Psychosocial effect of mastectomy versus conservative surgery in patients with early breast cancer

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Purpose. **To compare the quality-of-life (QoL) and psycho-social changes in a group of patients with early breast cancer who underwent conservative surgery (BCS) or modified radical mastectomy (MRM).**
Methods. **Self-administered questionnaire assessing body image perception, social habits, sexual attraction and self-consciousness with relatives/friends, was randomly assigned to 125 patients (61 BCS, 64 MRM; aged 53 ± 8 and 50 ± 9 years, respectively, p=NS).**
Results. **MRM patients reported a significantly higher frequency of changes in body image perception and other related social behaviour such as avoiding going to the beach or using low-cut clothes, and reticence with friends. Conversely, no differences were found regarding sexuality, denial of the disease by the husband/partner, or concealing the disease from family members. Also, no significant differences were found between patients above and below the age of 50 years, for all variables studied after adjustment for surgical procedure.**
Conclusions. **Modified radical mastectomy has a negative effect on body image perception and in social behaviour patterns of patients and with a concomitant decrease in QoL. The sexuality of the patient is not significantly affected.**

Key words: quality of life, body image perception, mastectomy, conservative surgery.

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INTRODUCTION

The diagnosis of breast cancer has a major psychosocial impact in women. It is recognised that the mutilation caused by the surgery will affect the patient's self-esteem, body image, attractiveness and femininity and also her sexual and social behaviours[1-5]. Several authors have shown that breast conserving surgery has lower psychological sequelae than radical mastectomy[1,2,6,7]; still, in Portugal, women with breast cancer are seldom given the choice of the surgical procedure, and, to our knowledge, the psychological impact of the latter has never been assessed. Hence, we conducted a study to compare the effect of breast conservative surgery (BCS) and of modified radical mastectomy (MRM) on the quality of life of patients with early breast cancer.

PATIENTS AND METHODS

Patients

One hundred and twenty-five patients submitted to breast conservative treatment or modified radical mastectomy were randomly drawn from a group of 711 breast cancer patients admitted to the Radiotherapy Department of the Hospital de Santa Maria for adjuvant radiotherapy. All patients had no evidence of local or distant disease and undergone radiation therapy to the remaining breast or to the chest wall, to a total dose varying between 46 and 50 Gy. Patients who underwent conservative surgery received a boost in the tumour bed that ranged from 10 to 20 Gy according to the surgical margins status and/or the presence of an extensive intraductal component. The irradiation of the regional nodes was carried out just for patients who presented four or more positive axillary nodes. Systemic chemotherapy was conducted in all patients with positive axillary nodes and/or presenting with other risk factors. All patients with positive hormonal receptors also underwent hormonotherapy.

Questionnaire

A self-administered questionnaire with eight questions on four main areas of quality of life was develo-

TABLE 1. **Psychosocial aspects according to conservative surgery (BCS) or modified radical mastectomy (MRM). Results are expressed in number of patients and (%). Analysis by chi-square**

	*BCS (n=61)	†MRM (n=64)	p
Changes in body image			
Body dissatisfaction	10 (16.4)	38 (59.4)	<0.001
Refuses the image in the mirror	5 (8.2)	21 (32.7)	<0.001
Changes in social behaviour			
Does not go to the beach	10 (16.4)	34 (53.1)	<0.001
Does not use cut off clothes	3 (4.9)	29 (45.3)	<0.001
Changes in sexuality			
Sexual dysfunction	14 (23.3)	7 (10.9)	0.07
Denial of the disease by partner	6 (10.2)	5 (7.8)	0.65
Hides the disease			
From family members	2 (3.3)	6 (9.4)	0.16
From friends	8 (13.1)	19 (29.7)	0.02

*BCS: breast conservative surgery; †RMM: radical modified mastectomy.

ped to evaluate the psychosocial impact of the two surgical techniques (BCS and MRM). The first part of the questionnaire included two questions assessing body image, namely body dissatisfaction and fear of facing oneself in the mirror. The second part of the questionnaire evaluated changes in social behaviours such as fear of exposing oneself on the beach, and of using certain type of clothes that can expose the mutilation. The third part assessed changes in sexual attraction and evaluated the acceptance of the disease by the husband/partner. Finally, the last part of the questionnaire assessed if the patient hid her disease from relatives and friends.

The survey was conducted during the follow-up consultations, six months after radiotherapy. All patients agreed to fill out the questionnaire; however, some of them requested help for its completion due to low educational level. Also, some patients had difficulty in answering or even refused to answer the questions related to sexual attraction.

Statistical analysis

Statistical analysis was conducted using SPSS v.11.5 (SPSS Inc, USA). Results are expressed number of patients and (percentage) or as mean ± SD. Comparisons were performed using chi-square or Mantel-Haenszel test for qualitative data or Student's t-test for quantitative data. Statistical significance was established for $p < 0.05$.

RESULTS

Clinical characteristics

One hundred and twenty-five patients were assessed: 61 with breast conservative treatment (BCS) and 64 with modified radical mastectomy (MRM). Mean age was 53 ± 8 years for BCS and 50 ± 9 years for MRM ($p=0.10$). Also, no significant differences were found between the two groups of patients regarding the frequency of scar tissue, seroma or infection (not shown).

Effect of procedure

The psychosocial effect of the procedures (BCS and MRM) are summarized in table 1. MRM patients reported a significantly higher frequency of changes in body image and related social behaviours, namely avoiding going to the beach or using cut off clothes, and also hiding the disease from friends. Conversely, no differences were found regarding sexuality, denial of the disease by the husband/partner, or hiding the disease from family members (table 1).

