

Perception of Breast Reconstruction After Mastectomy for Cancer Experience of the General Surgery Department of the Military Hospital Avicenne in Marrakesh

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ABSTRACT

Breast cancer, and particularly its treatment by mastectomy, is a physical and psychological trauma for woman patient. It emphasizes the need for breast reconstruction (BR) surgery for its psychosocial benefits, hence the interest in evaluating the perception and satisfaction of BR in patients treated by mastectomy. The present work is a retrospective study conducted in General Surgery Department of the Military Hospital Avicenne in Marrakesh. The aim of the study is to explore the satisfaction and health status of patients who received or refused reconstruction after BC surgery using the BREAST-Q questionnaire and further, investigate the factors influencing the patients' satisfaction and health-related Quality of life.

This study enrolled 201 women who underwent Mastectomy for cancer in our department from January 2021 to December 2022. The mean age of the patients was 49.14 (\pm 10.17) years. Palpation of a nodule was the most frequent reason for discovery (89.5%). Only 51 (25.4%) of our patients had BR. The average age of this category was 44.74 (\pm 6.78) years, of which 62.7% were married and 19.6% were single. BR was proposed to all patients. The reconstruction techniques used in our study were permanent prosthesis (64.70%), expanding prosthesis (23.52%), Latissimus Dorsi flap (5.9%) and breast reduction (5.9%).

Only 25.4% accepted BR (Group 1). The main motivations were the desire to regain their femininity and feel good about themselves (100%), the wish to feel whole and to regain balance (94%), the desire to regain a normal sexual and marital life (88%), the hope to forget everything that reminds one of cancer (24%) and finally, the influence of their husband (47%).

BR was refused by 74.6% of patients (Group 2). The main reasons for refusal were age (71%), religious beliefs (26%), high cost (70%), fear of complications (24%) and fear of additional surgery (26%).

We used the BREAST-Q questionnaire as a tool to assess patient quality of life and satisfaction with BR. The evaluation modules were satisfaction with the breast, social satisfaction, sexual satisfaction, satisfaction with the surgeon, paramedical and administrative staff. With a mean score of 79.14 and extremes ranging from 40 to 100, patients who underwent BR surgery were globally satisfied psychologically, socially and sexually.

The rate of BR after mastectomy is low compared to the literature, which underlines the need to give special attention to the promotion in our country of post-mastectomy BR.

Keywords: Breast cancer, Breast reconstruction, Perception

1. INTRODUCTION

Breast cancer (BC) in Morocco is a public health scourge. Incidence rates of BC according to age show a strong increase at from 40 years old, in accordance with trends incidence of BC observed in other African countries [1]. Age average for the diagnosis of BC in Morocco was 49.5 years [2].

The first and primary curative modality to treat the breast remains surgery. Among the disadvantages of mastectomy, are the loss of femininity and the reduction of self-confidence [3], particularly for Moroccan women who consider physical aspect as a big part of their global wellbeing. Breast reconstruction (BR) helps reduce most of psychosocial issues of mastectomy [4].

The number of patients who benefited from BR has increased worldwide over the last decade, but remains relatively low, ranging from 5% to 42% [5].

The surgical community presumes that the low percentage of reconstruction is probably related to women's cultural and social perception of BR.

We wanted to know if that perception was correct and also to know the extent of awareness of the possibility of BR in a developing country like Morocco, especially in our facility.

The BREAST-Q is a patient-reported outcome tool that can be used to quantify the impact and effectiveness of breast surgery, including a questionnaire specific to reconstruction [6]. The value of the BREAST-Q in measuring patients' satisfaction and health-related Quality of life after oncoplastic surgeries was also supported by a meta-analysis [7].

The aim of our study is to explore the satisfaction and health status of patients who received or refused reconstruction after BC surgery using the BREAST-Q questionnaire and further investigate the factors influencing the patients' satisfaction and health-related Quality of life. Our results could lead to a better management of women with BC.

2. SUBJECTS AND METHODS

Study design and participants

This cross-sectional study enrolled 201 patients who underwent Mastectomy for BC between January 2021 and December 2022 at General Surgery Department of Avicenne Military Hospital of Marrakesh, Morocco.

