Clinical Correspondence

Managing suicidal ideation in a breast cancer cohort seeking reconstructive surgery

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Dear Editor,

Emotional and social adaptation is a central challenge for women with recently diagnosed breast cancer [1]. Prevalence rates for anxiety and depressive disorders among a heterogeneous sample of cancer patients are estimated to range from 10 to 40% [2,3], and women with newly diagnosed breast cancer demonstrate comparable rates of affective distress [4]. As a result, breast reconstruction outcome studies routinely assess psychological variables and their influence on various patient-specific outcomes such as aesthetic satisfaction and functional status. While these studies typically include measures of preoperative depression and anxiety as possible predictors of clinical outcomes, relatively little attention has been paid to the identification of suicidal ideation (SI) in this cohort. This may seem surprising, given evidence that depression is highly prevalent among cancer patients and, when increasingly severe, presents a primary risk for SI and intention [5]. While numerous studies describe the incidence of suicide among cancer patients in general [6], and women with breast cancer more specifically [7], there is sparse information on the prevalence of SI among these populations. The assessment of SI in breast cancer patients presenting for reconstruction is in line with the American College of Surgeons Commission on Cancer guidelines for distress screening of all cancer patients by 2015 [8].

We examined the prevalence of preoperative anxiety and depression among women enrolled in an ongoing prospective study of post-mastectomy breast reconstruction procedure outcomes. The prevalence of moderate-to-severe SI challenged the study team to devise an identification and response system to intervene with potential at-risk patients and triage them to appropriate mental health attention. We describe this system and propose its consideration for future surgical outcome studies where depression and SI are of reasonable concern.

Methods

Study population

Patients were recruited as part of the Mastectomy Reconstruction Outcomes Consortium (MROC) Study, a 5-year prospective, multicenter cohort study comparing long-term outcomes of common post-mastectomy breast reconstruction procedures. Eligible subjects included women ≥18 years undergoing first-time unilateral or bilateral breast reconstruction. Only women with breast cancer undergoing immediate reconstruction were included in this analysis. Appropriate approval from the Institutional Review Board at each participating site was obtained.

Data collection

Prior to surgery, patients completed a battery of patient-reported outcome questionnaires soliciting information regarding sociodemographic status, general well-being, treatment satisfaction, pain, and psychosocial status. All data are collected via Velos (Velos Inc., Fremont, CA, USA), a web-based clinical trial management system.

For the current study, we specifically analyzed preoperative data from two measures of anxiety and depressive symptoms.

Measures

Anxiety was evaluated by the Generalized Anxiety Disorder (GAD-7) scale [9], a seven-item self-report inventory that asks respondents to report the frequency of anxiety symptoms over the previous 2 weeks from 'none' (score of 0) to 'daily' (score of 3). A patient's level of anxiety is scaled as none/minimal (0–4), mild (5–9), moderate (10–14), or severe (15–21). A GAD-7 score of ≥10 has a sensitivity of 89% and a specificity of 82% for a diagnosis of generalized anxiety disorder.

Depressive symptoms were assessed using the Patient Health Questionnaire (PHQ-9) [10], a nine-item self-report inventory that quantifies the frequency of depressive symptoms over the previous 2 weeks. Depression levels are interpreted as none/minimal (0–4), mild (5–9), moderate (10–14), moderately severe (15–21), or severe (20–27). PHQ scores of ≥10 have a sensitivity of 88% and specificity of 88% for a diagnosis of major depression. Notably, the last item on the PHQ-9 asks patients to report the frequency of suicidal thoughts and has been found to be significantly associated with suicidality in cancer patients [11]. Significant SI for this study was defined as a score of 2 or 3 reflecting thoughts of suicide occurring more than half the days of the week or every day.

Results

Of a total subject pool of 2378, 2144 (90.2%) women had a diagnosis of breast cancer. Immediate post-mastectomy reconstruction was performed in 1922 (89.6%), with 54.9% undergoing bilateral procedures. The majority underwent implant-based reconstruction (71.6%) compared with autologous tissue (25.6%). Among the potential study sample, 1912 (99.5%) women completed the GAD-7 and 1921 (99.9%) completed the PHQ-9 preoperatively. The mean age of women completing the questionnaires was 49.4 ± 10.0 years.

A total of 337 (17.6%) patients reported moderate or severe anxiety, while 314 (16.3%) indicated moderate or severe depression. Of greatest concern, 14 (0.7%) patients reported significant SI. Two of these women reported daily thoughts of suicide.

Discussion

Our findings replicate previous investigations demonstrating higher rates of anxiety and depressive symptoms among women with breast cancer [2]. Over 16% of our sample reported *moderate-to-severe* anxiety and depressive symptoms, suggesting that these patients suffered potentially clinically significant emotional distress. Assessing for psychological distress may be particularly relevant for the cohort of women seeking immediate reconstruction as they may manifest more acute and severe depressive symptoms when compared with women who choose mastectomy alone or delayed reconstruction [12].

