week. Genetics and treatment queries showed little volume before the announcement but increased 2154% (95% CI, 1550-7076) and 9900% (95% CI, 3196-1,064,000) the day of, respectively, and remained higher across the week (812% [95% CI, 402-3913] and 2625% [95% CI, 551-317,000]). All query categories returned to normal volumes by the beginning of the second week.

CONCLUSION: Jolie's unique announcement spurred significant information seeking about breast cancer genetic testing and treatment procedures, although the surge in queries returned to preannouncement levels after 1 week. Future research should apply digital methods to advance our understanding of cancer information seeking in the digital age.
OBJECTIVE: To examine whether contralateral prophylactic mastectomy (CPM) is associated with improved survival, incidence of contralateral breast cancer (CBC), and recurrence in patients with unilateral breast cancer (UBC).

BACKGROUND: Despite conflicting data, CPM rates continue to increase. Here we present the first meta-analysis to assess post-CPM outcomes in women with UBC.

METHODS: We searched 5 databases and retrieved papers’ bibliographies for relevant studies published through March 2012. Fixed- and random-effects meta-analyses were conducted on the basis of tests of study heterogeneity. We examined potential confounding via stratification and meta-regression. We report pooled relative risks (RRs) and risk differences (RDs) with 95% confidence intervals (CIs) at 2-tailed P < 0.05 significance.

RESULTS: Of 93 studies reviewed, 14 were included in meta-analyses. Compared with nonrecipients, CPM recipients had higher rates of overall survival [OS; RR = 1.09 (95% CI: 1.06, 1.11)] and lower rates of breast cancer-specific mortality [BCM; RR = 0.69 (95% CI: 0.56, 0.85)] but saw no absolute reduction in risk of metachronous CBC (MCBC). Among patients with elevated familial/genetic risk (FGR, ie, BRCA carrier status and/or family history of breast cancer), both relative and absolute risks of MCBC were significantly decreased among CPM recipients [RR = 0.04 (95% CI: 0.02, 0.09); RD = -24.0% (95% CI: -35.6%, -12.4%)], but there was no improvement in OS or BCM.

CONCLUSIONS: CPM is associated with decreased MCBC incidence but not improved survival among patients with elevated FGR. The superior outcomes observed when comparing CPM recipients with nonrecipients in the general population are likely not attributable to a CPM-derived decrease in MCBC incidence. UBC patients without known FGR should not be advised to undergo CPM.

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Rate of contralateral prophylactic mastectomy is influenced by preoperative MRI recommendations.

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BACKGROUND: Women with breast cancer increasingly undergo contralateral prophylactic mastectomy (CPM). We evaluated the relationship between preoperative magnetic resonance imaging (MRI) findings and CPM. Other clinicopathologic variables associated with CPM choice and the pathology found in the contralateral breast are also reported.

METHODS: Newly diagnosed breast cancer patients were prospectively enrolled in the University of Iowa Breast Molecular Epidemiology Resource. Patients with stages 0-III breast cancer who underwent mastectomy for the index cancer were eligible for this analysis. Univariate logistic regression and a multivariate model were used to identify factors predictive of CPM.

RESULTS: Among 134 patients (mean age 54.9 years), 53 (39.6 %) chose CPM. On univariate analysis, patients undergoing CPM were more likely to have a preoperative breast MRI (64.2 vs. 39.5 %, p = 0.006) and to have follow-up testing recommended for the contralateral breast (28.3 vs. 4.9 %, p = 0.001). Univariate analysis also associated CPM with younger age (p < 0.0001), BRCA testing (p < 0.0001), BRCA mutation (p = 0.034) and reconstruction performed (p = 0.001). Median age of youngest child at diagnosis varied significantly between the CPM (15.9 years) and non-CPM (24.3 years) groups (p = 0.0018). On multivariate analysis, MRI follow-up recommendation, young age, reconstruction and human epidermal growth factor receptor 2 (HER2) positivity of the index cancer were significantly associated with CPM. Of the CPM specimens, one (1.8 %) had ductal carcinoma-in situ, which had not been identified on MRI.

CONCLUSIONS: Abnormal findings in the contralateral breast on preoperative MRI, as well as young age, reconstruction and HER2-positive status correlated with CPM choice in this cohort. Occult malignancy was rare.

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Increasing trend of contralateral prophylactic mastectomy: what are the factors behind this phenomenon?

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INTRODUCTION: Numerous studies have shown a trend towards increasing rates of contralateral prophylactic mastectomy (CPM) in the US. In this review, we will explore the trend, possible causative factors and outcomes from CPM.

METHODS: We performed a literature review of all relevant retrospective reviews, clinical trials and review articles regarding contralateral prophylactic mastectomy.
mastectomy.

RESULTS: Several studies have noted a four to fivefold increase in CPM in recent years; an increase most notable in younger patients. When surveyed, patients report that the most important factors affecting their choice of CPM include fear of cancer recurrence, genetic counseling/testing, family history or additional high risk factors, stress surrounding close follow up, the availability of reconstructive surgery and information provided about contralateral breast cancer (CBC) risk and risk for local recurrence. Women who have undergone CPM do report high satisfaction with the procedure and some studies suggest risk reduction.

CONCLUSION: CPM rates have increased across the US and numerous factors have been reported to increase the likelihood of choosing CPM. Despite that bilateral mastectomy is associated with an increased risk of wound and overall postoperative complications for certain populations, this surgery appears to have psychological, cosmetic and possibly oncologic benefit.

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Celebrity disclosures and information seeking: the case of Angelina Jolie.

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Purpose: On 14 May 2013, actress Angelina Jolie disclosed that she had a BRCA1 mutation and underwent a prophylactic bilateral mastectomy. This study documents the impact of her disclosure on information-seeking behavior, specifically that regarding online genetics and risk reduction resources available from the National Cancer Institute. Methods: Using Adobe Analytics, daily page views for 11 resources were tracked from 23 April 2013 through 25 June 2013. Usage data were also obtained for four resources over a 2-year period (2012-2013). Source of referral that viewers used to locate a specific resource was also examined. Results: There was a dramatic and immediate increase in traffic to the National Cancer Institute's online resources. The Preventive Mastectomy fact sheet received 69,225 page views on May 14, representing a 795-fold increase as compared with the previous Tuesday. A fivefold increase in page views was observed for the PDQ Genetics of Breast and Ovarian Cancer summary in the same time frame. A substantial increase, from 0 to 49%, was seen in referrals from
news outlets to four resources from 7 May to 14 May.

Conclusion: Celebrity disclosures can dramatically influence online information-seeking behaviors. Efforts to capitalize on these disclosures to ensure easy access to accurate information are warranted. Genetics in Medicine (2014); doi:10.1038/gim.2014.141.

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Contralateral prophylactic mastectomy provides no survival benefit in young women with estrogen receptor-negative breast cancer.

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BACKGROUND: Several studies have shown that contralateral prophylactic mastectomy (CPM) provides a disease-free and overall survival (OS) benefit in young women with estrogen receptor (ER)-negative breast cancer. We utilized the National Cancer Data Base to evaluate CPM's survival benefit for young women with early-stage breast cancer in the years that ER status was available.

METHODS: We selected 14,627 women ≤45 years of age with American Joint Committee on Cancer stage I-II breast cancer who underwent unilateral mastectomy or CPM from 2004 to 2006. Five-year OS was compared between those who had unilateral mastectomy and CPM using the Kaplan-Meier method and Cox regression analysis.

RESULTS: A total of 10,289 (70.3 %) women underwent unilateral mastectomy and 4,338 (29.7 %) women underwent CPM. Median follow up was 6.1 years. After adjusting for patient age, race, insurance status, co-morbidities, year of diagnosis, ER status, tumor size, nodal status, grade, histology, facility type, facility location, use of adjuvant radiation and chemohormonal therapy, there was no difference in OS in women <45 years of age who underwent CPM compared with those who underwent unilateral mastectomy (hazard ratio [HR] = 0.93; p = 0.39).

In addition, there was no improvement in OS in women <45 years of age with T1N0 tumors who underwent CPM versus unilateral mastectomy (HR = 0.85; p = 0.37) after adjusting for the aforementioned factors. Among women ≤45 years of age with ER-negative tumors who underwent CPM, there was no improvement in OS compared with women who underwent unilateral mastectomy (HR = 1.12; p = 0.32) after adjusting for the same aforementioned factors.

CONCLUSIONS: CPM provides no survival benefit to young patients with early-stage breast cancer, and no benefit to ER-negative patients. Future studies with longer follow-up are required in this cohort of patients.
Increasing mastectomy rates—the effect of environmental factors on the choice for mastectomy: a comparative analysis between Canada and the United States.

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PURPOSE: Unilateral mastectomy (UM) and contralateral prophylactic mastectomy (CPM) for early-stage breast cancer (ESBC) have been increasing. Numerous etiological factors for this rise have been suggested, including increasing use of magnetic resonance imaging (MRI) and reconstruction, surgeon's preference, and patient's choice. We conducted a qualitative study to explore what role the surgeon and their practice environment play in the increasing rates.

METHODS: Semi-structured interviews were conducted with general surgeons to explore their current approach to treating ESBC and their experience with women requesting mastectomy. Purposive sampling identified surgeons across Ontario, Canada, and the United States (US). Constant comparative analysis identified key concepts.

RESULTS: Data saturation was achieved after 45 interviews. 'The effect of external factors on rising mastectomy rates' was the dominant theme. All surgeons described increasing mastectomy rates over the last 5 years, and all surgeons discussed breast-conserving therapy (BCT) and UM as equivalent options. However, US surgeons discussed reconstruction early in the consultation process, reflecting legislative requirements. In contrast, Ontario surgeons discussed reconstruction only when a patient was considering mastectomy. Ontario surgeons often recommended BCT, whereas US surgeons rarely made a direct recommendation regarding the extent of surgery. Neither US nor Canadian surgeons recommended the use of UM + CPM in average-risk ESBC, and all surgeons described women initiating this request. MRI use and access to immediate breast reconstruction also impacted the choice for mastectomy.

CONCLUSIONS: Use of MRI, access to reconstruction, and legislative requirements regarding information disclosure, appeared to influence the surgical consultation process and the patient's request for CPM.

PMID: 25081340  [PubMed - in process]
Contralateral prophylactic mastectomy and survival: an ongoing challenge.

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Comment on
PMID: 25047481 [PubMed - in process]


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Comment in

BACKGROUND: Rates of contralateral prophylactic mastectomy (CPM) in women with breast cancer have increased, but most studies fail to show a survival benefit. We evaluated survival among CPM patients compared to patients undergoing single mastectomy (SM).

METHODS: The Surveillance, Epidemiology, and End Results database was used to identify unilateral breast cancer patients who underwent mastectomy with/without CPM from 1998 to 2010. Case-control analysis was performed with CPM cases matched to SM controls on the basis of age group, race/ethnicity, extent of surgery, grade, T classification, N classification, estrogen receptor status, and propensity score. Survival analyses included Kaplan-Meier curves and univariate and multivariate proportional hazard models to determine factors associated with disease-specific (DSS) and overall survival (OS).

RESULTS: A total of 26,526 CPM patients were identified. On multivariate regression analysis, increasing age, greater extent of surgery, increasing T and N stage, African American race, Hispanic ethnicity, poorly differentiated grade, and estrogen receptor negativity were associated with increased risk of death. CPM was associated with improved DSS (HR 0.86, 95 % CI 0.79-0.93) and even greater OS (HR 0.76, 95 % CI 0.71-0.81) compared with SM. Contralateral breast cancer (CBC) occurred in 1.6 % of women in the cohort. Removing CBC cases from
analysis had little impact on CPM DSS (HR 0.86, 95 % CI 0.79-0.93) and OS (0.77, 95 % CI 0.72-0.82) suggesting that prevention of CBC by CPM does not explain the observed survival benefit.

CONCLUSIONS: CPM rates continue to rise. The improved DSS and OS observed with CPM support selection bias. Prospective trials are needed to determine cohorts of patients most likely to benefit from CPM.

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Incremental risk associated with contralateral prophylactic mastectomy and the effect on adjuvant therapy.

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BACKGROUND: Contralateral prophylactic mastectomy (CPM) is expected to add surgical morbidity but this incremental risk has not yet been defined. We sought to quantify the additional risks associated with CPM and determine how these risks influence the time to adjuvant therapy.

METHODS: We identified women undergoing mastectomy for unilateral breast cancer and stratified them according to the use of CPM and the presence and laterality of surgical complications. We measured time to adjuvant therapy.

RESULTS: Of 352 patients, 205 (58 %) underwent unilateral mastectomy (UM) and 147 (42 %) underwent bilateral mastectomy (BM) [BM = UM + CPM]. Overall, 94/352 (27 %) women suffered 112 complications [BM: 46/147 (31 %) vs. UM: 48/205 [23 %]; p = 0.11), of which hematoma, skin necrosis, cellulitis, or seroma accounted for 94/112 (84 %) complications. Reoperation was required in 37/352 (10 %) women. Among those undergoing BM, morbidity occurred only in the prophylactic breast in 19/147 (13 %) women and risk did not differ with immediate reconstruction (13/108 [12 %]) or without (6/39 [15 %]). Of these 19 patients, 10 (53 %) required reoperation. Women with any complication had a longer interval to adjuvant therapy when compared with those without (49 days vs. 40 days; p < 0.001). When stratified according to side, complications in the prophylactic breast were not associated with a delay in treatment (UM: 58 days vs. BM: prophylactic side; 41 days vs. BM: cancer side: 50 days; p = 0.73).

CONCLUSIONS: CPM confers additional morbidity in one in eight women, of whom half require reoperation. Despite this, in our series CPM did not delay adjuvant therapy. Given the rising incidence of patients seeking CPM, they should be informed of this risk.

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Predictors that influence contralateral prophylactic mastectomy election among women with ductal carcinoma in situ who were evaluated for BRCA genetic testing.


