

## Effect of Alexithymia and Emotional Repression on Postsurgical Pain in Women With Breast Cancer: A Prospective Longitudinal 12-Month Study

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**Abstract:** Alexithymia, the inability to identify and express emotions, and emotional repression, a defensive mechanism used to avoid unpleasant emotional experience, have been associated with chronic pain and medical illness including breast cancer, but whether these constructs might predict pain after breast cancer surgery has not been assessed. The present study was conducted to assess the predictive value of alexithymia and emotional repression in postoperative pain. Anxiety, depression, catastrophizing, and psychological adjustment were also assessed. Data were collected before surgery, and then at 2 days and 2, 3, 6, and 12 months after surgery. We included 100 pain-free women, 96% of whom were followed for up to 12 months. Separate multivariate analyses identified anxiety as a significant predictor of postsurgical pain at 3 months, alexithymia at 3, 6, and 12 months, and body image and catastrophizing predicted acute or subacute pain at 2 months. In contrast, emotional repression was not predictive of pain. The generalized estimating equation approach was used and identified alexithymia as the only significant predictor of pain during the 12-month period after surgery. Alexithymia, but not emotional repression, predicted the development of persistent pain after breast surgery independently of anxiety and depression. Thus, alexithymia might be involved in mechanisms of pain chronicity.

**Perspective:** This prospective study, conducted in women with breast cancer surgery, showed that alexithymia but not emotional repression predicted postsurgical pain. These results highlight the role of dysfunction in emotional processing in the development of postsurgical pain.

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**Key words:** Alexithymia, emotional repression, chronic postoperative pain, breast cancer surgery.

Persistent pain is a major complication of surgery for breast cancer<sup>2</sup> with up to 25–60% of women affected,<sup>21</sup> and has a deleterious effect on quality of life.<sup>41,56,62</sup> The effect of somatic factors including particularly the role of nerve injury<sup>2</sup> has been largely emphasized. Anticipated surgery-related pain and

bodily disfigurement also constitute a traumatic experience and women often experience negative emotions, anxiety, or depression after their diagnosis.<sup>14</sup> However, few studies have prospectively investigated the role of psychological predictors for the development of chronic pain after breast surgery. Most studies have been focused on psychological distress, depression, anxiety, and catastrophizing, with discrepant findings regarding their implication on chronic postsurgical pain.<sup>45,53,58,60</sup>

Alexithymia refers to a specific disturbance in psychological functioning, which encompasses difficulties in identification and description of feelings, deficiencies in emotional awareness, constricted imaginary capacities, and an thinking oriented toward the external world.<sup>47</sup> Individuals with alexithymia have difficulty in specifying the nature of their distress but have no

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defensiveness.<sup>33,35</sup> However, emotional repression is viewed as a defensive mechanism, implemented to avoid or inhibit threatening information or unpleasant emotional experiences, so as to preserve a positive self-image.<sup>74</sup> Repressors generally score high on defensiveness but low on anxiety<sup>74</sup> and are considered as generally poorly aware or unaware of their disposition.<sup>20,71,74</sup>

Alexithymia and emotional repression have been reported to be associated with medical illness including breast cancer<sup>22-24,70</sup> and have even been linked with higher rates of cancer progression and death from breast cancer.<sup>23,43,73</sup> These psychological constructs have also been associated with various painful conditions,<sup>25-27,40,42</sup> although discrepant findings have been reported.<sup>51,54,55</sup> However, no study has prospectively investigated whether alexithymia and emotional repression might predict the development of pain after breast surgery.

The investigation of alexithymia and emotional repression as potential predictors of pain after breast surgery might improve our understanding of the mechanisms involved in the development of postoperative pain, their relationships to anxiety and depression, and facilitate identification of the patients who are in need of therapeutic intervention. Because the effects of alexithymia on pain have been shown to be mediated by negative affect,<sup>42,61</sup> we hypothesized that alexithymia might contribute to the development of chronic pain after surgery by increasing the risk of negative affect such as depression, and thus interfere with the individual's ability to reduce or inhibit pain.

The primary objective of the present study was to prospectively investigate the effect of alexithymia and emotional repression on the development of postoperative pain in patients who underwent breast cancer surgery, for up to 12 months after surgery. As a secondary objective, we investigated whether alexithymia and emotional repression differentially predicted postoperative pain at separate time points during follow-up (evaluated at 2 days and 2, 3, 6, and 12 months after surgery). Finally, we explored the relationships between alexithymia, emotional repression, anxiety, depression, catastrophizing, and psychological adjustment in these patients.

## Methods

This study was conducted at René Huguenin Hospital–Curie Institute at St. Cloud, France, between May 2008 and June 2011. It was part of a larger study conducted on the same cohort of breast surgery patients and patients with total knee arthroplasty.<sup>3,45</sup> The study was approved by the local ethics committee (CPP Paris Ile de France VIII) and written informed consent was obtained from the participants after they received a complete description of the study.

### Participants and Procedure

Eligible patients consisted of consecutive female patients who underwent breast surgery and were aged

18 to 85 years. Patients underwent mastectomy or lumpectomy with axillary lymph node dissection in all cases. Women were not included if they had undergone previous breast or axillary surgery, had other malignant conditions, had evidence of distant metastases (apart from lymph node macrometastases), or had undergone radiotherapy or chemotherapy before surgery. We did not include patients with clinically significant or unstable psychiatric or somatic conditions (eg, major depression, psychosis, uncontrolled diabetes mellitus or hypertension, neurological disorders, immune disease, body mass index >45), cognitive impairment, or past or present substance abuse. All of the patients were native French speakers.

In total, 207 consecutive women scheduled for total mastectomy or lumpectomy, with axillary lymph node dissection in all cases, at René Huguenin Hospital were asked to participate in the study: 49 declined to participate and 41 were ineligible (age > 85 years, cognitive disorders, preoperative chemotherapy, language difficulties, previous breast surgery, psychiatric comorbidity).<sup>3,45</sup> The women who declined the study had an education level ( $10.35 \pm 4.06$  years) and ethnicity (90% Caucasian) similar to those who agreed to participate in the study but older age ( $64.48 \pm 11.87$  years). In total, 120 women provided informed consent, but 20 were subsequently excluded (refusal of testing, difficulties in understanding written or oral instructions, attention difficulties, major fatigue). We thus assessed 100 women at baseline and at day 2, 99 women at 2 months, 100 women at 3 and 6 months, and 96 at 12 months after surgery.

Participants were asked to complete questionnaires about their demographic and clinical characteristics, pain cognition, and emotional disturbances including mood and anxiety disorders, in the presence of a certified psychologist. Data regarding alexithymia, emotional repression, catastrophizing, trait anxiety, cancer locus of control, and quality of life were completed 1 month before surgery, and state anxiety and depression were assessed on the day before surgery. The body image scale was administered 2 days after surgery. Patients were questioned about their pain status before surgery and 2 days after surgery (during their hospital stay) by the anesthesiologist, then via a postal survey 2, 3, 6, and 12 months after surgery. Missing data were minimized by the investigators who contacted those who did not send their pain evaluations directly, by telephone.

## Measurements

### Pain and Quality of Life

Before surgery, women were asked to complete a questionnaire regarding the presence or the absence of persistent pain. Women who reported any pain were asked to provide further information regarding the character, location, frequency, and duration of pain and their medication intake. They were asked to rate their average pain intensity over the past 24 hours (from “no pain” to

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