Effectiveness of Plastic Breast-Conserving Surgery in the Treatment of Early Breast Cancer

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Abstract: Objective: To observe and compare the effects of different surgical procedures in the treatment of early breast cancer. Methods: Seventy patients admitted from 2020.7 to 2022.4 were selected as the study sample and divided into control and trial groups, 35 patients each received conventional and reconstructive breast-conserving treatment, respectively, to compare the treatment of patients between groups. Results: The excellent rate of breast repair in the trial group was 91.42% compared with 71.43% in the control group, with a significant difference ($P < 0.05$); the indicators of intraoperative blood loss and hospital stay were better in the trial group than in the control group, with significant differences between the groups ($P < 0.05$). Conclusion: Early breast cancer patients treated with plastic breast-conserving surgery not only have better results in breast repair, but also achieve early discharge from hospital, which is worth promoting.

Keywords: Early-Stage Breast Cancer; Plastic Breast-Conserving Surgery; Restorative Effect

Introduction

For patients with early stage breast cancer, clinicians usually recommend surgical removal of the tumour lesion to control the disease and optimise the prognosis. As the breast is the second female sex symbol and the pride of women, many breast cancer patients are very concerned about the aesthetics of their breasts and therefore have higher requirements for excisional surgery. Conventional breast-conserving surgery is a simple procedure and allows for the complete removal of the tumour, but usually does not meet the aesthetic needs of the patient [1]. Plastic breast-conserving surgery is a minimally invasive technique that allows for the transfer of rearranged breast tissue and the replacement of surrounding non-breast tissue, with a wider margin of incision and a more desirable aesthetic outcome while allowing for a guaranteed tumour treatment. In this paper, 70 patients were included and grouped together to compare conventional and reconstructive breast-conserving treatment, and are reported and analysed below.

1. Information and methods

1.1 General information

Seventy cases of early breast cancer patients were used as the subjects of this study, with a consultation time range of 2020.7 to 2022.4. Breast criteria: ① breast cancer met the diagnostic criteria and was confirmed by examination; ② all were female; ③ indications for surgical excision; ④ consent to review the case data. Those with concomitant other oncological diseases, contraindications to anaesthesia, and abnormal coagulation function were excluded. The above selected individuals were divided equally into 2 groups of 35 cases each, and the status of each group was as follows.

Control group: age ranged from 33 to 56 years old, mean (41.29±9.25) years old; tumour size ranged from 2.3 to 3.0 ㎝, mean (2.39±0.23)㎝; TNM stage: 8, 10 and 17 cases in T1 stage, T2 stage and T3 stage respectively.

Test group: age 31-59 years old, median age (42.07±9.33) years old; tumour size range 2.2-3.3 ㎝, average (2.44±0.28) ㎝; TNM stage: T1 stage, T2 stage and T3 stage in order of 9, 11 and 15 cases.

The above basic data of the two groups of patients were compared (P＞0.05) and were comparable.

1.2 Methods

(1) Test group: plastic breast-conserving surgery. Routine imaging and pathological examination was performed before surgery to clarify the anatomical location of the lesion. If the lesion was in the nipple plane, a curved incision of appropriate length was made at the lesion; if the lesion was below the nipple plane, a radial incision was made. The tumour and the surrounding tissue within 1.0 to 1.5 cm are removed and the lymph nodes are carefully cleared. After excision of the tumour, the nipple-areola complex is transferred to a central location by shaping and suturing the gland and etc. Some of the distant or surrounding normal tissues are transferred through flap transfer repair to replace the defective breast tissue.

(2) Control group: conventional breast-conserving surgery. Pre-operative examination and selection of suitable incision were carried out in the same way as in the experimental group. After determining the anatomical location of the lesion, the tumour and the surrounding tissues within 1.0~1.5 ㎝ were removed and the lymph nodes were cleared, and no surgical cavity suturing was performed after the operation.

1.3 Observation index

Breast repair was assessed in terms of surgical incision scar, skin colour, skin touch, surface flatness, symmetry and shape of both breasts, and transverse (longitudinal) nipple displacement. The corresponding score ranges for excellent, good, fair and poor were >30, 26~30, 21~25 and ≤20 points in that order. Excellent rate = (number of excellent + number of good) / total number of cases in the group x 100%. Intraoperative blood loss, operative time and length of stay were recorded for each group.

1.4 Statistical processing

SPSS26.0 software was used to process the data. The mean age and surgery-related indexes were expressed as t-test; the excellent rate was expressed as rate % and calculated by X^2. Difference detection criteria: P < 0.05.

2. Results

2.1 Breast repair situation

The excellent breast repair rate in the trial group vs. the control group was 91.42% vs. 7.43%, which was higher in the trial group, suggesting better repair results in this group (P < 0.05), Table 1.

Table 1 Comparison of the status of breast repair in the two groups[n，(%)]

Group（n）	Excellent	Good	Fair	difference	Excellent rate
Test group（35）	24	8	2	1	32（91.42）
Control group（35）	15	10	6	4	25（71.43）

2.2 Surgical-related indicators

The test group had less intraoperative blood loss than the control group compared to a shorter hospital stay and longer surgical operation time than the control group, all data differences reached a significance level (P < 0.05). Table 2.

Table 2 Comparison of surgery-related indicators between groups of patients $(\bar{x} \pm s)$

Group（n）	Intraoperative blood loss（ml）	Surgery time（min）	Length of stay in hospital（d）
Test group（35）	97.14±10.62	126.24±15.24	9.41±1.36
Control group（35）	120.34±10.62	104.62±14.26	15.27±2.07

3. Discussion

Breast cancer is a common clinical condition in breast surgery, and in recent years there has been a trend towards a younger age group of patients attending the clinic [2]. In the early stage, many patients do not show many specific manifestations, which may manifest as breast lumps, nipple overflow, etc., and are usually detected during physical examination. In the late stage, the disease may cause lesions in multiple organs and organs due to distant metastasis of some cancer cells, posing a serious threat to life safety.

In recent years, people's income level has generally increased, their spiritual needs have grown and their aesthetic level has improved. Therefore, it is very important to choose the appropriate surgical method for treatment. Conventional breast-conserving surgery is simple, safe and can reduce the risk of distant metastases, but many patients are prone to recurrence and imperfect recovery of the breast shape, which can cause a great deal of mental burden for women. In the context of the widespread implementation of minimally invasive concepts, reconstructive mammaplasty has emerged as a procedure that can rearrange the residual cavity and thus effectively deal with special conditions such as large breast volumes, significant local breast sagging and large tumours, resulting in a greater guarantee of disease treatment and postoperative safety, as well as maintaining the symmetry of the right and left breast and the initial external shape of the breast [3]. In this study, it was found that the excellent rate of breast repair in the trial group was 91.42%, which was significantly higher than that of the control group (67.43%), suggesting that the patients in the trial group had better repair treatment results. The intraoperative blood loss, operative time and hospital stay were (97.14±10.62) ml, (126.24±15.24) min and (9.41±1.36) d respectively in the trial group, compared to (120.34±10.62) ml, (104.62±14.26) min and (15.27±2.07) min in the control group, with significant differences. Plastic breast-conserving surgery is a minimally invasive technique, which is more delicate and therefore takes longer intraoperative time, and because it is less invasive, it reduces bleeding, promotes early recovery of all body functions after surgery and shortens hospital stay.

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