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BACKGROUND: Patients with ductal carcinoma in situ (DCIS) are at increased risk for developing contralateral breast cancer (CBC). Consequently, more women with DCIS are electing to undergo contralateral prophylactic mastectomy (CPM). We evaluated factors associated with CPM in patients with DCIS who underwent genetic counseling for BRCA testing.

METHODS: This retrospective study involved 165 women with DCIS referred for genetic counseling between 2003 and 2011. Patient characteristics were age, marital and educational status, tumor markers, nuclear grade, family history of breast cancer (BC) and ovarian cancer (OC), race, Ashkenazi Jewish ancestry, and BRCA results. Univariate and multivariate logistic regression analyses were used to determine predictive factors associated with CPM election.

RESULTS: Of 165 patients, 44 (27%) underwent CPM. Patients <45 years of age were more likely to elect CPM (p = 0.0098). A BRCA+ mutation was found in 17 patients (10.3%), and BRCA+ women were more likely to elect CPM than BRCA or untested women (p = 0.0001). Patients who had a family history of OC (57.7%) were more likely to choose CPM than those with no family history (p = 0.0004). Younger age, BRCA+, and an OC family history remained significant in the multivariate model (p < 0.008).

CONCLUSION: The CPM rate among patients with DCIS who undergo genetic counseling is high. Factors associated with increased likelihood of CPM among this group were age, BRCA+, and a family history of OC. Further studies are needed to evaluate patients' perceptions of CBC risk and their role in the likelihood of CPM choice.

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The Angelina Jolie effect: how high celebrity profile can have a major impact on provision of cancer related services.
INTRODUCTION: It is frequent for news items to lead to a short lived temporary increase in interest in a particular health related service, however it is rare for this to have a long lasting effect. In 2013, in the UK in particular, there has been unprecedented publicity in hereditary breast cancer, with Angelina Jolie’s decision to have genetic testing for the BRCA1 gene and subsequently undergo risk reducing mastectomy (RRM), and a pre-release of the NICE guidelines on familial breast cancer in January and their final release on 26th June. The release of NICE guidelines created a lot of publicity over the potential for use of chemoprevention using tamoxifen or raloxifene. However, the longest lasting news story was the release of details of film actress Angelina Jolie's genetic test and surgery.

METHODS: To assess the potential effects of the 'Angelina Jolie' effect, referral data specific to breast cancer family history was obtained from around the UK for the years 2012 and 2013. A consortium of over 30 breast cancer family history clinics that have contributed to two research studies on early breast surveillance were asked to participate as well as 10 genetics centres. Monthly referrals to each service were collated and increases from 2012 to 2013 assessed.

RESULTS: Data from 12 family history clinics and 9 regional genetics services showed a rise in referrals from May 2013 onwards. Referrals were nearly 2.5 fold in June and July 2013 from 1,981 (2012) to 4,847 (2013) and remained at around two-fold to October 2013. Demand for BRCA1/2 testing almost doubled and there were also many more enquiries for risk reducing mastectomy. Internal review shows that there was no increase in inappropriate referrals.

CONCLUSIONS: The Angelina Jolie effect has been long lasting and global, and appears to have increased referrals to centres appropriately.

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Use of and mortality after bilateral mastectomy compared with other surgical treatments for breast cancer in California, 1998-2011.

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Author information:
IMPORTANCE: Bilateral mastectomy is increasingly used to treat unilateral breast cancer. Because it may have medical and psychosocial complications, a better understanding of its use and outcomes is essential to optimizing cancer care.

OBJECTIVE: To compare use of and mortality after bilateral mastectomy, breast-conserving therapy with radiation, and unilateral mastectomy.

DESIGN, SETTING, AND PARTICIPANTS: Observational cohort study within the population-based California Cancer Registry; participants were women diagnosed with stages 0-III unilateral breast cancer in California from 1998 through 2011, with median follow-up of 89.1 months.

MAIN OUTCOMES AND MEASURES: Factors associated with surgery use (from polytomous logistic regression); overall and breast cancer-specific mortality (from propensity score weighting and Cox proportional hazards analysis).

RESULTS: Among 189,734 patients, the rate of bilateral mastectomy increased from 2.0% (95% CI, 1.7%-2.2%) in 1998 to 12.3% (95% CI, 11.8%-12.9%) in 2011, an annual increase of 14.3% (95% CI, 13.1%-15.5%); among women younger than 40 years, the rate increased from 3.6% (95% CI, 2.3%-5.0%) in 1998 to 33% (95% CI, 29.8%-36.5%) in 2011. Bilateral mastectomy was more often used by non-Hispanic white women, those with private insurance, and those who received care at a National Cancer Institute (NCI)-designated cancer center (8.6% [95% CI, 8.1%-9.2%] among NCI cancer center patients vs 6.0% [95% CI, 5.9%-6.1%] among non-NCI cancer center patients; odds ratio [OR], 1.13 [95% CI, 1.04-1.22]); in contrast, unilateral mastectomy was more often used by racial/ethnic minorities (Filipina, 52.8% [95% CI, 51.6%-54.0%]; OR, 2.00 [95% CI, 1.90-2.11] and Hispanic, 45.6% [95% CI, 45.0%-46.2%]; OR, 1.16 [95% CI, 1.13-1.20]) vs non-Hispanic white, 35.2% [95% CI, 34.9%-35.5%]) and those with public/Medicaid insurance (48.4% [95% CI, 47.8%-48.9%]; OR, 1.08 [95% CI, 1.05-1.11] vs private insurance, 36.6% [95% CI, 36.3%-36.8%]). Compared with breast-conserving surgery with radiation (10-year mortality, 16.8% [95% CI, 16.6%-17.1%]), unilateral mastectomy was associated with higher all-cause mortality (hazard ratio [HR], 1.35 [95% CI, 1.32-1.39]; 10-year mortality, 20.1% [95% CI, 19.9%-20.4%]). There was no significant mortality difference compared with bilateral mastectomy (HR, 1.02 [95% CI, 0.94-1.11]; 10-year mortality, 18.8% [95% CI, 18.6%-19.0%]). Propensity analysis showed similar results.

CONCLUSIONS AND RELEVANCE: Use of bilateral mastectomy increased significantly throughout California from 1998 through 2011 and was not associated with lower mortality than that achieved with breast-conserving surgery plus radiation. Unilateral mastectomy was associated with higher mortality than were the other 2 surgical options.
Changes over time in the utilization of disease-related Internet information in newly diagnosed breast cancer patients 2007 to 2013.

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BACKGROUND: As the number of people with Internet access rises, so does the use of the Internet as a potentially valuable source for health information. Insight into patient use of this information and its correlates over time may reveal changes in the digital divide based on patient age and education. Existing research has focused on patient characteristics that predict Internet information use and research on treatment context is rare.

OBJECTIVE: This study aims to (1) present data on the proportion of newly diagnosed breast cancer patients treated in German breast centers from 2007 to 2013 who used the Internet for information on their disease, (2) look into correlations between Internet utilization and sociodemographic characteristics and if these change over time, and (3) determine if use of Internet information varies with the hospitals in which the patients were initially treated.

METHODS: Data about utilization of the Internet for breast cancer-specific health information was obtained in a postal survey of breast cancer patients that is conducted annually in Germany with a steady response rate of 87% of consenting patients. Data from the survey were combined with data obtained by hospital personnel (e.g., cancer stage and type of surgery). Data from 27,491 patients from 7 consecutive annual surveys were analyzed for this paper using multilevel regression modeling to account for clustering of patients in specific hospitals.

RESULTS: Breast cancer patients seeking disease-specific information on the Internet increased significantly from 26.96% (853/3164) in 2007 to 37.21% (1485/3991) in 2013. Similar patterns of demographic correlates were found for all 7 cohorts. Older patients (≥70 years) and patients with <10 years of formal education were less likely to use the Internet for information on topics related to their disease. Internet use was significantly higher among privately insured patients and patients living with a partner. Higher cancer stage and a foreign native language were associated with decreased use in the overall model. Type of surgery was not found to be associated with Internet use in the multivariable models. Intraclass correlation coefficients were small (0.00-0.03) suggesting only a small contribution of the hospital to the patients’ decision to use Internet information. There was no clear indication of a decreased digital divide based on age and education.

CONCLUSIONS: Use of the Internet for health information is on the rise among breast cancer patients. The strong age- and education-related differences raise
the question of how relevant information can be adequately provided to all patients, especially to those with limited education, older age, and living without a partner.

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Predictors of eHealth usage: insights on the digital divide from the Health Information National Trends Survey 2012.

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BACKGROUND: Recent eHealth developments have elevated the importance of assessing the extent to which technology has empowered patients and improved health, particularly among the most vulnerable populations. With noted disparities across racial and social groups in chronic health outcomes, such as cancer, obesity, and diabetes, it is essential that researchers examine any differences in the implementation, uptake, and impact of eHealth strategies across groups that bear a disproportionate burden of disease.

OBJECTIVE: The goal was to examine eHealth use by sociodemographic factors, such as race/ethnicity, socioeconomic status (SES), age, and sex.

METHODS: We drew data from National Cancer Institute's 2012 Health Information National Trends Survey (HINTS) (N=3959) which is publicly available online. We estimated multivariable logistic regression models to assess sociodemographic predictors of eHealth use among adult Internet users (N=2358) across 3 health communication domains (health care, health information-seeking, and user-generated content/sharing).

RESULTS: Among online adults, we saw no evidence of a digital use divide by race/ethnicity. However, there were significant differences in use by SES, particularly for health care and health information-seeking items. Patients with lower levels of education had significantly lower odds of going online to look for a health care provider (high school or less: OR 0.50, 95% CI 0.33-0.76) using email or the Internet to communicate with a doctor (high school or less: OR 0.46, 95% CI 0.29-0.72), tracking their personal health information online (high school or less: OR 0.53, 95% CI 0.32-0.84), using a website to help track diet, weight, and physical activity (high school or less: OR 0.64, 95% CI 0.42-0.98; some college: OR 0.67, 95% CI 0.49-0.93), or downloading health information to a mobile device (some college: OR 0.54, 95% CI 0.33-0.89). Being female was a consistent predictor of eHealth use across health care and user-generated content/sharing domains, whereas age was primarily influential for health information-seeking.
CONCLUSIONS: This study illustrates that lower SES, older, and male online US adults were less likely to engage in a number of eHealth activities compared to their counterparts. Future studies should assess issues of health literacy and eHealth literacy and their influence on eHealth engagement across social groups. Clinical care and public health communication efforts attempting to leverage Web 2.0 and 3.0 platforms should acknowledge differential eHealth usage to better address communication inequalities and persistent disparities in health.

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Angelina Jolie's faulty gene: newspaper coverage of a celebrity's preventive bilateral mastectomy in Canada, the United States, and the United Kingdom.

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PURPOSE: This study investigates the portrayal of Angelina Jolie's preventive bilateral mastectomy in the news media. Content analysis of print news was conducted to identify major frames used in press coverage, the overall tone of discussions, how journalists report broader questions about BRCA1/2 testing and hereditary breast/ovarian cancer, and whether they raise concerns about the impact of celebrities on patients' choices and public opinion.

METHODS: The Factiva database was used to collect publications on Jolie's preventive mastectomy in elite newspapers in Canada, the United States, and the United Kingdom. The data set consisted of 103 newspaper articles published in the first month of media coverage.

RESULTS: The results show that although the press discussed key issues surrounding predictive genetic testing and preventive options for women at high risk of hereditary breast/ovarian cancer, important medical information about the rarity of Jolie's condition was not communicated to the public.

CONCLUSION: The results highlight the media's overwhelmingly positive slant toward Jolie's mastectomy, while overlooking the relative rarity of her situation, the challenges of "celebrity medicine," and how celebrities influence people's medical decisions. Future research is required to investigate whether the media hype has influenced demand and use of BRCA1/2 testing and preventive mastectomies.

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The Angelina effect: immediate reach, grasp, and impact of going public.

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BACKGROUND: In May 2013, Angelina Jolie revealed in a New York Times opinion piece that she had undergone a preventive double mastectomy because she had a family history of cancer and carried a rare mutation of the BRCA1 gene. Media coverage has been extensive, but it is not obvious what messages the public took from this personal health story.

METHODS: We conducted a survey with a representative national online panel of 2,572 adults. Participants described their awareness and identified information sources for the Angelina Jolie news story. They also reported their understanding, reactions, perceptions, and subsequent activities related to the story. We asked questions pertaining to personal and societal breast cancer risk and hypothetical questions regarding preventive surgery if the respondent or a family member were in the same position as Ms Jolie. Demographic information was collected, as was family risk for breast and ovarian cancer, and a gauge of numeracy.

RESULTS: While three of four Americans were aware of Angelina Jolie's double mastectomy, fewer than 10% of respondents had the information necessary to accurately interpret Ms Jolie's risk of developing cancer relative to a woman unaffected by the BRCA gene mutation. Awareness of the Angelina Jolie story was not associated with improved understanding.

CONCLUSION: While celebrities can bring heightened awareness to health issues, there is a need for these messages to be accompanied by more purposeful communication efforts to assist the public in understanding and using the complex diagnostic and treatment information that these stories convey.

PMID: 24357847  [PubMed - indexed for MEDLINE]
BACKGROUND: Young patients with breast cancer represent a unique cohort of patients who often have different treatment plans than older patients. We hypothesized that the rates of contralateral prophylactic mastectomy (CPM) were significantly higher and those of lumpectomy were significantly lower in young patients compared with older patients and that this trend persists when adjusting for patient, tumor, and facility factors.

STUDY DESIGN: We used the National Cancer Data Base (NCDB) to study 553,593 patients from all ages with American Joint Committee on Cancer (AJCC) stage 0 to II breast tumors, who underwent lumpectomy, unilateral mastectomy, or CPM from 2003 to 2010.

