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Research Article

Evaluation of Symptoms of Depression in Women with Breast Cancer after Modified Radical Mastectomy and Breast Conservative Surgery

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Abstract

Introduction: Breast cancer is the most common cancer in Saudi women. There am various types of breast cancer treatment modalities such as, surgery, chemotherapy, radiotherapy, hormone therapy, and biological therapy. Surgery is generally the first step and there am different types of breast cancer surgery that includes Breast Conservative Surgery, and Modified Radical Mastectomy. Recent research shows women with breast cancer and depression am at higher risk of cancer recurrence and early death than breast cancer patients without depression.

Objective: Evaluation of the presence and severity of symptoms of depression in women treated for breast cancer who underwent surgical procedure using one of two methods, either Modified Radical Mastectomy (MRM) or Breast Conserving Surgery (BCS).

Method: A questionnaire survey involved 10 patients treated in a conservative surgery and 10 patients after Modified Radical Mastectomy. Hamilton rating scale for depression was used in the study. The patient's responses was statically analyzed.

Results: Based on Hamilton Rating Scale for Depression (HAMD) questionnaire, the depression level in the group of women treated with MRM was higher than patients who had undergone BCS. The survey conducted showed that 45% of patients after Modified Radical Mastectomy suffered from severe depression as long with the 10% patients who had BCS, while 5% who had MRM suffered from mild depression and 40% from BCS patients had suffered the same as well. T-Test conformed that the noticed differences was statistically significant, $p < 0.000232$ in BCS and MRM.

Conclusion: Symptoms of depression was more pronounced among women who underwent MRM compared to those who received BCS. While the surgical technique plays a significant role in psychological response, other variables such as cancer stage, type of adjuvant therapy, and personal circumstances may also influence emotional outcomes. Future research should explore these contributing factors in more depth. Psychological support must be integrated into routine breast cancer care, with tailored strategies for high-risk patients.

Keywords: Breast Cancer; MRM; BCS; Depression

Introduction

Breast cancer is the most common cancer in Saudi women. The awareness in Saudi Arabia has been increased due to screening campaign, in the meanwhile there is a magnificent progress in early detection which will increase the survival rate [1]. "There was 1473 female breast cancer cases for year 2010. Breast cancer ranked first among females accounting for 27.4% of all newly diagnosed female cancers (5,378) in year 2010. The Age Standardized Rate (ASR) was 24.9/100,000 for female population. The five regions with the highest ASR was Eastern region at 39.5/100,000, Qassim region at 32.8/100,000, Riyadh Region at 30.6/100,000, Makah Region at 24.2/100,000 and Madinah Region at 21.3/100,000. The median age at diagnosis was 49 years (Range 21-120 years)" as shown in Figure 1 [2].

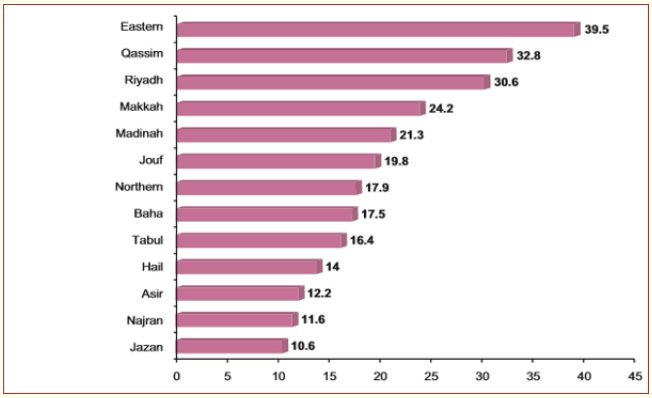

Figure 1: Age Standardized Rate (ASR) Regional Distribution of Female Breast Cancer in Saudi Arabia, 2010.

Full-grown human female's breast comprises of connective tissue, fat, ducts, and thousands of lobules consist of tiny glands which produce milk. As there am billions of microscopic cells in the body the breast has the same characteristics. These cells multiply in an orderly way; new cells am produced to replace the ones that died [3]. Uncontrolled division is a special characteristic of cancer cells that can invade other body cells. The initiation of breast cancer usually begins in the inner lining lobules or the milk ducts. A breast cancer that developed in the duct called ductal carcinoma and the one which developed in the lobules am called lobular carcinoma [3]. Stage is usually categorized as a numerical scale starts from 0 to IV, stage 0 characterized as a non-invasive cancer that stays within the primary location where as stage IV characterizing as an invasive cancer that have extend outside the breast to other parts of the body [4].