The finding of greatest concern was that 14 patients reported suicidal thoughts more than half the days of the week, with two disclosing *daily* thoughts of suicide. However, the prevalence of SI in our cohort was low at 0.7% compared with a prior study using the PHQ-9 among a sample of cancer patients that found 7.8% of responders reporting significant SI [13]. Among the general population, SI prevalance ranges from 1 to 20% [14]. Obviously, the report of SI on a self-report survey is not a clinical determination of individual suicidal intention and risk, which requires a careful psychiatric inquiry based on known parameters of suicidality. Nonetheless, suicide risk is an important clinical concern for comprehensive cancer patient management, given its potential lethality and prevalence [5]. Several recent reports have raised concern for suicidality specifically among women with breast cancer or a history of breast surgery. For example, Riihimäki *et al.* observed that suicide was the second leading cause of non-cancer death among a cohort of women with a history of breast cancer [15]. Taken together, these preliminary findings suggest that while the rate of suicide among breast cancer patients remains quite low, suicidality should be a concern for all practitioners caring for this population [5].

Although our study is observational rather than interventional in nature, we recognized a responsibility to protect women deemed at risk based on their reported experience of frequent suicidal thoughts. Following the Institutional Review Board approval, a response system was developed to address the need for rapid assessment of patients with serious SI (Figure 1). The study's web-based data collection system, Velos, queries the database every 12 h for newly entered responses to question number 9 on the PHQ-9 equivalent to
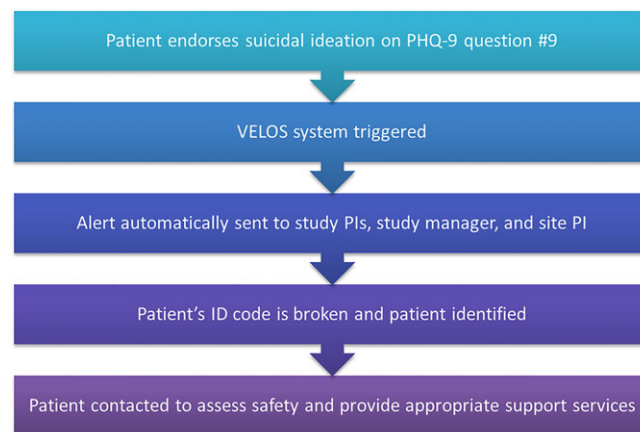

Figure 1. Response system developed to identify and contact at-risk patients. *PI*, principal investigator

significant suicidal thoughts (a score of 2 or 3). When such an entry is detected, an automatic email alert is sent to the study Principal Investigators (PIs), the site PI overseeing the study at the patient's treatment facility, and the MROC study manager. Upon receipt of the alert, the patient is contacted by a qualified member of her healthcare team to assess safety and provide psychological support. Although contact procedures vary by site, a clinician with a mental health background, such as an oncology nurse or social worker, in addition to the site PI, is usually identified to contact the patient. Each site has developed its own process to facilitate a referral to social work or psychiatry, either urgently or expediently, depending on the perceived severity of the suicide risk. It is ultimately the responsibility of the treatment site PI to ensure the patient is contacted. Because the system is automatic, it is in operation 24 h a day. Most importantly, it effectively enables the study team to intervene in a timely fashion when patients report frequent suicidal thoughts. To date, the majority of patients have been contacted within 24 h, with delays most often a result of patients traveling out of town or not answering their telephone.

Healthcare practitioners frequently fail to recognize distress in the cancer patient population [5]. It is likely that reconstruction outcome studies involving breast cancer patients, even those that obtain preoperative patient distress measures, are similarly unaware of clinically significant distress among enrolled subjects. In these studies, baseline psychological measures are typically relegated to a data bank and become operative only once statistical analysis is undertaken to evaluate surgical outcomes. As a result, relevant clinical information that could be potentially crucial for intervening with appropriate mental health services is obscured. While it is unrealistic to expect surgeons to become experts in suicide assessment and intervention, our study illustrates how an automated identification and triage system can be established to address psychological morbidity in cancer patients seeking surgical intervention.

In conclusion, our findings support the new standards of the American College of Surgeons Commission on Cancer requiring distress screening for all new cancer patients. The baseline questionnaires identified women who were troubled by recurrent and strong SI, which prompted the development of a response system to address these patients' needs for expedited psychiatric intervention. Not only do our results demonstrate that approximately one in six breast cancer patients seeking reconstruction report moderate-to-high levels of distress but that an automated response system can effectively alert study members about high-risk patients who require urgent mental health services.

Acknowledgements

Key points

- Published literature on suicidal ideation among women with breast cancer undergoing mastectomy and reconstruction is limited.
- Psychological distress was assessed in a cohort of over 1900 women with breast cancer enrolled in a prospective, multicenter study focusing on reconstruction outcomes.
- Nearly one in six women reported moderate-to-severe levels of anxiety and depression.
- Fourteen women reported significant suicidal ideation, prompting the development of a response system to enable triage to appropriate mental health services.
- Future studies should consider implementing methods to identify high-risk patients in their cohort.

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