Effect of age

Since age has been shown to be predictive of psychosocial distress among patients with breast cancer, its effects were studied for patients aged ≤ 50 or >50 years after adjusting for surgical procedure, and no significant differences were found for all variables studied (not shown).

DISCUSSION

Modified radical mastectomy, as it was conceived by Halsted in 1895, was an important event in the history of the treatment of the breast cancer. For many years no other procedure obtained identical results and the patients had to accept the mutilation with all its adverse effects. Fortunately, the development of radiotherapy allowed the practice of less aggressive surgical procedures, whose good results at local level were confirmed in different prospective studies[8-12].

In the recent years, much attention has been drawn to the psychological morbidity of MRM in breast cancer patients. Research comparing mastectomy and breast

conservative treatment, revealed improved outcomes for women who had undergone conservative surgery[1,7]. In a meta-analitic review from 1980 to 1995 on 40 studies addressing the psychosocial outcomes of BCS versus MRM[13] a significant advantage for BCS was observed. Indeed, according to other authors[14-17], this extensive and mutilating surgery causes a considerable burden on sexual function, self-image and social behaviours within patients, the more serious impact being on body image and self-esteem. Also, the intensity of postmastectomy psychological and social sequelae is dependent on the woman's character structure and on her acceptance of the injury caused by surgery.

Body image and social behaviour

In this study, patients that underwent mastectomy expressed a significant psychosocial impact on body image, namely a greater dissatisfaction with their body, refusing their image in the mirror, avoiding going to the beach and also using cut off clothes (all $p<0.001$).

However, according to some authors[18,19] the impact of breast cancer surgery varies greatly among women. There are some evidence suggesting that women who consider body image to be a major part of their sense of self-worth may be at an increased risk of poor psychosocial adjustment following mastectomy[20]. Still, some of our patients submitted to MRM stated that the trauma caused by the physical aggression was outweighed by the fear of death by cancer, in agreement with previously published studies[15,21,22]. Finally, although 90% of the patients were willing to benefit from breast reconstruction, only four patients with MRM were submitted to this procedure; unfortunately, in this hospital, it was impossible to offer reconstruction surgery to all patients. Thus, it is probable that the lower body image reported by MRM patients in this study could have been significantly reduced if breast reconstruction were proposed[1].

Sexuality

According to our data, no significant differences were found between BCS and MRM patients regarding prevalence of sexual dysfunction after surgery, although patients submitted to BCS tended to report this condition more frequently ($p<0.07$). Thus, our findings do not confirm previous data from the literature[4,7,22-26], highlighting the importance of body integrity in women's sexuality[27-29]. A possible explanation is the fact that some patients refused to answer the questions regarding sexuality, but this happened in the two groups. Another limitation of the current study is that sexual history prior to breast cancer diagnosis or surgery wasn't assessed, and it has been shown that poor sexual functioning prior to diagnosis can be further aggravated by breast cancer surgery[30].

Several authors have shown that breast cancer surgery leads to a decrease or even the loss of sexual desire, this change being more pronounced among women submitted to MRM than in women submitted to BCS[1,7,31]. Mastectomy can also negatively impact the partner's sexual patterns, with major effects in the couple's relationship[32,33]; conversely, other studies failed to find any significant difference in marital relationship between the two surgical procedures[21,23,33]. In this study, no differences were found between MRM and BCS regarding the relationships with the partner.

Hiding the disease

In the current study, no differences were found between surgical procedures regarding the frequency of hiding the disease from family members ($p=0.16$), whereas women submitted to MRM reported more frequently hiding their status from friends ($p=0.02$). Indeed, the psychological distress of having cancer can change social relationships; however, those changes vary greatly among women. Some of our women were concerned about their financial situation, lost income owing to missed work time or to a missed promotion due to their disease. Other women were sorry for their friends and families not fully understand their grief and anxiety. Still, other women were able to cope with the disease in order to overcome the adverse effects of the treatment. Indeed, in our daily practice we had the opportunity to deal with different situations and strikingly, most of the women, beyond their clinical condition, asked for group support and to know other patients in order to share their experience.

Effect of age

Several authors have shown that women aged less than 50 have reduced coping strategies and show more evident signs of depression and anxiety when faced with cancer diagnosis[17,19]. Additionally, one study[13] suggested that younger women are more likely to choose BCS rather than MRM, indicating that body image and sexuality are important factors for the choice of the surgical technique[34,35]. Conversely, other authors suggested that the loss of a breast affects more seriously middle-aged women[15]; indeed, the fifth decade of life is a critical period for women, with decreasing oestrogen levels, larger need of improved physical appearance, changes in professional activity as well as in social and family relationships. It is the phase of the woman's so-called "psychosocial reorganization" that makes her more vulnerable to physical and mental aggression[15]. In this study, no relationship was found between age and psychosocial outcome in the two

groups of patients, suggesting that the quality of life was not affected by age. Possible explanations include differences in quality of life assessment methods and in the collaboration of patients according to age; for instance, cultural constraints might preclude older women to express their sexual dysfunction and psychological distress relative to younger ones[36]. Another possible explanation is the relatively small sample size (circa 60 patients in each group), which led to a reduced statistical power; not withstanding, further studies are needed to better assess the impact of age on psychosocial distress after BCS or MRM.

Finally, according to our clinical experience, there is no general specific behaviour, each patient reacting individually to the disease and treatment. Some women are culturally predisposed to accept the mutilation, being consequently better prepared regarding their cognitive and emotional status. Still, it is paramount to take into account the psychological integrity of the patients.

In summary, our data indicate that, compared to breast conserving therapy, modified radical mastectomy has a negative effect in body image and in the social habits of patients, with a concomitant decrease in quality of life. Conversely, the sexuality of the patients is not significantly affected.

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