There am various types of breast cancer treatment modalities such as, surgery, chemotherapy, radiotherapy, hormone therapy, and biological therapy [5]. Surgery is generally the first step in treating early stage breast cancer. If the breast tumor is large or more advance other modalities can be used [5]. The amount of healthy tissue removed with the breast tumor surgeries vary from one type to another [6]. Axillary lymph node am commonly removed as part of the operation so they can be checked for cancer cells. There am different types of breast cancer surgery that includes conserving, partial mastectomy, simple or total mastectomy, radical mastectomy, and modified radical mastectomy [7]. The best surgery type for women with small, early stage breast cancer is conserving surgery. In breast conserving surgery, the surgeon removes a small margin of healthy tissue around the tumor, in additional, axillary incision can be done to take out any positive lymph node [8]. The goal of breast conserving surgery is to maintain as much as possible of healthy breast tissue. On the other hand, modified radical mastectomy the surgeon excise the whole breast beside the nipple and axillary lymph node, while the chest muscles am not excised [8].

The conservative surgery has been commonly utilized, and it contradicts the idea which confirmed that "we had to remove as much as I could" as a result; there have been a decline in the amount of these traumatic operations which took place with the only goal of saving lives without taking into account the patient psychological influence. The prevalent type of radiation therapy is the External beam where the radiation is focused on the treatment area. Radiation therapy treatment is usually used to treat any cancer cells that was missed behind the BCS, to lower the recurrence risk. After MRM radiation may also be recommended in patients with a cancer more than 5 cm, or when cancer is formed in the lymph nodes. If BCS was done, most often the entire breast gets radiation, and an extra boost of radiation is delivered to the tumor bed to prevent the recurrence [17].

Regardless of these technical improvements, MRM persists to be practiced, and some authors assert that there am 40% of breast cancer cases in which it is still performed. In certain situation (size or position of the tumor, anticipating a bad cosmetic result, small

breast, multifocal tumor, a women's request, etc.) MRM usually is followed by an immediate reconstructive surgery of the breast, in recent years this technique is becoming more and more trendy, attempts to conserve the breast with its natural appearance in diseased women. MRM is more traumatic than the cancer illness itself hence the need to deal in depth with this problem in order to promote a reasonable psychotherapeutic treatment for this women [9].

Coping with cancers is often long process, negatively affecting the patient's previous lifestyle and quality of life [10]. Patients with cancer am commonly believed that their fate is predictable. "Patients diagnosed with breast cancer encounter psychological problems, such as presenting sense of threat to the patient's life with resulting depression, cancer phobia, and lack of self-acceptance". Depressed mode can be noticeable in affected women and this can happen at any stage during the course of treatment, or after treatment has completed [11].

Depression is a disorder described by depressed mode, sad or feeling down, having little interest or receiving little enjoyment in doing things; and feeling hopeless [11]. These feelings often continue for about two or several weeks and negatively affect a person's daily activities or relationships. Depression symptoms am ranging from mild to severe; they may become visible shortly after diagnosis or any time during or after treatment. Severe depression, also called major depressive disorder, interferes with a person's relationships and a day-to-day activities and responsibilities. People with mild symptoms am able to carry out daily activities and there symptoms may not be recognized. It is important to know that without treatment's support most people with depression will find it difficult to change their mood or find happiness in their life [12].

Recent research shows women with breast cancer and depression am at higher risk of cancer recurrence and early death than breast cancer patients without depression [13]. Depression may make cancer patients' prognosis worse, Studies show that the higher levels of depression is associated with rapidly tumor growth. Other studies have shown that women who participate in support groups have longer survival rate if they designed to reduce emotional problems [13]. Those studies prompted researchers to wonder if elevated cortisol caused by depression disrupts the immune system and leaves the patients susceptible to both their tumors and outside infection [13]. Earlier studies, found that abnormal patterns of cortisol levels during the day expect early mortality years later in women with metastatic breast cancer [13].

Our objective is evaluation of the presence and severity of symptoms of depression in women treated for breast cancer who underwent surgical procedure using one of two methods, either Modified Radical Mastectomy (MRM) or Breast Conserving Surgery (BCS).

