Effects of Mastalgia in Young Women on Quality of Life, Depression, and Anxiety Levels

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Abstract The aims of this study are to evaluate whether or not there is a relationship between mastalgia with anxiety and depression in young women with mastalgia who do not have organic breast pathology and to examine the effect of pain on the quality of life. Forty female pre-menopausal patients between the ages of 20–40 years with mastalgia and 40 totally healthy volunteers with the same characteristics were investigated with the Short Form 36 (SF-36), Hamilton Depression Scale, and the Hamilton Anxiety Rating Scale prospectively following breast examination and radiological examination. Statistical assessments were performed using the SPSS 11.5. Anxiety levels were observed to be higher in the patient group ($p=0.04$). The depression level was higher in the patient group; however, this was not statistically significant ($p=0.08$). The quality of life of the mastalgia group was determined to be lower than that of the control group, and the subparameters of physical function ($p=0.04$), body pain ($p=0.02$), general health ($p=0.03$), and energy ($p=0.008$) were found to be significantly low. There may be a relationship between mastalgia and depression in young women with mastalgia; however, a closer relationship between anxiety

and mastalgia is observed. Mastalgia affects the quality of life of an individual negatively at a significant degree.

Keywords Mastalgia · Quality of life · Depression · Anxiety

Introduction

Mastalgia is a common reason for admission to breast or general surgery clinics among women and the most common benign condition of the breast. The rate of women that have mastalgia at any time of their lives is between 50 and 80 %, and the etiology of mastalgia has not been understood completely up until now [1, 2]. Although mastalgia is encountered frequently in clinical practice, only a few people are treated [3].

Mastalgia can be cyclic or not, intermittent or continuous, and localized or widespread. Non-cyclic mastalgia may either originate from breast tissue or chest wall or there can be intermittent or continuous mastalgia, and in general, no cause originating from the chest wall is found. Cyclic mastalgia is characterized with exacerbation of pain at the premenstrual period [2]. In most of the cases, no physical cause is determined and very little response is obtained from the given medical treatments. In 1949, Patey proposed for the first time that there can be a psychologically-based problem in most of the patients.

Today, in spite of all radiologic and medical developments, the etiology of mastalgia is not fully enlightened. There is a relationship determined between mastalgia with depression, anxiety, and psychological symptoms of somatization disorder, especially in treatment-resistant mastalgia; besides, mastalgia has been found to be related to high stress level [4–6].

Our aims in this study were to evaluate the relationship of the complaint of mastalgia with depression and anxiety in

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women presenting to the polyclinic with the complaint of mastalgia, in whom no pathology was detected with clinical and radiological evaluation and to examine its effect on the quality of life.

Materials and Methods

This cross-sectional study was conducted prospectively between June 2012 and December 2013 after having obtained the necessary approval of the Firat University School of Medicine Clinical Research Ethics Committee.

The study was conducted on 40 female pre-menopausal patients between the ages of 20–40 years who were at least high school graduates, presenting to our hospital's general surgery polyclinic with the complaint of mastalgia and diagnosed as non-cyclic mastalgia, and 40 volunteers with the same characteristics and who were completely healthy.

In the patient selection, the following were excluded from the study:

- Those diagnosed with breast cancer
- Those with history of psychiatric illness or use of any anti-depressant medication
- Those who had undergone previous medical procedures on the breast such as breast surgery, biopsy, etc.
- Those with history of trauma to the chest region within the previous 1 month
- Those with mastalgia persisting for less than 6 months
- Those with benign events such as breast cysts
- Pregnant women and breastfeeding women
- Those with an inflammatory event such as breast abscess, etc.

The control group was selected among volunteers who did not have any history of previous breast disease or psychiatric disease and who had not experienced mastalgia. The exclusion criteria that had been applied to the patient group were applied to the control group too.

All the patients underwent a physical examination and radiological imaging. Patients in whom pathologies were detected were excluded from the study. Then, the patients without any breast pathology were investigated with the Short Form 36 (SF-36), Hamilton Depression Scale, and the Hamilton Anxiety Rating Scale [7–9]. The control group also underwent physical examination and radiological imaging. Those in whom pathologies were determined were excluded from the study. Those with no detected pathology also underwent the quality of life, depression, and anxiety tests.

The SF-36 scale is a self-reported scale, which evaluates eight dimensions of health with 36 items. These dimensions consist of the following parts: physical function (limitation of physical activity because of health problems), physical role

(limitations of daily life activities because of health problems), body pain, general health (evaluation of the overall health of the individual), vitality (energy), mental health, social function, and emotional role (limitations of daily life activities because of mental health problems). The SF-36 scale is scored over 100 scores, and the obtained scores vary between 0 and 100 scores for each component. In this scale, while higher scores indicate good health, the lower scores demonstrate deterioration in health [10].

The Hamilton Depression Scale is a test that is applied to individuals with depressive symptoms by the clinician, and it measures the level and the severity of change of the depression. This scale was developed by M. Hamilton and B.W. Williams. In this test, which includes 17 questions, each question is scaled between 0 and 4 [11].

The Hamilton Anxiety Scale was developed by Hamilton in 1959 in order to determine the level of anxiety and symptom distribution and to measure severity change. It comprises a total of 14 questions. Each question is scored between 0 and 4, and a total score is obtained by the sum of scores obtained from each item. The total score of the scale varies between 0 and 56 [12]. The patient and the control groups were compared for quality of life, depression, and anxiety level.

Statistical Assessment

The SPSS 11.5 program was used in order to assess the data statistically, and the *t* test was applied. A *p* value of <0.05 was accepted as statistically significant.