Written informed consent was obtained from all participants.

The inclusion criteria were female patients diagnosed with primary BC and received surgery in our department, volunteered to participate in this study and

complete the questionnaire survey. The exclusion criteria were patients who underwent tumorectomy or conservative surgery or incomplete baseline clinical data or follow-up.

Questionnaire

The questionnaire was self-designed by the investigators after reviewing relevant studies and the medical records of patients. The questionnaire collected demographic characteristics and disease-related information. The demographic characteristics included age of disease onset, place of residence, marital status, Menopausal status, Parity and the use of hormonal contraception. The disease related information included other underlying diseases, radiotherapy, chemotherapy and surgical mode. The BC-related clinical information was collected by reviewing the medical records of the patients to guarantee the accuracy of the data.

BREAST-Q scale

The BREAST-Q is a validated patient-reported scale that assesses the quality of life and satisfaction degree of patients after BR surgery [8].

The satisfaction degree part includes the satisfaction degrees regarding the BR, satisfaction regarding the results, and satisfaction regarding quality of care and medical team. The health-related quality of life part includes social psychological health, physical well-being and sexual health. The scoring system of BREAST-Q ranges from 0 to 100 points according to the performances of patients in different dimensions, and higher scores indicate higher health-related quality of life or satisfaction degree.

Statistical analysis

Data were checked for completeness. Descriptive statistics were used to present the data in tables and charts. Patients who benefited from BR (group 1) and those who did not benefit from BR (group 2) were compared for all the studied variables. The studied variables were compared in cross-tabulations. The analysis was performed with a 95% confidence interval using the Software Statistical Package for Social Science, version 24.0 (IBM, Armonk, N.Y.).

3. RESULTS

Our study included 201 patients with an overall 87% response rate. The mean age of the patients was 49.14 (± 10.17) years. Further, 82 (40.8%) patients were urban living, the marital status found that 141 (70.1%) patients were married, 91 (45.3%) patients were multiparous, 153 (76.1%) patients used to take hormonal contraception, and 72 (35.8%) patients had a history of a chronic illness. Table 1 shows sociodemographic characteristics for each patient group. Among all the patients, 51 (25.4%) patients benefited from BR. The mean age difference between group 1 and group 2 (44.74 ± 6.78 versus 52.87 ± 9.34) was statistically significant ($P < 0.001$). Most of those in group 1 were premenopausal (68.6%), whereas, in group 2, most of the women were postmenopausal (54%, $P < 0.001$). There were statistically significant differences observed in place of residence ($P = 0.001$) and parity status ($P = 0.033$) between the two groups, as presented in Table 1. The frequency of chronic diseases was similar (35.3% versus 36%) between the two groups ($P = 0.001$) (Table 1). The most prevalent chronic disease among all the patients was high blood pressure and diabetes respectively (47% and 30%).

The patients mostly discovered their disease by self-palpation of their breast (89.5%). BC developed more in the left side (59.7%) and in the upper-outer quadrant (68.6%). The frequency and percentage of the different received treatment for both groups are presented in Table 2. The types of BR for group 2 are also presented in Table 2, showing that the permanent prosthesis was placed in 33 patients (64.7%).

BR was proposed to all our patients. Only 51 (25.4%) patients had agreed to benefit from BR.

Reasons motivating acceptance of BR are indicated in Figure 1. Refund their femininity, feel good about themselves and feel whole and balanced were the most significant reasons in group 1.

Nevertheless, number of patients who refuses BR surgery was higher (150/201 i.e. 74.6%). The reasons motivating their refusal, represented in Figure 2, was, in addition to age and menopause, the high cost of breast prosthesis, which is not refundable by insurance and religious beliefs. Fear of another surgery and its complications was other reasons to avoid BR surgery.

Patient reported outcomes are shown in Table 3. Breast Q score showed that patients felt globally well psychically, physically and sexually and were satisfied with their breast's esthetic results. They were almost satisfied from information we provided, from their medical, paramedical and administrative staff.