RESULTS: Over the entire cohort, lumpectomy rates decreased from 67.7% in 2003 to 66.4% in 2010 in contrast to women 45 years old or less, in whom the lumpectomy rates went from 61.3% in 2003 to 49.4% in 2010. Unilateral mastectomy went from 28.2% to 23.9% and CPM from 4.1% to 9.7% compared with women 45 years old or less, in whom unilateral mastectomy rates went from 29.3% to 26.4% and CPM rates from 9.3% to 26.4%. Age was the most significant factor related to increasing CPM rates: 19.7% of women between 41 and 45 years old underwent CPM vs 5.1% of women between 66 and 70 years old. There was substantial regional variation in surgical procedures for young women: lumpectomy rates were lowest in the West and CPM rates were highest in the Midwest. Multivariate logistic regression showed that women 45 years old or younger compared with women more than 45 years who underwent CPM were more likely to be Caucasian, treated at an academic/research institution, have larger tumors, higher grade, higher stage, and lobular histology.

CONCLUSIONS: The rate of CPM continues to increase, with one-quarter of younger women undergoing CPM. This trend persists across all patient, tumor, and facility characteristics.

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Prophylactic bilateral mastectomy and contralateral prophylactic mastectomy.

Chagpar AB(1).
With increasing public awareness of the risk for breast cancer and modern techniques of reconstruction, the option of surgical prophylaxis for risk reduction is becoming increasingly popular. Bilateral prophylactic mastectomy for women at increased risk of developing breast cancer and contralateral prophylactic mastectomy for those with unilateral breast cancer seeking symmetry, risk reduction, and ease of follow-up are acceptable options for many women. However, prophylactic surgery is not an inconsequential decision, and careful consideration should be given to the risks and benefits of such procedures.

IMPORANCE The growing rate of contralateral prophylactic mastectomy (CPM) among women diagnosed as having breast cancer has raised concerns about potential for overtreatment. Yet, there are few large survey studies of factors that affect women’s decisions for this surgical treatment option. OBJECTIVE To determine factors associated with the use of CPM in a population-based sample of patients with breast cancer. DESIGN, SETTING, AND PARTICIPANTS A longitudinal survey of 2290 women newly diagnosed as having breast cancer who reported to the Detroit and Los Angeles Surveillance, Epidemiology, and End Results registries from June 1, 2005, to February 1, 2007, and again 4 years later (June 2009 to February 2010) merged with Surveillance, Epidemiology, and End Results registry data (n = 1536). Multinomial logistic regression was used to evaluate factors associated with type of surgery. Primary independent variables included clinical
indications for CPM (genetic mutation and/or strong family history), diagnostic magnetic resonance imaging, and patient extent of worry about recurrence at the time of treatment decision making. MAIN OUTCOMES AND MEASURES Type of surgery received from patient self-report, categorized as CPM, unilateral mastectomy, or breast conservation surgery. RESULTS Of the 1447 women in the analytic sample, 18.9% strongly considered CPM and 7.6% received it. Of those who strongly considered CPM, 32.2% received CPM, while 45.8% received unilateral mastectomy and 22.8% received breast conservation surgery (BCS). The majority of patients (68.9%) who received CPM had no major genetic or familial risk factors for contralateral disease. Multivariate regression showed that receipt of CPM (vs either unilateral mastectomy or breast conservation surgery) was significantly associated with genetic testing (positive or negative) (vs UM, relative risk ratio [RRR]: 10.48; 95% CI, 3.61-3.48 and vs BCS, RRR: 19.10; 95% CI, 5.67-56.41; P = .001), a strong family history of breast or ovarian cancer (vs UM, RRR: 5.19; 95% CI, 2.34-11.56 and vs BCS, RRR: 4.24; 95% CI, 1.80-9.88; P = .001), receipt of magnetic resonance imaging (vs UM RRR: 2.07; 95% CI, 1.21-3.52 and vs BCS, RRR: 2.14; 95% CI, 1.28-3.58; P = .001), higher education (vs UM, RRR: 5.04; 95% CI, 2.37-10.71 and vs BCS, RRR: 4.38; 95% CI, 2.07-9.29; P = .001), and greater worry about recurrence (vs UM, RRR: 2.81; 95% CI, 1.14-6.88 and vs BCS, RRR: 4.24; 95% CI, 1.80-9.98; P = .001). CONCLUSIONS AND RELEVANCE Many women considered CPM and a substantial number received it, although few had a clinically significant risk of contralateral breast cancer. Receipt of magnetic resonance imaging at diagnosis contributed to receipt of CPM. Worry about recurrence appeared to drive decisions for CPM although the procedure has not been shown to reduce recurrence risk. More research is needed about the underlying factors driving the use of CPM.

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Contralateral prophylactic mastectomy: are we overtreating patients?
Patients with unilateral breast cancer are at increased risk for developing cancer in the contralateral breast. As a result, some patients choose contralateral prophylactic mastectomy (CPM) to prevent cancer in the contralateral breast. Several studies have reported that the CPM rates have markedly increased in recent years in the United States. In this article, we will discuss recent CPM trends, potential reasons patients choose CPM, outcomes after CPM, and alternative strategies for managing the increased risk of contralateral breast cancer among survivors of unilateral breast cancer. In addition, we will try to determine if women undergoing CPM are adequately informed about their decision.

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Bilateral breast cancers.

An increasingly large proportion of women with unilateral breast cancer are treated with bilateral mastectomy. The rationale behind bilateral surgery is to prevent a second primary breast cancer and thereby to avoid the resultant therapy and eliminate the risk of death from contralateral breast cancer. Bilateral mastectomy has been proposed to benefit women at high risk of contralateral cancer, such as carriers of BRCA1 and BRCA2 mutations, but for women without such mutations, the decision to remove the contralateral breast is controversial. It is important to evaluate the risk of contralateral breast cancer on an individual basis, and to tailor surgical treatment accordingly. On average, the annual risk of contralateral breast cancer is approximately 0.5%, but increases to 3% in carriers of a BRCA1 or BRCA2 mutation. Risk factors for contralateral breast cancer include a young age at first diagnosis of breast cancer and a family history of breast cancer. Contralateral mastectomy has not been proven to reduce mortality from breast cancer, but the benefit of such surgery is not expected to become apparent until the second decade after treatment. An alternative to contralateral mastectomy is adjuvant hormonal therapy (such as tamoxifen), but the extent of risk reduction is smaller (approximately 50%) compared to 95% or
more for contralateral mastectomy. This Review focuses on the risk factors for contralateral breast cancer, and discusses the evidence that bilateral mastectomy might reduce mortality in patients with unilateral breast cancer.

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Contralateral prophylactic mastectomy in an Asian population: a single institution review.

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BACKGROUND: Contralateral prophylactic mastectomy (CPM) removes the non-diseased breast in women who have unilateral breast cancer. This reduces the incidence of contralateral breast cancer, and potentially improves survival in high risk patients. Such surgical risk-reduction strategy is increasingly being adopted in the United States, despite a decreasing incidence of contralateral breast cancer. The use of CPM in an Asian population is yet unknown. We present the first Asian report on CPM rates and trends in Singapore, the country with the highest incidence of breast cancer in Asia.

METHODS: A retrospective review of all patients who had breast cancer surgery from 2001 to 2010 at the largest healthcare system in Singapore was performed. Patient demographics and tumour characteristics were analysed with regards to type of surgery performed. Factors associated with CPM were identified.

RESULTS: From 2001 to 2010, a total of 5130 patients underwent oncological breast surgery. A decreasing trend of mastectomies (82.7%-70.8%), an upward trend of breast conserving surgery (BCS) (17.3%-29.2%) and an increasing trend in CPM (0.46%-1.25%) is observed. Patients who opted for CPM are likely to be younger (48.4 ± 9.4 years), married (60%), parous (56.7%), with no family history of breast/ovarian cancer (66.7%), and diagnosed at an earlier stage. The rate of synchronous occult breast malignancy was found to be 10% (n = 30), and these were in patients who were of a low cancer-risk profile.

CONCLUSIONS: This retrospective study reflects an increasing incidence of breast cancer in Singapore, with a decrease in mastectomies, and an increase in BCS and CPM rates, similar to Western data. Similar to Western populations, the Asian
woman who opts for CPM is likely to be young and have an earlier stage of breast cancer. In contrast, the Asian woman is likely to have no family history of breast or ovarian cancers. Commonly cited reasons for increased CPM rates such as the increased availability of genetic counselling and pre-operative MRI evaluation, along with wide use of reconstruction, do not feature as dominant factors in our population, suggesting that the Asian patients may have different considerations when electing for CPM.

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Bilateral breast reconstruction with bipedicle transverse rectus abdominis myocutaneous (TRAM) flap for simultaneous delayed and immediate breast reconstruction after therapeutic modified radical mastectomy and prophylactic nipple sparing mastectomy.

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Contralateral prophylactic mastectomy (CPM) rate is increasing worldwide recently due to better understanding of genetic and hereditary breast cancer. The evolution of mastectomy technique from modified radical mastectomy to nipple sparing mastectomy with immediate or delayed breast reconstruction is also a potential cause of increasing mastectomy rate. This case report presents a young woman who had breast cancer at very young age then she decided for CPM due to her sister and mother are also breast cancer victim. We report clinical course and immediate outcome of the oncologic and reconstructive surgery in this case.

PMCID: PMC4115773
PMID: 25083498 [PubMed]


Predictors of contralateral prophylactic mastectomy and the impact on breast reconstruction.

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Author information:
BACKGROUND: Contralateral prophylactic mastectomy (CPM) is being performed with increased frequency. Predictors of CPM and their impact on breast reconstruction are examined.

METHODS: A retrospective review of a dually trained oncologic and plastic surgeon's experience with patients undergoing total mastectomy from 2002 to 2012 was performed. Patients who underwent bilateral therapeutic mastectomies or who had previous contralateral mastectomy were excluded from this series.

RESULTS: Four hundred forty-six patients were treated with total mastectomy and 174 (39%) underwent CPM. The incidence of CPM nearly tripled over the period studied. Compared to women treated with unilateral mastectomy, women who elected for CPM were younger (mean age, 50.4 vs 56.8 years, P < 0.001), leaner (mean body mass index, 26.1 vs 27.4 kg/m², P = 0.036), more often white (86.8% vs 73.8%, P = 0.004), and more often had a family history of breast cancer (52% vs 33.3%, P < 0.001). The CPM group was also more likely to have undergone a preoperative magnetic resonance imaging (56.3% vs 39%, P < 0.001) and to have stage I disease (31% vs 22.8%, P = 0.053). They were less likely to have undergone prior attempts at breast conservation (6.9% vs 15.8%, P = 0.004) and considerably more likely to pursue breast reconstruction (83.9% vs 63.6%, P < 0.001). Multivariate analysis confirmed age, white race, family history, prior attempt at breast conservation, and receipt of breast reconstruction to be independently associated with prophylactic mastectomy. Incidental contralateral cancers were discovered in 4% of women who underwent CPM (n = 7), lobular carcinoma in situ in 2.3% (n = 4), and atypical lesions in an additional 11.6% (n = 20). Women who underwent CPM favored reconstruction with breast implants (60.9% vs 17.3%), whereas the transverse rectus abdominis musculocutaneous flap predominated among their unilateral counterparts (38.6% vs 15.5%). Among women who underwent immediate breast reconstruction, the addition of a contralateral procedure expectedly increased breast complication rates (50.3% vs 35.0%, P = 0.007), especially the more severe complications that required hospitalization or reoperation (18.6% vs 5.0%, P < 0.001).

CONCLUSIONS: The incidence of CPM is increasing and is associated with younger age, white race, family history, and the use of breast reconstruction. Implant-based reconstructions predominate in this cohort. The added morbidity of a contralateral procedure is significant.

PMID: 24691345  [PubMed - indexed for MEDLINE]


Improved long-term survival with contralateral prophylactic mastectomy among young women.

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BACKGROUND: Despite mixed survival data, the utilization of contralateral prophylactic mastectomy (CPM) for the prevention of a contralateral breast cancer (CBC) has increased significantly over the last 15 years, especially among women less than 40. We set out to look at our own experience with CPM, focusing on outcomes in women less than 40, the sub-population with the highest cumulative lifetime risk of developing CBC. With an extended follow-up, we hoped to demonstrate differences in the long-term disease free survival (DFS) and overall survival (OS) among groups who underwent the procedure (CPM) versus those that did not (NCPM).

MATERIALS AND METHODS: We performed a retrospective review of all breast cancer patients less than age 40 diagnosed at Mount Sinai Medical Center between January 1, 1980 and December 31, 2010 (n=481). Among these patients, 42 were identified as having undergone CPM, while 195 were confirmed as being CPM-free during the observation period. A univariate and multivariate analyses were performed.

RESULTS: The CPM group had a significantly higher percentage of patients who were diagnosed between 2000 and 2010 (95.2% vs 40%, p=0.0001). The CPM group had significantly smaller tumors (0-2cm.: 41.7% vs 24.8%, p=0.04). Among the entire group of patients, the overall five- and 10-year DFS were 81.3% and 73.3%, respectively. CPM was significantly associated [HR 2.35 (1.02, 5.41); p=0.046] with 10-year OS, although a similar effect was not observed for five-year OS.

CONCLUSIONS: We found that CPM has increased dramatically over the last 15 years, especially among white women with locally advanced disease. In patients less than 40, who are thought to be at greatest cumulative risk of secondary breast cancer, CPM provided an OS advantage, regardless of genetics, tumor or patient characteristics, and which was only seen after 10 years of follow-up.

PMID: 24606434  [PubMed - indexed for MEDLINE]


In the wake of Angelina - managing a family history of breast cancer.

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BACKGROUND: Accurate risk assessment by general practitioners (GPs) of breast and ovarian cancer for unaffected women with a family history is important to ensure appropriate referral. Family cancer clinics can provide significant benefits for those at high risk, but genetic testing is unlikely to benefit those who are unaffected, or have little or no family history. The overwhelming increase in
referrals following celebrity Angelina Jolie's decision to have a risk-reducing mastectomy because she carries a gene mutation has put pressure on services.

OBJECTIVE: To provide information for GPs about managing women with concerns about their family history of breast cancer and highlight the resources available.

DISCUSSION: GPs are well placed to assess risk of breast and ovarian cancer and are encouraged to use the available resources to assist them in appropriate risk assessment and referral.