Materials and Methods

After getting the ethical approval from PNU, the study was conducted. I carried a retrospective study. All the data was obtained from the patients only used for research purposes. Respect the confidentiality and anonymity of the research respondents, and I ensured that participants participated in the study voluntarily, with avoiding harm to participants.

A consent form requested from the patients orally. I handed out the Hamilton Rating Scale for Depression to a random sample of 20 breast cancer female married patients during radiation therapy treatment, 17 of them finished their chemotherapy course while 3 of them was taking concurrent treatment. The sample age range from 30-60 years old.

We excluded mental retardation patients. All patients was treated at King Fahad Medical City in Riyadh within the scope of Radiation Oncology Department in the years 2015. The patients' responses was statistically analyzed by using T-test (Excel program), then I recorded their results to find out whether the depression is higher in mastectomy patients.

Results and Data Analysis

Total patients number was 20 females breast cancer with different stages ranging from I to IV. All of them was married, and the mean age within the study groups was 40± years. Half of the study subjects had undergone MRM combined with adjuvant Chest Wall Radiation Therapy with Lymphatic, while the other half had undergone BCS then after it treated with Breast Radiation Therapy with Lymphatic. 17 of them received chemotherapy and 3 of them was still taking the chemotherapy course (concurrent). The majority had Ductal Infiltrating Carcinoma, 6 of them had Lobules Infiltrating Carcinoma, and only 2 of them suffered from Ductal Situ Carcinoma as shown in Table 1.

Characteristics	Value
Total patient number:	20
Mean age:	44
Gender:	Female
Type of pathology: Ductal infiltrating carcinoma	 12
Lobules infiltrating carcinoma	6
Ductal situ carcinoma	2
Stage: I.	 7
II.	6
III.	5
IV.	2
Type of radiotherapy	
Chest wall radiation therapy + Lymphatic	10
Breast radiation therapy + lymphatic	10
Chemotherapy	
Received	
Concurrent	
Marital status	Married

Table 1: Characteristics of patients who underwent ether modified radical mastectomy (MRM) or breast conserving surgery (BCS).

T-Test confirmed that the noticed differences was statistically significant, $p < 0.000232$ in MRM and BCS. Evaluation of degree of depression and Analysis of data obtained from Hamilton rating scale for depression showed that the perceived level of depression was higher among the patients who had undergone MRM, compared to the patients after BCS. The score of HMAD in the MRM and BCS group was shown in table 2 and table 3. Patient in both groups suffered from depression, 9 out of 10 of patient in group of MRM suffered from severe depression and 1 of them was suffered from mild depression. 2 out of 10 of patient in group of BCS suffered from severe depression and 8 of them was suffered from mild depression. The HMAD score in the MRM group was significantly higher than that in BCS as shown In figure 2.

Number of Patients	MRM scores	Severity of depression
1	18	Mild
2	22	Sever
3	23	Sever
4	24	Sever
5	29	Sever
6	29	Sever
7	25	Sever
8	32	Sever
9	36	Sever
10	37	Sever
Total	275	

Table 2: Scores of HAMD in Modified Radical Mastectomy group. Significance of differences $p < 0.000232$.

Number of Patients	BCS scores	Severity of depression
1	8	Mild
2	10	Mild
3	10	Mild
4	14	Mild
5	14	Mild
6	14	Mild
7	14	Mild
8	15	Mild
9	25	Sever
10	26	Sever
Total	150	

Table 3: Scores of HAMD in Breast Conserving Surgery group. Significance of differences $p<0.000232$.

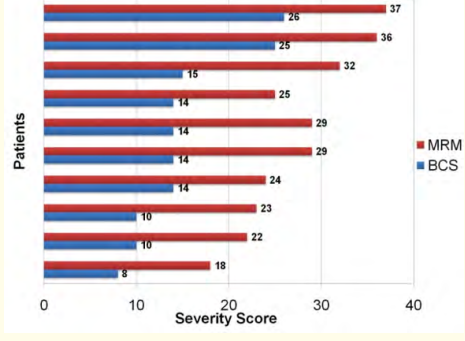

Figure 2: Compared the severity between MRM and BCS. The normal range of HAMD scale ranges from 0 to 7, and from 7 to 20 is mild, while 20 and above is considered as sever.

The survey conducted with the HAMD questionnaire showed that 45% of patients after Modified Radical Mastectomy suffered from severe depression as long with the 10% patients who had BCS, while 5% who had MRM suffered from mild depression and 40% from BCS patients had suffered the same as well.