4. DISCUSSION

BC represents 24.5% incidence and 30.3% prevalence of all female cancers worldwide. 2.2 million new cases of BC were recorded in 2020, according to the World Health Organization (WHO), making it the most common cancer in the world.

In Morocco, BC constitutes a real public health problem due to its very high incidence. Thus, the Ministry of Health and Social Protection is encouraging to launch the national awareness and screening campaign for breast and cervical cancer, under the slogan: “Early detection is a prevention and for your health, a protection”.

The breast, at the same time symbol of femininity, maternity and sexuality, its damage is an upheaval of the patient's life. From diagnosis to treatment, particularly mastectomy, BC constitutes both physical and psychological trauma and harm to the bodily integrity and feminine identity of the patient. All this, underlines the importance of BR and its psychological impact, and therefore the interest in evaluating the perception of BR in patients treated by mastectomy.

According to Miaja and al. The diagnosis of BC constitutes a disruptive element, which interferes with life plans. According to their study, they suggest that women with BC experience it differently, depending on their age at the time of diagnosis. Young women (under 40 at the time of diagnosis) have concerns about their professional career, family role, relationship with their partner, alienation from healthy peers, and changing body image. In addition, they tend to perceive cancer as much more aggressive than their older counterparts [9].

Avis and al. reported that loss of a daily routine, sexual problems, and body image dissatisfaction are the most important factors that negatively affect the quality of life of women under 50 years of age [10].

Similar results were noted by Champion and al., comparing young women who survived BC to older survivors. Younger women had greater symptoms of depression and anxiety in response to the illness, increased fatigue and greater fear of recurrence. Lower performance in terms of interpersonal relationships. Anxiety over marital dissatisfaction and a distorted perception of body image are also important factors affecting the quality of life of younger patients [11].

The announcement of the mastectomy refreshes the trauma of the announcement of BC. And even though mastectomy can save lives, accepting it is never an easy choice to make. Beyond the operation and the risks, it raises questions about self-image, femininity, and even sex life.

Body image, femininity, and sexuality are the factors most negatively impacted by mastectomy according to Frost and al. [12]. Another multicenter study concluded that women who underwent mastectomy alone were more likely to suffer psychological distress, anxiety and depression compared to those who had undergone immediate or delayed BR [13].

A Canadian study analyzed 190 patients who underwent a mastectomy alone, a mastectomy with immediate and delayed reconstruction in two university hospitals. This study invited the patients to complete a questionnaire before the surgical procedure, then one year later. Women who underwent delayed reconstruction had the worst functioning scores, but after one year of follow-up, there were no differences between the three groups in terms of functioning scores (cognitive, emotional and social functioning). This highlights the need for psychosocial support after the announcement of the diagnosis of BC, even in the event of immediate BR [14].

A study in southwest Nigeria conducted by Olasehinde and Al highlights the psychosocial challenges faced by young women (<45 years) who underwent mastectomy for BC. The decision to have a mastectomy was a stressor for most of the women in this study, some even thought they were facing the

choice of death. The change in body image is also an identified theme, in fact the removal of the breast had an impact on the perception of femininity among all the patients in the study. One of them categorically refused to see herself in the mirror, while another declared that she had lost a symbol of her femininity and wondered if without this emblem of feminine beauty, she had not become more masculine [15].

Measuring quality of life requires that we have tools that are both subjective and multidimensional. Self-questionnaires are therefore used, comprising questions grouped into several dimensions (= items), covering the four main components of the state of health. Items and in the different groups of patients have a psychometric link allowing their comparison.

The response to each item is translated into numerical data entered into a dedicated Excel spreadsheet, then it is translated into numerical scores of 0 and 100. A higher score reflects better satisfaction and well-being. Each domain is translated into an independent score, however, there is no overall score. The BREAST-Q questionnaire can thus be used in its entirety or split depending on the objectives of the study [16].

The benefits of reconstruction are major, both physical, psychological and functional, and mean that oncological surgery is currently an integral part of the treatment of BC [17]. Furtunato believes that immediate BR had a positive impact on cognitive, emotional, and social functions in all young patients. However, for patients older than 60 years old, this positive impact diminishes with age in whom emotional function is only improved in 12% of cases. And social functions are improved by psychological support. At the end of his study, Furtunato declared that 80% of patients who had immediate reconstruction were satisfied and did not regret their decision. On the other hand, 1/5 regret not having chosen immediate reconstruction, 40% of whom have reconsidered their initial choice and would like to have recourse to deferred BR [13].