PMID: 24563902 [PubMed - indexed for MEDLINE]


Effect of preoperative MRI on mastectomy and contralateral prophylactic mastectomy rates at a community hospital by a single surgeon.

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Magnetic resonance imaging (MRI) use in the preoperative evaluation of newly diagnosed breast cancer (BC) patients is rising. We evaluated MRI as a function of surgical year with respect to mastectomy and contralateral prophylactic mastectomy (CPM) rates by a single surgeon. From January 2000 to December 2010, 1,279 patients with 1,296 breast cancers were identified. Our breast MRI was installed in April 2006. Mastectomy and CPM rates were evaluated by surgical year and stratified as "pre-MRI" or "MRI" depending on whether surgery occurred before or after April 2006. There was a significant increase in the percentage of patients undergoing MRI in the "pre-MRI" versus "MRI" era (17.2% versus 78.7%, p < 0.001). In contrast, mastectomy rates decreased with 29.9% undergoing mastectomy before 2006 versus 24.5% after 2006 (p = 0.038). Except for 2007, where CPM rates dropped to 7.1%, CPM rates increased from 16.7% in 2000 to 51.9% in 2010 (p = 0.033). The use of MRI, additional MRI findings and additional MRI biopsies were not associated with the decision for CPM. Age <50 was the only factor associated with CPM (RR = 2.12, p = 0.001). In our community hospital, mastectomy rates have decreased despite the increased use of preoperative MRI. MRI alone may not explain the increasing rates of mastectomy reported in other series. CPM rates have dramatically increased over time, seemingly independent of MRI use. Prospective studies are needed to assess the role of surgeon bias, along with other factors, in surgical decision making.

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PMID: 24438066 [PubMed - indexed for MEDLINE]
The importance of understanding the psychological meaning of Angelina Jolie's surgery.

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The recent announcement by the high profile actress, Angelina Jolie, that she had had a preventive double mastectomy because she had a high genetic risk of breast and ovarian cancer will lead other women who are at risk to consider similar operations. Psychiatrists and other physicians are likely to be asked to advise women concerning this decision. This column discusses the psychological impact of mastectomy and breast reconstruction for women and encourages clinicians to have an empathic and understanding attitude and allow patients to talk openly about their fears, doubts, concerns about sexual intimacy, and other issues. It is also important to let women experiencing psychological reactions to mastectomy know that such feelings are normal and usually recede in time.

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Do celebrity cancer diagnoses promote primary cancer prevention?


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OBJECTIVE: Celebrity cancer diagnoses generate considerable media coverage of and increase interest in cancer screening, but do they also promote primary cancer prevention?

METHODS: Daily trends for smoking cessation-related media (information-availability) and Google queries (information-seeking) around Brazilian President and smoker Lula da Silva’s laryngeal cancer diagnosis announcements were compared to a typical period and several cessation awareness events.
RESULTS: Cessation media coverage was 163% (95% confidence interval, 54-328) higher than expected the week after the announcement but returned to typical levels the second week. Cessation queries were 67% (95% confidence interval, 40-96) greater the week after Lula’s announcement, remaining 153% (95% confidence interval, 121-188), 130% (95% confidence interval, 101-163) and 71% (95% confidence interval, 43-100) greater during the second, third, and fourth week after the announcement. There were 1.1 million excess cessation queries the month after Lula’s announcement, eclipsing query volumes for the week around New Year’s Day, World No Tobacco Day, and Brazilian National No Smoking Day.

CONCLUSION: Just as celebrity diagnoses promote cancer screening, they may also promote primary prevention. Discovery of this dynamic suggests the public should be further encouraged to consider primary (in addition to the usual secondary) cancer prevention around celebrity diagnoses, though more cases, cancers, and prevention behaviors must be explored.

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Operative risks associated with contralateral prophylactic mastectomy: a single institution experience.

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BACKGROUND: The purpose of this study was to determine if newly diagnosed breast cancer patients undergoing contralateral prophylactic mastectomy (CPM) experience more complications than patients undergoing unilateral mastectomy (UM).

METHODS: A total of 600 patients underwent either UM or CPM between January 2009 and March 2012 for unilateral breast cancer. Operative complications were classified as minor (aspirations, infection requiring antibiotics, partial flap and nipple necrosis, minor bleeding, delayed wound healing) or major (hematoma or seroma requiring operation, infection requiring rehospitalization, blood product transfusion, total flap or nipple loss, implant removal), mixed (both minor and major complications), or multiple. Chi-square and multivariate logistic regressions were used for the analysis.

RESULTS: Of the 600 patients, 391 (65 %) underwent UM and 209 (35 %) underwent CPM. Across all complication groups, there were significantly more complications in the CPM group versus the UM group (41.6 vs. 28.6 %, p = 0.001). Major complications alone were significantly greater in the CPM versus the UM group.
(13.9 vs. 4.1 %, p < 0.001). When adjusting for age, body mass index, smoking and diabetes history, AJCC stage, reconstruction, previous radiation therapy, and adjuvant therapy, CPM patients were 1.5 times more likely to have any complication (odds ratio [OR] 1.53; 95 % CI 1.04-2.25, p = 0.029) and 2.7 times more likely to have a major complication compared with UM patients (OR 2.66; 95 % CI 1.37-5.19, p = 0.004).

CONCLUSIONS: CPM patients have an increased risk of complications, especially major complications requiring rehospitalization or reoperation. These complications may influence patient and physician decisions to choose CPM.

PMID: 23868655  [PubMed - indexed for MEDLINE]


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The use of contralateral prophylactic mastectomy (CPM) has been increasing despite questionable survival benefit. We examined the effect of CPM on survival using the National Cancer Data Base. We examined overall survival on 219,983 mastectomy patients diagnosed with unilateral AJCC Stage 1-III invasive breast cancer between 1998 and 2002 of which 14,994 (7 %) underwent CPM at the time of their index mastectomy. Median follow up time was 5 years. Neoadjuvant and locally advanced breast cancers were excluded. Approximately 4 % underwent CPM in 1998 compared to 9.4 % in 2002, an ~125 % increase. CPM patients were significantly younger than non-CPM patients, on managed care plans, and were treated at high volume centers. The unadjusted hazard ratio (HR) of death was 0.55 (95 % CI 0.52-0.57) for CPM compared to unilateral mastectomy. In a multivariable Cox model adjusting for age, race, stage, grade, histology, insurance, facility characteristics, use of adjuvant hormonal, chemotherapy, and radiotherapy, and year of diagnosis, the adjusted HR was 0.88 (95 % CI 0.83-0.93; p < 0.001) which translated into an absolute 5-year benefit of 2 %. There was a differential effect of CPM by stage and age: HR = 0.88 (95 % CI 0.82-0.94; p < 0.001) in women younger than 70 with stage I/II, and HR = 0.95 (95 % CI 0.88-1.04; p = 0.28) in women with stage III or older than age 69 which translated into an absolute 5-year benefit of 1.3 %. Utilization of hormonal therapy or chemotherapy had no effect on the HR. After adjusting for confounding, the overall survival benefit for CPM is minimal at best.

PMID: 24218052  [PubMed - indexed for MEDLINE]
Ductal carcinoma in situ develops in the milk ducts without invading the surrounding connective tissue. Progression to invasive carcinoma is slow and infrequent and is thus difficult to predict. Screening mammography has increased the number of women diagnosed with early-stage ductal carcinoma in situ. What is the best management strategy for patients whose breast biopsy suggests ductal carcinoma in situ? Is watchful waiting a reasonable option? To answer these questions, we conducted a review of the literature using the standard Prescrire methodology. Surgical resection is usually proposed to women with ductal carcinoma in situ but has not been compared with watchful waiting. Resection does not appear to have a major impact on mortality: trials of screening mammography showed no major reduction in breast cancer mortality, but screening does increase the number of diagnoses of ductal carcinoma in situ and, thus, the number of women who undergo surgery. When ductal carcinoma in situ is diagnosed by biopsy, histological examination of the surgically resected tumour reveals invasive breast cancer in about 13% to 24% of cases. Surgical removal of the tumour is usually proposed to women with ductal carcinoma in situ. Excision may be either localised (lumpectomy) or extensive (mastectomy). We found no randomised trials comparing the two approaches. Lumpectomy is usually proposed when the tumour is small (less than 20 mm) and appears to be amenable to complete excision with acceptable cosmetic results. A follow-up study of nearly 2000 women showed a recurrence rate of about 27% between 8 and 10 years after lumpectomy without further treatment. Mastectomy is usually proposed when the tumour appears to be extensive on mammography, or when complete resection with acceptable cosmetic results does not appear feasible, or when the patient chooses this option. Following mastectomy, the risk of carcinoma is similar to that of the general female population. Mastectomy and lumpectomy can both result in persistent pain, which is severe in about 13% of women. Systematic reviews of data for more than 10 000 women have shown that the following factors are statistically associated with an increased risk of recurrence after lumpectomy: age less than 50 years at diagnosis, tumours larger than 25 mm, high-grade tumours, and comedo-type necrosis. Healthy surgical margins of at least 2 mm are associated with a lower risk of recurrence. The impact of radiation therapy after lumpectomy for ductal carcinoma in situ has been evaluated in four randomised trials including a total of 3925 women. Radiation therapy reduced the risk of recurrence but did not prevent death from breast cancer. Irradiation carries a risk of skin burns and long-term cardiovascular and pulmonary toxicity. It also increases the risk of persistent post-surgical pain. In two randomised placebo-controlled trials of lumpectomy with or without radiation therapy for ductal carcinoma in situ, tamoxifen (an antiestrogen) did not affect either overall or breast cancer mortality, but it reduced the risk of recurrence by about one-quarter. Adverse
effects of tamoxifen include venous thrombosis and pulmonary embolism, and endometrial cancer. In practice, women diagnosed with ductal carcinoma in situ have a number of options, none of which seems to have a clearly superior harm-benefit balance. Surgical excision reduces the risk of progression but can lead to persistent pain. Following radical mastectomy, the risk of breast cancer is similar to that of the general population. Lumpectomy is associated with a higher risk of recurrence and thus requires closer monitoring. Radiation therapy reduces the risk of recurrence in high-risk situations but has noteworthy adverse effects. Simple clinical monitoring is a valid option for asymptomatic patients: it carries a risk of progression to invasive cancer but avoids exposing many women to the adverse effects of surgery and radiation therapy.

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The Angelina Jolie effect.

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PMID: 24237080 [PubMed - indexed for MEDLINE]


International rates of breast reconstruction after prophylactic mastectomy in BRCA1 and BRCA2 mutation carriers.


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BACKGROUND: Breast reconstruction is an option for women with BRCA1 or BRCA2
mutations who elect to undergo prophylactic mastectomy to prevent breast cancer. We report on the uptake of breast reconstruction after prophylactic mastectomy in women with BRCA mutations from eight countries.

METHODS: Women with a BRCA1 or BRCA2 mutation were questioned regarding their cancer preventive practices. Information was recorded on prophylactic mastectomy and breast reconstruction.

RESULTS: A total of 1,635 women with a BRCA1 or BRCA2 mutation who elected to undergo prophylactic mastectomy from eight countries were included. A total of 1,137 women (69.5%) had breast reconstruction after prophylactic mastectomy. A total of 58.7% of women over the age of 45 years at the time of prophylactic mastectomy had breast reconstruction compared to 77.6% of women 35 years of age or younger [odds ratio (OR) 0.36, 95% confidence interval (CI) 0.26-0.50, p < 0.001]. In addition, 62.9% of women with a breast cancer diagnosis (contralateral prophylactic mastectomy) had breast reconstruction after prophylactic mastectomy compared to 79.7% of women without a previous breast cancer diagnosis (OR 0.48, 95% CI 0.38-0.61, p < 0.001). A total of 66.9% of women from Canada had breast reconstruction after mastectomy compared to 71.9% of American women (OR 0.75, 95% CI 0.59-0.96, p = 0.02).

CONCLUSIONS: The majority of women elect for breast reconstruction after prophylactic mastectomy. However, younger women and those without a previous diagnosis of breast cancer are more likely to have breast reconstruction than older women or those with a previous diagnosis of cancer.

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Increased postoperative complications in bilateral mastectomy patients compared to unilateral mastectomy: an analysis of the NSQIP database.

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BACKGROUND: Recent studies indicate that women with unilateral breast cancer are choosing contralateral prophylactic mastectomy (CPM) at an increasing rate. There is limited literature evaluating the postoperative complication rates associated with CPM without breast reconstruction. The objective of this study was to compare postoperative complications in women undergoing unilateral mastectomy (UM) and sentinel lymph node biopsy (SLNB) to those undergoing bilateral mastectomy (BM) and SLNB for the treatment of their breast cancer. METHODS: The American College of Surgeons National Surgery Quality Improvement Program (ACS NSQIP) Participant Use Files between 2007 and 2010 were used to identify women with breast cancer undergoing UM or BM with SLNB. Individual and composite end points of 30-day complications were used to compare both groups by
univariate and multivariate analyses.
RESULTS: We identified 4,219 breast cancer patients who had a SLNB: 3,722 (88.2 %) had UM and 497 (11.8 %) had BM. The wound complication rate was significantly higher in the BM group versus the UM group, 5.8 % versus 2.9 % [unadjusted odds ratio (OR) 2.1, 95 % confidence interval (CI) 1.3-3.3, P < 0.01]. The overall 30-day complication rate in UM patients was 4.2 % versus 7.6 % in the BM group (unadjusted OR 1.9, 95 % CI 1.3-2.7, P < 0.01). The adjusted OR for overall complications adjusting for important patient characteristics was 1.9 (95 % CI 1.3-2.8, P < 0.01). Independent predictors of overall postoperative complications were body mass index (OR 1.1, P < 0.01) and smoking (OR 2.2, P < 0.01).
CONCLUSIONS: For patients with breast cancer, bilateral mastectomy is associated with an increased risk of wound and overall postoperative complications. Discussion of these outcomes is imperative when counseling women contemplating CPM.

