Brief Report

Long-Term Follow-Up of Pain and Emotional Characteristics of Women After Surgery for Breast Cancer

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Abstract

Context. Persistent pain after treatment for breast cancer (PPBCT) is a common side effect of breast cancer treatment, with prevalence as high as 50%. It is predominantly a neuropathic condition.

Objectives. The aim of this cross-sectional, questionnaire-based study was to examine the emotional characteristics of patients with PPBCT in long-term breast cancer patients. A secondary objective was to characterize the risk factors and severity of that pain.

Methods. From March 1, 2010 to April 9, 2010, long-term follow-up patients were invited to complete a questionnaire. This recorded their surgical and demographic data and ascertained whether they had PPBCT. If the patient had pain, she completed a range of validated self-report questionnaires and questions about the nature of the pain, including a visual analogue scale.

Results. One hundred eleven patients completed the questionnaire; 33 (29.7%) patients reported chronic pain at a median time of 64 months postoperatively (interquartile range 54.25). Patients with persistent pain were not significantly more anxious ($t_{105} = -0.369$, $P = 0.713$) or depressed ($t_{105} = 0.713$, $P = 0.507$) than patients without pain. Patients with constant pain compared with intermittent pain were significantly more anxious ($t_{25} = -3.460$, $P = 0.002$). Preoperative pain conferred a fivefold increased risk of PPBCT (odds ratio [OR] = 5.17, 95% confidence interval [CI] = 1.79–14.97, $P = 0.002$); chemotherapy conferred a threefold increased risk (OR = 3.004, 95% CI = 1.22–7.40, $P = 0.017$).

Conclusion. We have shown significant numbers of patients suffer from PPBCT. At a median time of 64.5 months, women with pain are not significantly more

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anxious or depressed than women without pain. Preoperative pain and chemotherapy have been highlighted as risk factors. J Pain Symptom Manage 2012;44:608–614.

Key Words
Breast neoplasms, neuralgia, postmastectomy pain syndrome, persistent pain after breast cancer treatment

Introduction

Chronic pain may be defined as pain lasting two months or longer after the initial injury.[1] Plastic changes in the nervous system contribute to the development of persistent pain. Neuropathic pain is "pain arising as a direct consequence of a lesion or disease affecting the somatosensory system."[2]

Persistent pain after breast cancer treatment (PPBCT) is a recognized problem after breast cancer surgery. This typically neuropathic condition[3] can be subdivided into several different conditions with largely unknown pathologies. These include tumor-related nociceptive pain, tumor-related neuropathic pain, and treatment-related pain. More specifically, it can be divided into intercostobrachial neuralgia, phantom breast pain, neuroma pain, and "other" pain.[4] It remains controversial whether chemotherapy is a cause of PPBCT. Previous studies have not demonstrated a link between PPBCT and chemotherapy,[5–7] but there is a well-described link between chemotherapy and peripheral neuropathic pain,[8–12] and potential mechanisms have been suggested.[13]

Reports from the U.K. and Denmark consistently estimate the prevalence of PPBCT at ~50%.[5,14,15] This is concerning as 50% of the women who had pain in the Danish study had moderate-to-severe pain.[5] Further research has examined the effects of PPBCT on women after breast cancer surgery. One study showed that women who reported continued pain between seven and 12 years after surgery have a lower quality of life.[15] However, recent work from Denmark suggests that although younger long-term breast cancer survivors (BCSs) report worse health-related quality of life (HRQOL) than the age-matched general population, older BCSs report better HRQOL than their age-matched equivalents.[16] This study also showed that being single, having less education, and high body mass index were risk factors for lower HRQOL after breast cancer treatment.[16]

Many risk factors have been suggested, with many possible confounding factors. Despite this, the current literature strongly associates younger age,[3,5,6,15,17] preoperative pain, and severe postoperative pain with increased risk of PPBCT.[6,14,17–19] Higher levels of preoperative anxiety[3,17–20] and the type of breast surgery[5,6,19–21] also are associated with increased risk of PPBCT.

The aim of this cross-sectional, questionnaire-based study was to determine the emotional and painful characteristics of patients with PPBCT. A secondary objective was to assess if known risk factors for PPBCT correlate with risk factors in patients undergoing long-term follow-up after breast cancer treatment.

Methods

A questionnaire (see Appendix, available at jpsmjournal.com) was constructed to assess the pain and emotional characteristics of women with PPBCT. After ethics committee approval and an initial pilot study, all patients attending the Edinburgh Cancer Center between March 1, 2010 and April 9, 2010 after surgery for breast cancer were invited to complete the questionnaire.

The questionnaire included questions assessing the broad range of potential risk factors for PPBCT. Patients supplied their demographic, medical, and surgical data. Our primary objective was to investigate the nature of the pain in women and their emotional responses to it. Patients were screened using the question "Do you still experience pain as a result of your treatment?" If they answered "yes," they completed questions characterizing their pain and the