El Tahir et al. highlighted the superior contribution of BR to the psychology of women compared to additional surgical complications and its high cost [18].

Hart and al. study on the psychosexual impact of post-mastectomy BR involved a survey evaluation of the sexual health of women having benefited from BR after mastectomy and noted the role of breast in self-confidence and femininity, the role of feeling attractive, the role of intimate relationships and satisfaction with sex life. 49.5% of patients were overall satisfied with their sex life. And affirmed that the reconstruction improved their marital relations [19].

Lamore and Al., conducted a study on the impact and satisfaction of BR among women in couples, comparing two groups of patients: those who participated alone in the study and those with their partner [20]. It turned out that patients whose spouse was present, understanding, sporty and involved in the treatment process felt less negative emotions, and reported fewer sexual difficulties and better marital relations. In addition, quality of life and aesthetic satisfaction were significantly higher in this group of patients [19].

5. CONCLUSION

In recent years, we have seen real progress in the treatment of BC, improving the prognosis of this disease, which is manifested by an increase in patient survival. Treatments are increasingly individualized and adapted to each type of cancer and each patient and tend towards therapeutic de-escalation. Added to this progress is the rise of oncological surgery, which has reduced the psychological, social and sexual impact of BC and mastectomy on women. Indeed, BR seems to have a positive effect on psychological, emotional

and social functioning. And provides patients with an aesthetic result, well-being (psychological, social, and sexual), balance and a better self-image. However, in our context, the rate of post-mastectomy BR remains low, due to our religious beliefs and our socio-cultural environment, the high cost and the lack of information for patients. All this imposes the need to give particular attention to the reconstructive surgery, its psychological and aesthetic benefits of which far outweigh its complications and its cost.

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7. Conflict of Interest

All the authors declare that they have no conflict of interest.

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Table 1: Sociodemographic characteristics of all patients

Characteristics	All Patients N=201 (%)	Group 1 (Patients benefited from BR) (n = 51), N (%)	Group 2 (Patients didn't benefit from BR) (n = 150), N (%)	P
Age, y (mean ± SD)	49.14 ± 10.17	44.74 ± 6.78	52.87 ± 9.34	<0.001
Place of residence				
- Urban	82 (40.8)	22 (43.1)	60 (40)	0.001
- Peripheral	68 (33.8)	18 (35.3)	50 (33.3)	
- Rural	51 (25.4)	11 (21.6)	40 (26.7)	
Marital status				0.025

- Single	18 (9)	10 (19.6)	8 (5.3)	
- Married	141 (70.1)	32 (62.7)	109 (72.7)	
- Divorced	6 (3)	3 (5.9)	3 (2)	
- Widowed	36 (17.9)	6 (11.8)	30 (20)	
Menopausal status				
- Premenopausal	104 (51.8)	35 (68.6)	69 (46)	<0.001
- Postmenopausal	97 (48.2)	16 (31.4)	81 (54)	
Parity				
- Nulliparous = 0	56 (27.9)	15 (29.4)	41 (27.3)	0.033
- Pauciparous ≤2	54 (26.9)	12 (23.5)	42 (28)	
- Multiparous >2	91 (45.3)	24 (47.1)	67 (44.7)	
Use of hormonal contraception				
- Yes	153 (76.1)	39 (76.5)	114 (76)	0.025
- No	48 (23.9)	12 (23.5)	36 (24)	
History of any chronic illness				
◦ No	129 (64.2)	33 (64.7)	96 (64)	0.001
◦ Yes	72 (35.8)	18 (35.3)	54 (36)	