Discussion

The present findings reinforce the psychological impact of breast cancer surgery, especially in patients who undergo MRM. However, the degree of depression may also be influenced by several additional factors including cancer stage, receipt of chemotherapy, and the patient's socioeconomic and marital status. These variables was not controlled in the current study and may have contributed to the severity of symptoms.

Furthermore, the study underscores the importance of proactive involvement by healthcare providers in addressing psychosocial distress. Oncology nurses, radiation therapists, and attending physicians must be trained to recognize early signs of depression and refer patients for timely psychological support. Integration of psychosocial care, including support groups, cognitive behavioral therapy, or pharmacologic treatment, should be considered essential in the management plan of breast cancer patients.

Psychological problems am quit common in women detected with breast cancer. Most studies and systematic review of the literature point out that patients who had done modified radical mastectomy am characterized with a higher level of depression than who had done breast conserving surgery [14].

Our studies supported that a higher level of depression happened in patients who had undergone Modified Radical Mastectomy. Evaluation of degree of depression and Analysis of data optioned from Hamilton rating scale for depression showed that the perceived level of depression was higher among the patients who had undergone modified radical mastectomy, compared to the patients after breast conserving surgery. The differences was statistically significant, $p < 0.000232$ in MRM and BCS.

A similar study by Marzena., *et al.* has compared the depression between MRM and BCS patients conducted with the HADS questionnaires and the final result was that 38.4% of patients who had MRM and 30.4% of patients who undergone BCS suffered from depression. That study conformed to my result by showing that MRM patients have more psychological problems than BCS [18].

Similar conclusion by Yung Sun and Dongwon kim, Emotional function and social function in BCS patients had better scores than MRM patients which describes the depression mood in MRM patients, Being confident is an essential rule to get rid of every negativity that can lead to depressed mood, a study found out that BCS patients had better self-esteem and body image than who had MRM. Furthermore, psychological distress is associated significantly with poor image [19].

Analysis of the research findings suggest by Minami., *et al.* depression levels in patient undergoing MRM am high, and a clear visible physical effects have been seen in MRM patients. As a woman the removal of the breast not only changes physical appearances but also affects her as a mother and wife. She must also learn how to handle her surgery with not only herself but with responses of others like her husband and children. BCS often experienced depression, anxiety, and fear about the recurrence, metastasis, and side effects of chemotherapy or radiotherapy [15].

Breast cancer women am in a strong need for acceptance, emotional support, and understanding for they am dependent on others to boost their self-worth. The misconception is one of the factor that must be consider due to patients thoughts, that the only effective surgery is Modified Radical Mastectomy and they am less educated about BCS. It is important to educate breast cancer patients about BCS it has the same prognosis as mastectomy with early stage breast cancer.

Psychological interventions must be provided by healthcare professionals such as patient physiological statues checks, educate about how to cope with her condition, provide family support, join support group to meet others with a similar experience, change her pattern of thinking and behavior, physical activity to improve their mood, and take up antidepressant drugs to treat the symptoms of depression.

The society has a physiological influence on breast cancer patients, some of them am not cooperative with cancer patients by treating them like they am going to die anyways. In radiotherapy department patients should come at least time monthly to take the treatment, I have noticed that husbands only come in the first sessions of their wives treatment that gives patients a negative impact, also some of the husbands get married of a second wife which make her feel disappointment, depressed, hurts her feeling

as a wife. With these feelings patients lose their hope in life, as long as people give up on her which lead to weakened her ability to fight cancer and recover.

As I discussed the society influence on patients physiological statues I would like to suggest some solutions. I must educate husbands how to deal with his wife's condition, discusses the reasons behind his feelings toward her, giving up on her, and how his support has significant impact on her recovery. If the problems was from her physical appearance, a reconstruction surgery can be done.

Conclusion

The symptoms of depression was dominate and more intense among women who had undergone modified radical mastectomy. Symptoms of severe depression occurred in 45% patients after MRM and 10% after BCS, symptoms of depression dominate and more sever among women who had undergone modified radical mastectomy rather than breast conserving surgery.

Study Limitations

Some limitations worth nothing that my study represent a single entre study reflecting only skills and experience of single unit. Studies with large sample sizes could be more accurately assess the generalizability of this results due to limited number of patients encountered in this study.

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