PMID: 23846780  [PubMed - indexed for MEDLINE]


Long-term patient-reported satisfaction after contralateral prophylactic mastectomy and implant reconstruction.

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PURPOSE: To determine whether satisfaction and health-related quality of life (HR-QoL) differ between women who do and do not undergo contralateral prophylactic mastectomy (CPM) in the setting of implant reconstruction using the BREAST-Q, a validated patient-reported outcome instrument.
METHODS: From 2000 to 2007, a total of 3,874 patients with stage 0 to III unilateral breast cancer (BC) had mastectomy; 688 (18 %) pursued CPM within 1 year. Patients who completed the BREAST-Q reconstruction module as part of BREAST-Q validation studies or routine clinical care formed our study cohort. Comparisons were made between CPM and no-CPM patients using univariate analysis and multivariate models (MVA).
RESULTS: Of 294 patients with BREAST-Q data, 112 (38 %) had CPM. Median time from mastectomy to BREAST-Q was 52 months. CPM patients were younger (mean 47 vs. 50 years), more likely to be White (98 vs. 86 %), married (84 vs. 71 %), have a family history of BC (60 vs. 44 %), and to choose silicone implants (67 vs. 48 %). There were no differences in tumor or treatment characteristics between groups at the time of BREAST-Q. Patients with CPM had a higher mean score for Satisfaction with Breasts (64.4 vs. 54.9; p < 0.001) and Satisfaction with Outcome (74.8 vs. 67.7; p = 0.007); other HR-QoL domains did not differ. On MVA,
CPM and the absence of lymphedema were significant predictors of Satisfaction with Breasts (CPM p = 0.005, lymphedema p = 0.039). CPM was not associated with improved Satisfaction with Outcome.

CONCLUSIONS: This study suggests that in the setting of implant reconstruction, CPM has a positive correlation with patient satisfaction with their breasts, but not with improvements in other HR-QoL domains.

PMID: 23720070 [PubMed - indexed for MEDLINE]


Perceptions, knowledge, and satisfaction with contralateral prophylactic mastectomy among young women with breast cancer: a cross-sectional survey.


Comment in

Summary for patients in

Chinese translation
BACKGROUND: Rates of contralateral prophylactic mastectomy (CPM) have increased dramatically, particularly among younger women with breast cancer, but little is known about how women approach the decision to have CPM.
OBJECTIVE: To examine preferences, knowledge, decision making, and experiences of young women with breast cancer who choose CPM.
DESIGN: Cross-sectional survey.
SETTING: 8 academic and community medical centers that enrolled 550 women diagnosed with breast cancer at age 40 years or younger between November 2006 and November 2010.
PATIENTS: 123 women without known bilateral breast cancer who reported having bilateral mastectomy.
MEASUREMENTS: A 1-time, 23-item survey that included items related to decision making, knowledge, risk perception, and breast cancer worry.
RESULTS: Most women indicated that desires to decrease their risk for contralateral breast cancer (98%) and improve survival (94%) were extremely or very important factors in their decision to have CPM. However, only 18% indicated that women with breast cancer who undergo CPM live longer than those who do not. BRCA1 or BRCA2 mutation carriers more accurately perceived their risk for contralateral breast cancer, whereas women without a known mutation substantially overestimated this risk.
LIMITATIONS: The survey, which was administered a median of 2 years after surgery, was not validated, and some questions might have been misinterpreted by respondents or subject to recall bias. Generalizability of the findings might be
limited.
CONCLUSION: Despite knowing that CPM does not clearly improve survival, women who have the procedure do so, in part, to extend their lives. Many women overestimate their actual risk for cancer in the unaffected breast. Interventions aimed at improving risk communication in an effort to promote evidence-based decision making are warranted.
PRIMARY FUNDING SOURCE: Susan G. Komen for the Cure.

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Increasing use of elective mastectomy and contralateral prophylactic surgery among breast conservation candidates: a 14-year report from a comprehensive cancer center.

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BACKGROUND: First-line surgical options for early-stage breast cancer include breast-conserving surgery (BCS) or mastectomy. We analyzed factors that influence the receipt of mastectomy and resultant trends over time.
METHODS: We analyzed the rates of mastectomy and BCS for 1634 women who underwent upfront surgical treatment for AJCC stage 0, I, or II breast cancer between 1995 and 2008 using data from the University of Louisville James Graham Brown Cancer Center Tumor Registry. We examined the trend of treatment over time and assessed the probability of receiving mastectomy using multivariate logistic regression.
RESULTS: Overall, 65.9% of women received BCS, and 34.1% received mastectomy over a 14-year period (annual BCS rate range, 38.6% to 77.7%). The mastectomy rate substantially decreased from 43.5% in 1995 to 22.5% in 2004 (P = 0.0007) but then increased to 51.7% in 2008 (P < 0.0001). During the years between 2004 and 2008 (vs. 1995 to 2003), there was a significant increase in the rates of mastectomy performed in conjunction with immediate reconstruction (IR: 35.7% vs. 8.4%; P < 0.0001) and/or contralateral prophylactic mastectomy (CPM: 22.9% vs. 3.3%; P < 0.0001). On the basis of the multivariate analysis, the rate of receiving mastectomy was drastically higher for patients treated since 2004 (vs. before 2004), uninsured and government-insured (vs. privately insured) patients, patients with pT2 disease (vs. pTis or pT1), patients with pN1 disease (vs. pNX or pN0).
CONCLUSIONS: In this longitudinal registry study, major independent determinants of mastectomy for early-stage breast cancer include year of diagnosis, insurance status, and stage. Mastectomy rates declined until 2004, but have since increased...
in conjunction with immediate reconstruction and contralateral prophylactic mastectomy. Additional study is needed to identify the underlying reasons for and unintended consequences of the reemergence of radical surgery for early-stage breast cancer in the era of multidisciplinary care.

PMID: 22643566 [PubMed - indexed for MEDLINE]


Contralateral prophylactic mastectomy in women with breast cancer: trends, predictors, and areas for future research.

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Recent studies have revealed increasing rates of contralateral prophylactic mastectomy (CPM) among women with unilateral early stage breast cancer. This trend has raised concerns, given the lack of evidence for a survival benefit from CPM and the relatively low risk of contralateral breast cancer for most women in this setting. In this article, we review available data regarding the value of CPM, predictors, and outcomes related to CPM, and areas for future research and potential intervention.

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PMID: 23893127 [PubMed - indexed for MEDLINE]


Sentinel lymph node biopsy in contralateral prophylactic mastectomy: are we overtreating? Experience at a tertiary care hospital.

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OBJECTIVE: Use of routine sentinel lymph node biopsy (SLNB) in contralateral prophylactic mastectomy (CPM) is controversial. This retrospective study was undertaken to determine the frequency of SLNB in CPM at a community hospital and
its utility as a guide to patient decision making.

METHODS: Between 2007 and 2009, 170 patients underwent CPM at a suburban, tertiary care facility. The CPM was either immediate or delayed, or was for ipsilateral recurrent breast cancer. Thirty-seven (21.8%) of 170 patients had SLNB performed with CPM. The mastectomy specimens underwent standard pathologic evaluation by using intraoperative touch preparation cytology and postoperative hematoxylin and eosin staining and immunohistochemistry.

RESULTS: No patients who underwent SLNB had positive nodes on touch preparation or final hematoxylin and eosin staining (0/37 [0%]). Fourteen (8.2%) of 37 patients had additional nodes identified in the specimens. These were either axillary tail or intramammary nodes. The median number of SLNs removed was 2 (range, 1-5), none of these were positive. There were 3 incidental cancers diagnosed on final pathology. Two invasive cancers (T1a and grade I) and 1 ductal carcinoma in situ were identified. SLNB was only performed on the patient with DCIS. Neither SLNB nor subsequent axillary lymph node dissection was performed in the invasive cancers.

CONCLUSIONS: SLNB was performed in 37 (21.8%) of patients who underwent CPM in a community hospital. Only 3 (1.76%) of 170 patients who underwent CPM had findings on final pathology that would have justified axillary staging. This correlates with other published data regarding SLNB in CPM. Because SLNB is associated with significant morbidity, guidelines for SLNB in prophylactic mastectomy need to be established so to avoid overtreatment.

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PMID: 23706482 [PubMed - indexed for MEDLINE]


A public health education initiative for women with a family history of breast/ovarian cancer: why did it take Angelina Jolie?

[Article in English, French]

Nisker J.

PMID: 24007702 [PubMed - indexed for MEDLINE]


Risk management: Jolie's decision sparks debate, need for more education.

Trossman S.

PMID: 24079102 [PubMed - indexed for MEDLINE]
Breast surgeons' perceptions and attitudes towards contralateral prophylactic mastectomy.

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BACKGROUND: The rates of contralateral prophylactic mastectomy (CPM) are increasing worldwide. This study investigated Australian and New Zealand's breast surgeons' perceptions, knowledge and attitudes towards CPM, and explored if demographic characteristics of surgeons were associated with an increased tendency to recommend or perform CPM.

METHODS: A cross sectional research design was employed, with breast surgeons completing a self-report questionnaire. The questionnaire collected information including surgeons' perceptions on CPM in their clinical practice, their attitudes and knowledge of CPM and surgeons' demographic information.

RESULTS: Eighty-one of 220 (37%) breast surgeons contacted via BreastSurgANZ participated in this study. Forty-four per cent of surgeons perceived that the rates of CPMs they performed had increased over the last year. CPM rates were found to be unrelated to surgeons' age (P = 0.773) or gender (P = 0.941). The main reasons a surgeon recommended a CPM to patients included known BRCA+ mutation, family history of breast cancer and patient factors including fear and anxiety and a desire to avoid further breast cancer treatment.

CONCLUSIONS: Breast surgeons perceived that rates of CPM were increasing in their own clinical practice. CPM rates were unrelated to surgeon demographics including age and gender. While surgeons are aware of the objective risk factors that make performing a CPM advisable, they also report taking into account subjective factors, including patient fear and anxiety and a desire for breast symmetry when recommending a CPM.


PMID: 23043449 [PubMed - indexed for MEDLINE]


The Angelina effect.

Kluger J, Park A.
Angelina Jolie's double mastectomy and the question of who owns our genes.

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An analysis of the association between cancer-related information seeking and adherence to breast cancer surveillance procedures.

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BACKGROUND: Breast cancer surveillance is important for women with a known history of breast cancer. However, relatively little is known about the prevalence and determinants of adherence to surveillance procedures, including associations with seeking of cancer-related information from medical and nonmedical sources.

METHODS: We conducted a longitudinal cohort study of breast cancer patients diagnosed in Pennsylvania in 2005. Our main analyses included 352 women who were eligible for surveillance and participated in both baseline (~1 year after cancer diagnosis) and follow-up surveys. Outcomes were self-reported doctor visits and physical examination, mammography, and breast self-examination (BSE) at 1-year follow-up.

RESULTS: Most women underwent two or more physical examinations according to
recommended guidelines (85%). For mammography, 56% of women were adherent (one mammogram in a year) while 39% reported possible overuse (two or more mammograms). Approximately 60% of respondents reported regular BSE (≥ 5 times in a year). Controlling for potential confounders, higher levels of cancer-related information seeking from nonmedical sources at baseline was associated with regular BSE (OR, 1.52; 95% CI, 1.01-2.29; P, 0.046). There was no significant association between information-seeking behaviors from medical or nonmedical sources and surveillance with physical examination or mammography.

CONCLUSIONS: Seeking cancer-related information from nonmedical sources is associated with regular BSE, a surveillance behavior that is not consistently recommended by professional organizations.

IMPACT: Findings from this study will inform clinicians on the contribution of active information seeking toward breast cancer survivors' adherence to different surveillance behaviors.

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PMID: 23118144  [PubMed - indexed for MEDLINE]


The contralateral prophylactic mastectomy decision-making process.

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Women facing an early-stage breast cancer diagnosis may elect to have a contralateral prophylactic mastectomy (CPM) to reduce the risk of developing a contralateral breast cancer. In the United States, CPM rates for all surgically treated women with stages I through III unilateral breast cancer increased dramatically from 1998 to 2003. In 1991, the National Institutes of Health Consensus Panel concluded that breast-conserving surgery is an appropriate and preferred treatment for the majority of women with stage I and II breast cancer because it provides survival rates equivalent to those of total mastectomy while preserving the breast. Owing to the near equivalence of the 2 surgical treatment options in terms of survival benefit and recurrence risk, surgical treatment for early-stage breast cancer qualifies as a "preference-sensitive decision" for which no one treatment is best (S. T.; ). We performed a literature review to identify studies that examined CPM decision making in women facing an early-stage breast cancer diagnosis with the aim of determining the most influential factors affecting her surgical choice. Study outcome measures were largely based on demographic information retrospectively extracted from large databases representing trends rather than revealing influences reflecting preference-sensitive decision making. While we may know demographically, which
women choose CPM, we do not know why. To better understand this increasing trend, which greatly impacts patient counseling, prospective research is needed using decision quality methods developed to illuminate factors influencing a woman's decision.

PMID: 23446503  [PubMed - indexed for MEDLINE]


Contralateral prophylactic mastectomy: clinical and pathological features from a prospective database.

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INTRODUCTION: In keeping with recently documented national trends, a significant and increasing number of patients will have chosen contralateral prophylactic mastectomy (CPM) based on personal preference, without traditional clinical or pathological indication.

METHODS: Women who underwent CPM at the University of Louisville from 2003 to 2009 were selected for this study. Descriptive factors were evaluated such as age, race, family history of breast cancer, laterality, hormone receptor status, stage, grade and histology of the index breast lesion. Statistical analysis was used to compute predictive factors for occult contralateral pathology.

RESULTS: A total of 107 patients underwent CPM and had adequate medical information to be included in this study. The median age was 48 years, with 88% being white and 12% being African American. Seventy-six percent of the index breast cancers were infiltrating ductal carcinoma and 12% were infiltrating lobular carcinoma. Five "significant" occult pathologies were found in the prophylactically removed breast. Two of the lesions were ductal carcinoma in situ, 2 were lobular carcinoma in situ and 1 was an invasive mucinous carcinoma. On bivariate analysis, there were no factors identified predictive for occult contralateral pathology.