Results

The mean age of the patient group was 27.15 ± 4.19 years, and the mean age of the control group was 26.60 ± 4.52 years. There was no statistically significant difference detected between these two values ($p=0.57$).

When the two groups were compared for the SF-36 quality of life, the quality of life of the patient group was observed to be lower than that of the control group in all subcategories. However, this difference between the two groups was not statistically significant when examined for physical role difficulty ($p=0.24$), social functionalism ($p=0.17$), and emotional role difficulty ($p=0.25$). On the other hand, there was a significant difference between the two groups for the physical functionalism ($p=0.04$), corporal pain ($p=0.02$), and general health ($p=0.03$) measurements. In particular, the level of energy parameter was seen to be lower in the patient group than that in the control group. In terms of this parameter, there was a highly significant difference between the two groups ($p=0.008$). Although there was no statistically significant difference detected in terms of the mental health level, the difference was valuable ($p=0.07$). The mean values of the patient

Table 1 Assessment of the groups in terms of quality of life

SF-36 ^a	Mastalgia group (N=40)	Control group (N=40)	<i>p</i>
Physical function	70.75±3.57	79.0±1.85	0.04
Physical role	58.12±5.32	66.25±4.52	0.24
Body pain	57.75±2.76	68.3±2.57	0.02
General health	55.17±2.46	61.87±1.93	0.03
Social functionalism	64.68±2.6	72.18±4.8	0.17
Energy	44.52±3.57	56.5±2.54	0.008
Emotional role	53.8±2.21	57.6±2.44	0.25
Mental health	50.8±5.96	64.96±5.05	0.07

^a Short Form-36

and the control groups in the SF-36 quality of life scale measurements have been presented in Table 1.

When the anxiety and the depression tests' values of the groups were compared, the anxiety level was observed to be higher in the patient group, and this difference was statistically significant ($p=0.04$). The depression level was also found to be higher in the patient group, and although there was no significant difference between the two groups statistically, the difference was valuable ($p=0.08$). The mean anxiety and depression level values of the groups have been presented in Table 2.

Discussion

Today, investigation of the etiology of mastalgia continues. Some factors such as caffeine, cigarette smoking, high plasma fatty acids, prolactin, and acute stress have been demonstrated to possibly be effective on the etiology [13]. As the reason for pain, it has been reported in previous studies that in individuals without any clinical or radiological symptoms, mastalgia is not related to psychoneurotic disorders; however, depression is often encountered (44 %). Besides, it has been demonstrated that anxiety and depression scores are increased in patients who do not respond to treatment. Furthermore, it has been demonstrated in previous studies that there are some psychological disorders in individuals with mastalgia such as loss of self-esteem, helplessness, and depression [14].

Women without pathology on the physical examination and radiological examination were enrolled in this study, both

during the patient and the control group selections. Thus, patients who did not have an underlying breast pathology, but mastalgia, and healthy volunteers were compared, and the anxiety value was found to be significantly higher in the patient group. Similarly, the depression level was found to be higher too, but not significant statistically. However, significant differences in depression levels have been found in similar studies [15].

It has been stated in the literature that severe mastalgia in the daily life of women can be related to the increase of fear of breast cancer, and furthermore, in people with mild and moderate mastalgia, when the suggestion and assurance are given that the symptoms are not related to cancer, successful treatment is achieved in 70 % of the patients [16].

Breast cancer is detected only in 0.4 % of patients who present with mastalgia, and no relationship is determined between mastalgia and the development of breast cancer in subsequent years [17]. Plu-Bureau et al. stated an increased breast cancer risk in patients with benign breast pathology with mastalgia [18]. In contrast, there is no data about the degree of breast cancer that may be associated with mastalgia without organic pathology. Kyranou et al. obtained lower functional status scores and significant depression scores in patients with breast cancer who had preoperative mastalgia than in those without mastalgia in the preoperative period [19]. The most important difference between this study and ours was the selection of patients with cancer, and this demonstrates that mastalgia can be very effective on depression and well-being.

It has been demonstrated in a large-scale study that cyclic mastalgia affects the sleeping status by 10, 6, and 13 %, the physical activity by 36 %, and the sexual activity by 48 % [20]. However, those with benign breast diseases had also been included in this study. Besides, unlike our study, patients with cyclic mastalgia had been included in the study and there was no control group formed. Chronic or repetitive mastalgia also affects the women's quality of life deeply, since yet, there are no effective and reliable drugs present [14].

In many studies evaluating the quality of life, the qualities of lives have been evaluated either after cancer surgery or reconstruction. The performed radical surgeries decrease the

Table 2 Comparison of the depression and anxiety scale scores of the groups

Scale	Mastalgia group (N=40)	Control group (N=40)	<i>p</i>
HAM-D ^a	11.3±0.97	9.37±0.56	0.08
HAM-A ^b	12.8±1.18	8.6±0.80	0.04

^a Hamilton Depression Scale^b Hamilton Anxiety Scale

quality of life, while increases in the quality of life have been determined with reconstructive surgeries [21, 22]. According to our study, significant decreases were detected in the four scales of the total eight SF-36 scales (physical functioning, corporal pain, general health, and energy) in the patient group.

In terms of quality of life, mastalgia mostly affects the energy status, in other words, vitality. According to this, mastalgia has been found to be related to constant feeling of fatigue and exhaustion. At the same time, the anxiety due to the thought of poor health and thinking that it will get worse can cause limitations of all physical activities including bathing and dressing and the daily activities of the patient.

Consequently, in patients who present with the complaint of mastalgia, when there is no detection of an underlying organic pathology, it should be kept in mind that this status can be related to depression and anxiety, and the treatment should be planned taking into consideration that mastalgia can affect the patient's quality of life significantly.

Conflict of Interest The authors declare that they have no competing interests.

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