Table 2: BR-related variables of all patients

	All Patients N=201 (%)	Group 1 (Patients benefited from BR) (n = 51), N (%)	Group 2 (Patients didn't benefit from BR) (n = 150), N (%)	P
BC discovery circumstances				<0.001
- Self palpation	180 (89.5)	42 (82.3)	138 (92)	
- Screening	9 (4.5)	3 (5.9)	6 (4)	
- Functional signs	12 (6)	6 (11.8)	6 (4)	
Laterality				<0.001
- Left breast	120 (59.7)	30 (58.8)	90 (60)	
- Right breast	72 (35.8)	18 (35.3)	54 (36)	
- Bilateral	9 (4.5)	3 (5.9)	6 (4)	
Nodule location				0.032
- UOQ	138 (68.6)	34 (66.7)	104 (69.3)	
- UIQ	21 (10.4)	5 (9.8)	16 (10.7)	
- LOQ	18 (8.9)	3 (5.9)	15 (10)	
- Not palpable	15 (7.5)	7 (13.7)	8 (16)	

- Retro Areolar	9 (4.4)	2 (3.9)	7 (4.7)	
Treatment received				<0.001
- Chemotherapy	96 (47.8)	24 (47)	72 (48)	
- Radiation	66 (32.8)	17 (33.3)	49 (32.7)	
- Surgery (curative)	201 (100)	51 (100)	150 (100)	
- Hormonal therapy	81 (40.3)	41 (80.4)	40 (26.7)	
Types of breast reconstruction				
- Permanent prosthesis		33 (64.7)		
- Expanding prosthesis		12 (23.5)		
- Latissimus Dorsi Flap		3 (5.9)		
- Breast reduction		3 (5.9)		

Table 3: Post-operative Q score analysis n=51

Question	Mean	Range (Min-Max)
Physical well-being	80 ± 14	54-100
Sexual well-being	66 ± 20	47-100
Satisfaction with nipples	78 ± 19	56-100
Satisfaction with information Surgeon	75 ± 18	45-100
Medical staff	85 ± 21	40-100
Office staff	87 ± 17	55-100
	83 ± 12	62-100

Figure 1: Distribution of reasons motivating the acceptance of BR surgery according to their frequency

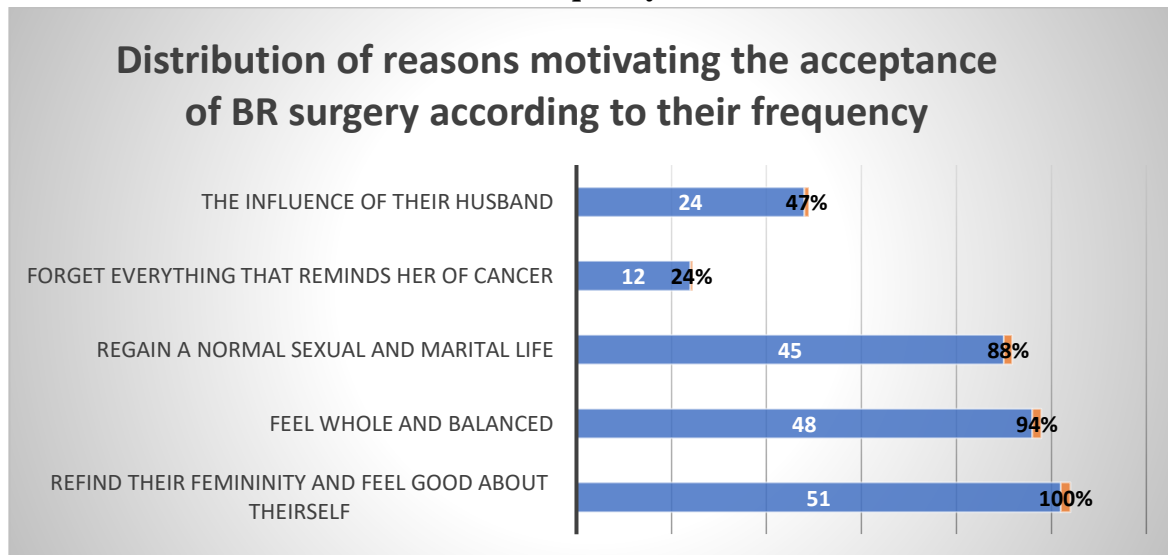


Figure 2: Distribution of reasons motivating the refusal of BR surgery according to their frequency