CONCLUSIONS: In line with previously reported data, we noted that fewer than 5% of patients who underwent CPM had pathology in the contralateral breast. We were unable to correlate any clinical or pathological characteristics in women who presented with contralateral breast cancer. This study raises serious questions regarding the clinical utility of CPM in detecting synchronous clinically and radiographically occult contralateral primaries.

PMID: 22395715  [PubMed - indexed for MEDLINE]
Association between contralateral prophylactic mastectomy and breast cancer outcomes by hormone receptor status.

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BACKGROUND: The effect of contralateral prophylactic mastectomy (CPM) on the survival of patients with early-stage breast cancer remains controversial. The objective of this study was to evaluate the benefits of CPM using a propensity scoring approach that reduces selection bias from the nonrandom assignment of patients in observational studies.

METHODS: A total of 3889 female patients with stage I to III breast cancer were identified who were treated at The University of Texas MD Anderson Cancer Center from 1997 to 2009. We assessed the association between CPM and disease-free (DFS) and overall survival (OS), by using Cox proportional hazards models to estimate hazard ratios (HRs), and by matching patients in the CPM and no-CPM groups using propensity scores (n = 497 pairs).

RESULTS: With a median follow-up time of 4.5 years, CPM was associated with improved DFS (HR, 0.75; 95% confidence interval [CI], 0.59-0.97) and OS (HR, 0.74; 95% CI, 0.56-0.99), adjusted for prognostic factors. The improved DFS was seen predominantly among hormone receptor-negative (HR, 0.60; 95% CI, 0.38-0.95) compared with hormone receptor-positive patients (HR, 0.80; 95% CI, 0.58-1.10). For the matched patient cohort, stratified survival analysis also showed an improvement in DFS with CPM (HR, 0.48; 95% CI, 0.22-1.01) in hormone receptor-negative patients that was nearly statistically significant.

CONCLUSIONS: CPM was associated with improved DFS for some patients with hormone receptor-negative breast cancer, after reducing selection bias. Identifying subsets of patients most likely to benefit from CPM may have important implications for a more personalized approach to treatment decisions about CPM.

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PMCID: PMC3478501
PMID: 22517269 [PubMed - indexed for MEDLINE]
INTRODUCTION: Contralateral prophylactic mastectomy (CPM) is the most effective option to prevent the occurrence of a second breast cancer in hereditary breast cancer patients. This study aimed to prospectively evaluate health-related quality of life (HRQoL), anxiety and depression, sexuality and body image in breast cancer patients with a family history undergoing CPM with immediate breast reconstruction.

PATIENTS AND METHODS: In total, 60 of 69 eligible patients agreed to participate in the study. Four validated questionnaires were used: the SF-36, the Hospital Anxiety and Depression Scale (HAD), the Body Image Scale (BIS), and the Sexual Activity Questionnaire (SAQ). Forty-five patients (75%) responded before CPM, 49 (82%) at 6 months, and 45 (75%) at 2 years after CPM.

RESULTS: Overall, the patients showed a satisfactory HRQoL 2 years after CPM, similar to women in the general population. There were no differences in HRQoL, anxiety, depression or sexuality before and after CPM. However, more than half of the women reported at least one body image problem 2 years postoperatively.

CONCLUSION: No adverse effects on HRQoL, anxiety, depression or sexuality were observed. However, some aspects of body image were negatively affected after CPM. These findings could be used in preoperative counselling of breast cancer patients opting for CPM.

Fear of recurrence and perceived survival benefit are primary motivators for choosing mastectomy over breast-conservation therapy regardless of age.

INTRODUCTION: Recent studies have reported increases in the rate of mastectomy and contralateral prophylactic mastectomy (CPM). We hypothesized that there would be different reasons for choosing mastectomy for women aged <50 compared with...
those aged ≥50 years.

METHODS: A questionnaire was administered to 332 patients who underwent unilateral or bilateral mastectomy for breast cancer from 2006 to 2010. The survey queried on demographics, surgical choices, and rationale for those choices. A retrospective chart review was performed to determine tumor characteristics. Responses and clinical characteristics were described by contingency tables and compared using Fisher exact test or χ² test, as appropriate.

RESULTS: Of 332 patients surveyed, 310 were evaluable. Median age was 55 years, including 88 patients <50 (28 %) and 222 patients ≥50 (72 %) at time of diagnosis. Forty-four percent of women <50 and 41 % of women ≥50 were given the option of breast conservation and chose mastectomy (p > 0.63). The two groups did not differ in their reason for choosing mastectomy, with lower recurrence risk and improved survival cited as the two most common reasons. Younger patients were more likely to undergo reconstruction and CPM (p < 0.0001) as well as have estrogen receptor-negative tumors, undergo neoadjuvant chemotherapy, and have higher magnetic resonance imaging utilization (p < 0.05).

CONCLUSIONS: Choosing mastectomy and the reasons for doing so were the same for women aged <50 and ≥50 years. Prospective studies are needed to determine whether patient education regarding perceived versus actual recurrence risk and survival would alter this decision-making process.

PMID: 22833001 [PubMed - indexed for MEDLINE]


Breast reconstruction in patients with personal and family history of breast cancer undergoing contralateral prophylactic mastectomy, a 10-year experience.

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BACKGROUND: The purpose of this study was to evaluate the clinical course of breast reconstruction in patients with personal and family history of breast cancer undergoing contralateral prophylactic mastectomy (CPM) and elucidate the association between reoperation risk and adjuvant treatment.

METHODS: A descriptive retrospective study of a consecutive series of breast cancer patients who underwent CPM with breast reconstruction at Karolinska University Hospital between 1998 and 2008 was performed. Reoperation was chosen as an outcome variable assessing morbidity and thus documented for each patient and for each reconstructed breast. Regression analyses were performed to evaluate the risk of reoperation after bilateral breast reconstruction.
RESULTS: Ninety-one patients underwent CPM during the study period. Their mean age at CPM was 45.3 years (SD =9.4). No contralateral breast cancer was diagnosed after CPM during the median follow-up period of 3.9 years. All women, but two, received an implant based breast reconstruction. The majority (n =75, 82%) underwent CPM with concurrent bilateral breast reconstruction. Overall, after bilateral breast reconstruction 45/75 (60%) required at least one reoperation on the CPM side (n =2, 3%), therapeutic mastectomy (TM) side (n =17, 23%) or both sides (n =26, 33%). In the paired analyses, the probability of reoperation was significantly higher after TM reconstruction as compared to CPM (0.57 vs. 0.37, p =0.001). The mean number of reoperations required for completion of TM and CPM reconstruction was 0.84 and 0.49, respectively (p =0.003). Among all potential risk factors, only radiotherapy was associated with reoperation after bilateral breast reconstruction (odds ratio [OR]: 4.2, 95% CI, 1.3 to 13.6, p =0.015).

CONCLUSIONS: Breast reconstruction in patients with personal and family history of breast cancer is a complex operation. This study found that the clinical course after bilateral breast reconstruction was predominantly affected by reoperations on the TM side and given radiotherapy was associated with reoperation. Further studies are necessary to examine the possible predictors of unanticipated reoperations in candidates for CPM with breast reconstruction.

PMID: 22409595 [PubMed - indexed for MEDLINE]


Comparison of patient characteristics and outcomes of contralateral prophylactic mastectomy and unilateral total mastectomy in breast cancer patients.

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BACKGROUND: There has been an increasing trend toward contralateral prophylactic mastectomy (CPM) in the management of breast cancer (BCa). This study's objective was to compare clinicopathologic characteristics of BCa patients who elected CPM to those who elected unilateral total mastectomy (UTM) and to determine whether CPM improved survival.

METHODS: Comparison was performed on 355 patients with stage 0-III BCa matched by age and stage who underwent mastectomy from 1995 to 2008: 177 patients had CPM; 178 patients had UTM. Clinicopathological characteristics and survival outcomes were analyzed.

RESULTS: Women who underwent preoperative MRI were twice as likely to have CPM (40.9 vs. 19.7%, P < 0.001). MRI identified additional suspicious foci in 45% CPM and 19% UTM. Patients with history of previous breast biopsies, family history, or BRCA mutation were more likely to choose CPM than UTM (40.1 vs. 24%, P =
0.001; 64.3 vs. 41.4%, P < 0.001; 20.3 vs. 6.5%, P = 0.04, respectively). CPM patients elected nipple preservation (26 vs. 5.2%, P < 0.001) and immediate reconstruction more often (92.2 vs. 73.5%, P < 0.001); UTM patients were more likely to have attempted breast conservation prior to mastectomy (52.8 vs. 39.5%, P = 0.01). CPM identified occult BCa in 11 patients (6.6%), and three UTM patients (1.7%) developed contralateral BCa. With median follow-up of 61 months, by univariable/multivariable analyses, CPM did not improve overall, disease-free, or distant metastases-free survival.

CONCLUSION: Factors that may influence choice of CPM included preoperative MRI, history of prior breast biopsies, immediate reconstruction, nipple preservation, family history, and BRCA status. Those who chose CPM did not have improved survival.

PMID: 22396004 [PubMed-indexed for MEDLINE]


Options in breast cancer local therapy: who gets what?

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Today, women with primary breast cancer may consider three surgical options: breast-conserving surgery (BCS), mastectomy (MT), and mastectomy with contralateral prophylactic mastectomy (MT + CPM). In each case, the ipsilateral axilla is generally managed with a sentinel node biopsy and possibly an axillary lymph node dissection. BCS generally requires breast radiotherapy, except in older women having tumors with a favorable prognosis who will receive endocrine therapy. In contrast, women treated with MT generally do not require radiotherapy, except for those with large tumors or metastases to the axillary nodes. Moreover, MT and MT + CPM are usually undertaken with breast reconstruction. Yet, most patients today are suitable candidates for BCS, with a few relative contraindications. Thus, early pregnancy, previous radiotherapy to the breasts, active collagen vascular disease, multicentric breast cancer, large tumors (although neoadjuvant systemic therapy can often reduce tumor size), and the presence of the BRCA mutation are all relative contraindications to BCS. BRCA mutation carriers should consider MT + CPM because their risk of contralateral breast cancer is greatly increased. In the U.S., the use of MT for the treatment of primary breast cancer has declined in recent years, while MT + CPM rates have increased, and BCS rates have remained relatively stable. The underlying reasons for these trends are not fully understood. Local therapy options should be discussed with each patient in considerable detail, and more studies are needed to better elucidate which factors influence a woman's choice of local therapy following a breast cancer diagnosis.
Increasing rates of contralateral prophylactic mastectomy - a trend made in USA?

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BACKGROUND: Numerous recent studies conducted in the USA reported a considerable rise in the rates of contralateral prophylactic mastectomy (CPM) in early-stage breast cancer (BC). However, this aggressive surgical approach only showed an evidence-based improvement in prognosis for a small subgroup of high-risk BC patients. We present the first European study reporting CPM rates in an unselected cohort of patients with BC.

PATIENTS & METHODS: The data of 881 patients (≤ 80 years) who underwent surgery for stage I-III BC from 1995 to 2009 at the University of Basel Breast Center was analyzed.

RESULTS: CPM was performed in 23 of 881 patients (2.6%). Of the entire patient population, 37.5% underwent ipsilateral mastectomy and of those, only 7.0% chose to undergo CPM. Importantly, there was no trend over time in the rate of CPM. Women who chose CPM were significantly younger (54 vs. 60 years, p < 0.001), had more often a positive family history (39.1% vs. 24.4%, p = 0.032) and tumors of lobular histology (30.5% vs. 13.9%, p = 0.035).

CONCLUSIONS: Our analysis of CPM rates in BC patients, conducted at a European University breast center, does not show the considerably rising CPM rates observed in the USA. We hypothesize that different medico-social and cultural factors, which are highlighted by a different public perception of BC and a different attitude toward plastic surgery, determine the varying CPM rates between the USA and Europe.

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Prophylactic mastectomy: is it worth it?

de la Peña-Salcedo JA(1), Soto-Miranda MA, Lopez-Salguero JF.
BACKGROUND: Breast cancer is the second mortality-related cancer and the leading cause of general mortality in women aged 40-55. Prophylactic mastectomy has proved to be effective in several clinical scenarios but is still a somewhat controversial procedure.

METHODS: We performed a retrospective study by reviewing the records of all patients who underwent prophylactic mastectomy in a 25-year period. We evaluated the aesthetic and long-term oncologic outcomes, complications, and patient satisfaction.

RESULTS: We had 52 patients, 40 of them unilateral cases (contralateral prophylactic mastectomy) and 12 bilateral (bilateral prophylactic mastectomy) for a total of 64 mastectomized breasts. We had 1 (1.56%) case of unexpected breast cancer in the mastectomy specimens. Forty-two (65.62%) cases had a subcutaneous prophylactic mastectomy and 22 (34.37%) cases had a simple total prophylactic mastectomy. Fifty-eight (90.62%) cases underwent reconstruction with alloplastics and 6 (9.37) cases with autologous tissue of which 5 (7.81%) cases received latissimus dorsi flaps with alloplastic implants and 1 (1.56%) case had a TRAM flap. The complications included 4 (6.25%) breasts that developed capsular contracture, 2 (3.12%) cases of hematoma, and 1 (1.56%) infection. Concerning patient satisfaction, 39 (75%) patients reported being highly satisfied, 10 (19.23%) partially satisfied, and 3 (5.76%) unsatisfied. When we performed the aesthetic evaluation according to our scale, we got an overall aesthetic index of 8.8.

CONCLUSION: Prophylactic mastectomy is becoming an increasingly frequent procedure. Plastic surgeons should consider the aesthetic outcome when planning mastectomy and reconstruction. Our ability to predict the high-risk population has improved and it is that population who can get the best benefit from this intervention. The recommendation against subcutaneous prophylactic mastectomy lacks scientific evidence. There is plenty of evidence that prophylactic mastectomy lowers the risk of breast cancer in the high-risk population in at least 95%. Our experience with prophylactic mastectomy is extremely satisfactory, with an overall patient satisfaction rate of 94%, no mortality, and an oncologic long-term outcome of 0% of ulterior development of breast cancer. Our series, although relatively small, should provide some insight into the power of this technique and we think all plastic surgeons should have it in their surgical armamentarium and should share their experiences so that this procedure may become more widely accepted. We also think that plastic surgeons should strive for perfecting the technique to reduce the complication rate and therefore help the procedure gain acceptance by the medical community.

PMID: 21751064 [PubMed - indexed for MEDLINE]

What made her give up her breasts: a qualitative study on decisional considerations for contralateral prophylactic mastectomy among breast cancer survivors undergoing BRCA1/2 genetic testing.

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OBJECTIVE: This qualitative study retrospectively examined the experience and psychological impact of contralateral prophylactic mastectomy (CPM) among Southern Chinese females with unilateral breast cancer history who underwent BRCA1/2 genetic testing. Limited knowledge is available on this topic especially among Asians; therefore, the aim of this study was to acquire insight from Chinese females' subjective perspectives.

METHODS: A total of 12 semi-structured in-depth interviews, with 11 female BRCA1/BRCA 2 mutated gene carriers and 1 non-carrier with a history of one-sided breast cancer and genetic testing performed by the Hong Kong Hereditary Breast Cancer Family Registry, who subsequently underwent CPM, were assessed using thematic analysis and a Stage Conceptual Model. Breast cancer history, procedures conducted, cosmetic satisfaction, pain, body image and sexuality issues, and cancer risk perception were discussed. Retrieval of medical records using a prospective database was also performed.

RESULTS: All participants opted for prophylaxis due to their reservations concerning the efficacy of surveillance and worries of recurrent breast cancer risk. Most participants were satisfied with the overall results and their decision. One-fourth expressed different extents of regrets. Psychological relief and decreased breast cancer risk were stated as major benefits. Spouses' reactions and support were crucial for post-surgery sexual satisfaction and long-term adjustment.

CONCLUSIONS: Our findings indicate that thorough education on cancer risk and realistic expectations of surgery outcomes are crucial for positive adjustment after CPM. Appropriate genetic counseling and pre-and post-surgery psychological counseling were necessary. This study adds valuable contextual insights into the experiences of living with breast cancer fear and the importance of involving spouses when counseling these patients.

PMID: 22901201 [PubMed - indexed for MEDLINE]


Reconstructive outcomes in patients undergoing contralateral prophylactic mastectomy.

Crosby MA(1), Garvey PB, Selber JC, Adelman DM, Sacks JM, Villa MT, Lin HY, Park SJ, Baumann DP.
BACKGROUND: As the rate of contralateral prophylactic mastectomy in breast cancer patients increases, more women are seeking immediate bilateral breast reconstruction. The authors evaluated complication rates in the index and prophylactic breasts in patients undergoing bilateral immediate reconstruction.

METHODS: The authors retrospectively reviewed the outcomes of all consecutive patients undergoing immediate postmastectomy bilateral reconstruction for an index breast cancer combined with a contralateral prophylactic mastectomy between 2005 and 2010. Patient, tumor, reconstruction, and outcome characteristics were compared between the index and prophylactic breasts in the same patient. Patients were classified by reconstruction method: implant, abdominal flap, or latissimus dorsi flap/implant. Regression models evaluated patient and reconstruction characteristics for potential predictive or protective associations with postoperative complications.

RESULTS: Of 497 patients included, 334 (67.2 percent) underwent implant reconstruction, 142 (28.6 percent) had abdominal flap reconstruction, and 21 (4.2 percent) had latissimus dorsi flap/implant reconstruction. Index reconstructions had a complication rate (22.5 percent) equivalent to that of contralateral prophylactic mastectomy reconstructions (19.1 percent; p=0.090). Overall, 101 patients (20.3 percent) developed a complication in one reconstructed breast, and 53 (10.7 percent) developed complications in both breasts. Of the 154 patients who developed complications, 42 (27.3 percent) developed a complication in the prophylactic breast.

CONCLUSIONS: Immediate index and contralateral prophylactic breast reconstructions appear to have equivalent outcomes, both overall and across reconstruction classifications. Together, patients, reconstructive surgeons, and extirpative surgeons should carefully consider the oncologic benefits of a contralateral prophylactic mastectomy in light of the risk of increased surgical morbidity of this type of mastectomy and reconstruction.

CLINICAL QUESTION/LEVEL OF EVIDENCE: Therapeutic, III.

PMID: 22030485 [PubMed - indexed for MEDLINE]


Perceptions of contralateral breast cancer: an overestimation of risk.

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INTRODUCTION: The rate of contralateral prophylactic mastectomy (CPM) has recently increased. The aim of this study is to assess perceptions of contralateral breast cancer (CBC) risk among breast cancer patients and to evaluate tumor and patient factors associated with risk perception.

METHODS: We conducted a prospective survey study to evaluate perceptions of CBC risk in women newly diagnosed with ductal carcinoma in situ (DCIS) or stage I/II invasive breast cancer. Surveys were distributed in clinic prior to surgical consultation. Exclusion criteria included history of breast cancer, bilateral breast cancer, neoadjuvant chemotherapy or radiation for the current breast cancer, or BRCA mutation. Survey questions used open-ended responses or five-point Likert scale scoring (5 = very likely, 1 = not at all likely).

RESULTS: Seventy-four women (mean age 54.5 years) completed the survey. Diagnoses included invasive ductal cancer (66.2%), invasive lobular cancer (9.5%), and DCIS (20.3%). Most women (54.1%) underwent breast-conserving surgery; the remaining had bilateral mastectomy including CPM (17.6%) or unilateral mastectomy (10.8%). Overall, women substantially overestimated their risk of developing CBC. The mean estimated 10-year risk of CBC was 31.4% [95% confidence interval (CI) 24.7-37.9%] and 2.6 ± 0.15 on the rank scale. The perceived risk of CBC was not significantly associated with cancer stage, family history, age, or CPM.

CONCLUSIONS: At time of surgical evaluation, women with unilateral breast cancer substantially overestimated their risk of CBC; however, this elevated risk perception was not associated with choosing CPM. Early physician counseling is needed to provide women with accurate information regarding their true CBC risk.

PMID: 21947590  [PubMed - indexed for MEDLINE]


Contralateral prophylactic mastectomy: long-term consistency of satisfaction and adverse effects and the significance of informed decision-making, quality of life, and personality traits.

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PURPOSE: This study aims to evaluate the long-term consistency of satisfaction with contralateral prophylactic mastectomy (CPM) and adverse psychosocial effects as well as to explore the effect of informed decision-making, personality traits, and quality of life (QOL) on satisfaction.

METHODS: A previously established cohort of women with unilateral breast cancer who had undergone CPM between 1960 and 1993 were surveyed using study-specific and standardized questionnaires at two follow-up time points. The first survey
was a mean of 10.7 years and the second survey a mean of 20.2 years after CPM. RESULTS: 487 of the 583 women who responded to the first study were alive and resurveyed. Data from both surveys were available for 269 women. With longer follow-up, there was a small increase in the percentage of women satisfied (90%) and those who would choose CPM again (92%) (4% and 2% increase from first survey, respectively). Most adversely affected were body appearance (31%), feelings of femininity (24%), and sexual relationships (23%). Ninety-three percent of women felt they had made an informed decision. Perception of making an informed choice and current QOL were moderately associated with satisfaction with CPM (r = 0.37 and 0.37, respectively) while associations with trait anxiety and optimism were weak (r = 0.27 and 0.21, respectively). CONCLUSIONS: Long-term satisfaction and adverse effects remained remarkably stable. It is important that women fully understand the benefits and adverse effects associated with CPM.

PMCID: PMC3964591
PMID: 21947589  [PubMed - indexed for MEDLINE]


Meta-analysis of sentinel lymph node biopsy at the time of prophylactic mastectomy of the breast.

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BACKGROUND: Prophylactic mastectomy is performed to decrease the risk of breast cancer in women at high risk for the disease. The benefit of sentinel lymph node biopsy (SLNB) at the time of prophylactic mastectomy is controversial, and we performed a meta-analysis of the reported data to assess that benefit.

METHODS: We searched MEDLINE, EMBASE and the Cochrane Library databases from January 1993 to December 2009 for studies on patients who underwent SLNB at the time of prophylactic mastectomy. Two reviewers independently evaluated all the identified papers, and only retrospective studies were included. We used a mixed-effect model to combine data.

RESULTS: We included 6 studies in this review, comprising a total study population of 1251 patients who underwent 1343 prophylactic mastectomies. Of these 1343 pooled prophylactic mastectomies, the rate of occult invasive cancer (21 cases) was 1.7% (95% confidence interval [CI] 1.1%-2.5%), and the rate of positive SLNs (23 cases) was 1.9% (95% CI 1.2%-2.6%). In all, 36 cases (2.8%, 95% CI 2.0%-3.8%) led to a significant change in surgical management as a result of SLNB at the time of prophylactic mastectomy. In 17 cases, patients with negative SLNs were found to have invasive cancer at the time of prophylactic mastectomy and avoided axillary lymph node dissection (ALND). In 19 cases, patients with
positive SLNBs were found not to have invasive cancer at the time of prophylactic mastectomy and needed a subsequent ALND. Of the 23 cases with positive SLNs, about half the patients had locally advanced disease in the contralateral breast. CONCLUSION: Sentinel lymph node biopsy is not suitable for all patients undergoing prophylactic mastectomy, but it may be suitable for patients with contralateral, locally advanced breast cancer.

PMCID: PMC3195666
PMID: 21651834 [PubMed - indexed for MEDLINE]


Contralateral prophylactic mastectomy in breast cancer patients who test negative for BRCA mutations.

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BACKGROUND: Determination of BRCA1 and 2 mutation carrier status is important. Although BRCA carriers are offered bilateral mastectomy and oophorectomy, most who test negative decline. Some women choose contralateral prophylactic mastectomy (CPM) at the time of their breast cancer diagnosis despite testing negative.

METHODS: A total of 110 women with breast cancer received genetic testing before surgical treatment. Patient demographics, tumor characteristics, surgical treatment, and magnetic resonance imaging use were recorded.

RESULTS: Results revealed BRCA1/2 mutation in 33%, variant of unknown significance in 6%, and no mutation in 61% of women. In BRCA-negative women, 37% chose CPM. Marital status was significant for CPM (P = .03). Race, age, stage of presentation, and biomarker status were not associated with choice of CPM. Ninety-six percent of CPM recipients underwent breast reconstruction. Magnetic resonance imaging use did not affect CPM rates (P = .99).

CONCLUSIONS: Increased rates of CPM have been observed. In our study married women were more likely to choose CPM. We recommend genetic genotyping before surgery. These findings warrant further investigation.

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PMID: 21871984 [PubMed - indexed for MEDLINE]


Contralateral prophylactic mastectomy.
BACKGROUND: Contralateral prophylactic mastectomy (CPM) is often discussed as a treatment option for women with a diagnosis of unilateral breast cancer. The purpose of this study was to identify the prevalence of pathology within the specimen at the time of CPM and to evaluate potential risk factors.

METHODS: Patients with a unilateral breast malignancy who underwent CPM were identified from the database of Scott and White Breast Cancer Clinic. A retrospective cohort study comparing disease status and various exposure parameters was conducted via chart review.

RESULTS: Of the 301 patients who met the inclusion criteria, there were 14 cases (4.7%) with malignancy and 45 cases (15.0%) with moderate-to-high risk lesions. Multivariate analysis demonstrated 2 independent factors predictive of malignant or moderate-to-high risk lesions: age >54 years and lobular histology in the original specimen.

CONCLUSIONS: The prevalence of malignant and premalignant lesions at the time of CPM was nearly 1 in 5.

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Contralateral mastectomy, in the setting of unilateral breast cancer, may only offer a survival benefit in selected patients. In fact, most women with a unilateral breast cancer will never develop a contralateral breast cancer. Despite this, there is a rapidly increasing trend of patients undergoing contralateral prophylactic mastectomy. The Society of Surgical Oncology has provided relative clinical indications for this prophylactic procedure; however, there are other clinical and more important patient factors that are relevant to the decision. In this article, we discuss the indications for this controversial procedure and also explore the patient’s motivation to undergo this preventative measure. Nevertheless, the decision to perform a contralateral mastectomy should include a multidisciplinary team approach in conjunction with a patient who has been appropriately informed regarding the risks, benefits and alternatives of this procedure.
Cost-effectiveness of contralateral prophylactic mastectomy versus routine surveillance in patients with unilateral breast cancer.

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PURPOSE: Contralateral prophylactic mastectomy (CPM) rates in women with unilateral breast cancer are increasing despite controversy regarding survival advantage. Current scrutiny of the medical costs led us to evaluate the cost-effectiveness of CPM versus routine surveillance as an alternative contralateral breast cancer (CBC) risk management strategy.

METHODS: Using a Markov model, we simulated patients with breast cancer from mastectomy to death. Model parameters were gathered from published literature or national databases. Base-case analysis focused on patients with average-risk breast cancer, 45 years of age at treatment. Outcomes were valued in quality-adjusted life-years (QALYs). Patients' age, risk level of breast cancer, and quality of life (QOL) were varied to assess their impact on results.

RESULTS: Mean costs of treatment for women age 45 years are comparable: $36,594 for the CPM and $35,182 for surveillance. CPM provides 21.22 mean QALYs compared with 20.93 for surveillance, resulting in an incremental cost-effectiveness ratio (ICER) of $4,869/QALY gained for CPM. To prevent one CBC, six CPMs would be needed. CPM is no longer cost-effective for patients older than 70 years (ICER $62,750/QALY). For BRCA-positive patients, CPM is clearly cost-effective, providing more QALYs while being less costly. In non-BRCA patients, cost-effectiveness of CPM is highly dependent on assumptions regarding QOL for CPM versus surveillance strategy.

CONCLUSION: CPM is cost-effective compared with surveillance for patients with breast cancer who are younger than 70 years. Results are sensitive to BRCA-positive status and assumptions of QOL differences between CPM and surveillance patients. This highlights the importance of tailoring treatment for individual patients.
Mastectomy and contralateral prophylactic mastectomy rates: an institutional review.

Damle S, Teal CB, Lenert JJ, Marshall EC, Pan Q, McSwain AP.

Background. Breast conservation surgery (BCS) followed by radiation is as effective as mastectomy for long-term survival and is considered standard of care for early-stage breast cancer. An increasing number of patients are opting for cancer-side mastectomies (CM) and often contralateral prophylactic mastectomies (CPM). Our study investigates if there are increasing trends in our patient population toward CM and CPM and identifies common factors associated with those electing to have more extensive surgery.

Methods. A retrospective analysis was performed on 812 breast cancer surgeries between January 2001 and December 2009 at The George Washington University Breast Care Center. BCS-eligible patients who elected to have BCS were compared with those who chose CM. Patients who underwent CM were compared with patients undergoing CM and CPM.

Results. A personal or family history of breast cancer and larger tumor size were positively associated with choosing CM in BCS-eligible patients. A nonstatistically significant trend toward CM was seen in younger patients. Age, family history, fewer children, Caucasian race, and reconstructive surgery were positively associated with choosing CPM.

Conclusion. Mastectomy rates at this institution have not shown the recent sharp increase observed by some authors. The association of age, race, family history, and parity with CPM has been corroborated in multiple studies. However, there is disagreement between statistically significant findings among investigators evaluating factors associated with CPM, and there is limited data in the literature characterizing BCS-eligible patients who chose CM. Larger prospective studies are necessary to further evaluate CM and CPM rates.

PMCID: PMC3373170
PMID: 22696239  [PubMed]


Clinical management factors contribute to the decision for contralateral prophylactic mastectomy.

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Comment in
PURPOSE: To determine whether increasing rates of contralateral prophylactic mastectomy (CPM) are due to recognition of risk factors for contralateral breast cancer (CBC) or treatment factors related to the index lesion.

METHODS: From 1997 to 2005, 2,965 patients with stage 0 to III primary unilateral breast cancer underwent mastectomy at Memorial Sloan-Kettering Cancer Center. Patients who did and did not undergo CPM within 1 year of treatment for their index cancer were compared to identify independent predictors of CPM.

RESULTS: The rate of CPM was 13.8% (n = 407), increasing from 6.7% in 1997 to 24.2% in 2005 (P < .0001). Patients with BRCA mutations or prior mantle radiation (n = 52) accounted for 13% of those having CPM. The rate of CPM by surgeon varied from 1% to 26%. Multivariate logistic regression adjusting for surgeon-identified white race (odds ratio [OR] = 3.3), immediate reconstruction (OR = 3.3), family history of breast cancer (OR = 2.9), magnetic resonance imaging (MRI) at diagnosis (OR = 2.8), age younger than 50 years (OR = 2.2), noninvasive histology (OR = 1.8), and prior attempt at breast conversation (OR = 1.7) to be independent predictors of CPM.

CONCLUSION: These data suggest that increasing use of CPM is not associated with increased recognition of patients at high risk for CBC. Treatment factors, such as immediate reconstruction, preoperative MRI, and unsuccessful attempts at breast conservation, are associated with increased rates of CPM. Efforts to optimize breast conservation, minimize unnecessary tests, and improve patient education about the low risk of CBC may help to curb this trend.

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Behavioral and psychosocial effects of rapid genetic counseling and testing in newly diagnosed breast cancer patients: design of a multicenter randomized clinical trial.


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BACKGROUND: It has been estimated that between 5% and 10% of women diagnosed with breast cancer have a hereditary form of the disease, primarily caused by a BRCA1 or BRCA2 gene mutation. Such women have an increased risk of developing a new primary breast and/or ovarian tumor, and may therefore opt for preventive surgery (e.g., bilateral mastectomy, oophorectomy). It is common practice to offer high-risk patients genetic counseling and DNA testing after their primary treatment, with genetic test results being available within 4-6 months. However, some non-commercial laboratories can currently generate test results within 3 to 6 weeks, and thus make it possible to provide rapid genetic counseling and
testing (RGCT) prior to primary treatment. The aim of this study is to determine the effect of RGCT on treatment decisions and on psychosocial health.

METHODS/DESIGN: In this randomized controlled trial, 255 newly diagnosed breast cancer patients with at least a 10% risk of carrying a BRCA gene mutation are being recruited from 12 hospitals in the Netherlands. Participants are randomized in a 2:1 ratio to either a RGCT intervention group (the offer of RGCT directly following diagnosis with tests results available before surgical treatment) or to a usual care control group. The primary behavioral outcome is the uptake of direct bilateral mastectomy or delayed prophylactic contralateral mastectomy. Psychosocial outcomes include cancer risk perception, cancer-related worry and distress, health-related quality of life, decisional satisfaction and the perceived need for and use of additional decisional counseling and psychosocial support. Data are collected via medical chart audits and self-report questionnaires administered prior to randomization, and at 6 month and at 12 month follow-up.

DISCUSSION: This trial will provide essential information on the impact of RGCT on the choice of primary surgical treatment among women with breast cancer with an increased risk of hereditary cancer. This study will also provide data on the psychosocial consequences of RGCT and of risk-reducing behavior.

TRIAL REGISTRATION: The study is registered at the Netherlands Trial Register (NTR1493) and ClinicalTrials.gov (NCT00783822).

PMCID: PMC3022885
PMID: 21219598 [PubMed - indexed for MEDLINE]


Current knowledge on contralateral prophylactic mastectomy among women with sporadic breast cancer.

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The use of contralateral prophylactic mastectomy (CPM) in the U.S. among patients with unilateral invasive breast cancer increased by 150% from 1993 to 2003. Although CPM has been shown to reduce the risk for developing contralateral breast cancer, there is conflicting evidence on whether or not it reduces breast cancer mortality or overall death. The increase in the CPM rate is especially concerning among women with early-stage sporadic breast cancer who have a minimal annual risk for developing contralateral breast cancer, and for many of these women the risk for distant metastatic disease outweighs the risk for contralateral breast cancer. The lack of information about the clinical value of CPM in women with sporadic breast cancer is an important public health problem.
This review evaluates current data on the clinical indications for CPM and long-term patient satisfaction and psychosocial outcomes. Gaps in knowledge about the clinical value of CPM, including patient- and physician-related psychosocial factors that influence the decision-making process of CPM among women with sporadic breast cancer, are highlighted.

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PMID: 21672945  [PubMed - indexed for MEDLINE]


Prophylactic mastectomy for the prevention of breast cancer.
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BACKGROUND: Recent progress in understanding the genetic basis of breast cancer has increased interest in prophylactic mastectomy (PM) as a method of preventing breast cancer.

OBJECTIVES: (i) To determine whether prophylactic mastectomy reduces death rates from any cause in women who have never had breast cancer and in women who have a history of breast cancer in one breast, and (ii) to examine the effect of prophylactic mastectomy on other endpoints, including breast cancer incidence, breast cancer mortality, disease-free survival, physical morbidity, and psychosocial outcomes.

SEARCH STRATEGY: We searched the Cochrane Central Register of Controlled Trials (CENTRAL, 2002), MEDLINE and Cancerlit (1966 to June 2006), EMBASE (1974 to June 2006), and the WHO International Clinical Trials Registry Platform (WHO ICTRP) search portal (until June 2006). Studies in English were included.

SELECTION CRITERIA: Participants included women at risk for breast cancer in at least one breast. Interventions included all types of mastectomy performed for the purpose of preventing breast cancer.

DATA COLLECTION AND ANALYSIS: At least two authors independently abstracted data. Data were summarized descriptively; quantitative meta-analysis was not feasible due to heterogeneity of study designs and insufficient reporting. Data were analyzed separately for bilateral prophylactic mastectomy (BPM) and contralateral prophylactic mastectomy (CPM).

MAIN RESULTS: All 39 included studies were observational studies with some methodological limitations; randomized trials were absent. The studies presented data on 7,384 women with a wide range of risk factors for breast cancer who
underwent PM. BPM studies on the incidence of breast cancer and/or disease-specific mortality reported reductions after BPM particularly for those with BRCA1/2 mutations. For CPM, studies consistently reported reductions in incidence of contralateral breast cancer but were inconsistent about improvements in disease-specific survival. Only one study attempted to control for multiple differences between intervention groups and this study showed no overall survival advantage for CPM at 15 years. Another study showed significantly improved survival following CPM but after adjusting for bilateral prophylactic oophorectomy, the CPM effect on all-cause mortality was no longer significant. Sixteen studies assessed psychosocial measures; most reported high levels of satisfaction with the decision to have PM but more variable satisfaction with cosmetic results. Worry over breast cancer was significantly reduced after BPM when compared both to baseline worry levels and to the groups who opted for surveillance rather than BPM. Case series reporting on adverse events from PM with or without reconstruction reported rates of unanticipated re-operations from 4% in those without reconstruction to 49% in patients with reconstruction.

**AUTHORS’ CONCLUSIONS:** Sixteen studies have been published since the last version of the review, without altering our conclusions. While published observational studies demonstrated that BPM was effective in reducing both the incidence of, and death from, breast cancer, more rigorous prospective studies (ideally randomized trials) are needed. BPM should be considered only among those at very high risk of disease. There is insufficient evidence that CPM improves survival and studies that control for multiple confounding variables are needed.

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Contralateral prophylactic mastectomy is associated with a survival advantage in high-risk women with a personal history of breast cancer.


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BACKGROUND: The aim of this study was to investigate whether contralateral prophylactic mastectomy (CPM) in addition to therapeutic mastectomy (TM) is associated with a survival advantage in high-risk women with breast cancer. METHODS: A total of 385 women with stage I or II breast cancer and a family history of breast cancer who underwent TM and CPM between 1971 and 1993 were evaluated and compared to 385 patients matched on age at diagnosis, tumor stage, nodal status, and year of diagnosis who underwent TM-only. Contralateral breast
cancer (CBC) events and survival outcomes were compared.

RESULTS: At a median follow-up of 17.3 years, 2 CBCs (0.5%) developed in the CPM cohort and 31 (8.1%) in the TM-only cohort, representing a 95% decreased risk of CBC (hazard ratio [HR] = 0.05, 95% confidence interval [95% CI] 0.01-0.22, P < 0.0001). One hundred twenty-eight women in the CPM group and 162 women in the TM-only group have died, resulting in 10-year overall survival estimates of 83 and 74%, respectively (HR 0.68, 95% CI 0.54-0.86, P = 0.001). This difference in overall survival persisted in multivariate analysis (HR 0.77, P = 0.03).

Disease-free survival (DFS) was better in the CPM cohort than the TM-only group (HR 0.66, 95% CI 0.53-0.82, P = 0.0002) and remained significant in multivariate analysis (HR 0.67, P = 0.0005).

CONCLUSIONS: In this retrospective cohort study, CPM was associated with decreased CBC event and improved overall survival and disease free survival.

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PMID: 20853163  [PubMed - indexed for MEDLINE]


Association of risk-reducing surgery in BRCA1 or BRCA2 mutation carriers with cancer risk and mortality.


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Comment in
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CONTEXT: Mastectomy and salpingo-oophorectomy are widely used by carriers of BRCA1 or BRCA2 mutations to reduce their risks of breast and ovarian cancer.

OBJECTIVE: To estimate risk and mortality reduction stratified by mutation and prior cancer status.

DESIGN, SETTING, AND PARTICIPANTS: Prospective, multicenter cohort study of 2482 women with BRCA1 or BRCA2 mutations ascertained between 1974 and 2008. The study was conducted at 22 clinical and research genetics centers in Europe and North America to assess the relationship of risk-reducing mastectomy or salpingo-oophorectomy with cancer outcomes. The women were followed up until the end of 2009.
MAIN OUTCOMES MEASURES: Breast and ovarian cancer risk, cancer-specific mortality, and overall mortality.

RESULTS: No breast cancers were diagnosed in the 247 women with risk-reducing mastectomy compared with 98 women of 1372 diagnosed with breast cancer who did not have risk-reducing mastectomy. Compared with women who did not undergo risk-reducing salpingo-oophorectomy, women who underwent salpingo-oophorectomy had a lower risk of ovarian cancer, including those with prior breast cancer (6% vs 1%, respectively; hazard ratio [HR], 0.14; 95% confidence interval [CI], 0.04-0.59) and those without prior breast cancer (6% vs 2%; HR, 0.28 [95% CI, 0.12-0.69]), and a lower risk of first diagnosis of breast cancer in BRCA1 mutation carriers (20% vs 14%; HR, 0.63 [95% CI, 0.41-0.96]) and BRCA2 mutation carriers (23% vs 7%; HR, 0.36 [95% CI, 0.16-0.82]). Compared with women who did not undergo risk-reducing salpingo-oophorectomy, undergoing salpingo-oophorectomy was associated with lower all-cause mortality (10% vs 3%; HR, 0.40 [95% CI, 0.26-0.61]), breast cancer-specific mortality (6% vs 2%; HR, 0.44 [95% CI, 0.26-0.76]), and ovarian cancer-specific mortality (3% vs 0.4%; HR, 0.21 [95% CI, 0.06-0.80]).

CONCLUSIONS: Among a cohort of women with BRCA1 and BRCA2 mutations, the use of risk-reducing mastectomy was associated with a lower risk of breast cancer; risk-reducing salpingo-oophorectomy was associated with a lower risk of ovarian cancer, first diagnosis of breast cancer, all-cause mortality, breast cancer-specific mortality, and ovarian cancer-specific mortality.
Endocrine therapy with tamoxifen or aromatase inhibitors significantly reduces the risk of contralateral breast cancer and may be more acceptable than CPM for some patients.

PMID: 20425603  [PubMed - indexed for MEDLINE]