

# **The application of Clinical tumor with plastic and conserving surgery in surgical treatment of breast cancer**

## **Abstract**

### **Objective**

Tumor surgeons now pay special attention to the alteration in breast form following breast-conserving (sometimes called breast-conserving) surgery. Safety of breast-conserving margins and postoperative breast appearance are typically challenging in conventional breast-conserving surgery due to the effect of variables such as big breast tumors or unusual placements. It's important to remember that postoperative breast deformity is a real possibility. Breast-conserving tumor plastic surgery combines tumor excision with plastic surgery, allowing for a more thorough removal of the tumor. It provides a more humane treatment option for the majority of patients by ensuring the safety of surgical margins, considering the aesthetic effect, increasing the breast-conserving opportunities for patients with tumors in special parts, and expanding the indications for breast-conserving surgery. It also greatly improves the postoperative quality of life and mental state. In this article, we deeply examine the current state of knowledge concerning the effectiveness, safety, and appropriate patient population for breast-conserving surgery in the context of tumor plastic surgery.

**Key words:** General surgery; Plastic surgery; Breast neoplasms;

### **Introduction**

As technology for diagnosing and treating breast cancer in its entirety improves, the focus in breast cancer surgery and treatment has been shifting from maximally tolerated therapy to minimally effective therapy. The combination of breast-conserving surgery and postoperative radiation therapy has evolved into a standard treatment for breast cancer. Traditional chemotherapy is one of the mainstays of adenocarcinoma treatment. Recent advances in the detection and treatment of breast cancer have led to increased survival rates. Development has expanded the use of breast-conserving surgery beyond its initial therapeutic advantages, allowing

it to improve postoperative quality of life, breast aesthetics, and patient satisfaction. Explanation of the meaning, and other purposes. Consequently, a new field, tumor plastic surgery, was developed by combining conventional tumor surgery with plastic surgery techniques. The evolution of tumor plastic surgery also provides an alternative approach to breast cancer surgery. Surgical preservation of the breast. Under the premise of assuring the therapeutic impact, considering the aesthetic effect, and providing patients with more compassionate care, this method retains the breast's form and symmetry to the maximum degree feasible. The standard of living after surgery has been raised to this new technique. The use of breast-conserving surgery in the surgical management of breast cancer is discussed, with the author taking care of the tumor.

### **1. Background of breast-conserving surgery for tumor plastic surgery**

Breast surgeons frequently perform breast-conserving surgery at the request of their patients. Although preoperatively accurate appraisal and exact operation during surgery help, the cosmetic impact following conventional breast-conserving surgery is unsatisfactory because of the trade-off between tumour removal and aesthetics. The quantity of breast gland removal and tumour position [2] fundamentally constrain the practical use of breast-conserving surgery, yet patient satisfaction is nevertheless as high as 40%. Breast-conserving surgery for tumour plastic surgery is not directly suturing the unfinished glands, it is not pure breast reconstruction, and its most evident benefit comes in more extensive mammary gland removal than is possible in regular breast-conserving surgery. Achieving positive aesthetic outcomes while maintaining negative margins is possible [3]. For individuals with little breast volume, the standard procedure for breast conserving surgery involves removing the glandular tissue and leaving the breast tissue intact. Obtaining a resection of more than 20% of the breast is challenging, and even 15% in some patients is considered ideal for cosmetic results; for the inner side of the breast, where the breast tissue is relatively poor, at most 5% tissue resection is allowed; tumors located in the lower part of the breast can be resected easily.

Less breast tissue develops in the top portion of the breast, resulting in the characteristic "bird's beak" malformation. After tumor removal, it is common to have localized sadness [4-5]. Patients with the aforementioned conditions who are unable to continue breastfeeding may benefit from

major surgery of the whole breast in conjunction with postoperative breast reconstruction. Depending on the patient's timeline, breast reconstruction surgery can be classified as either immediate (Phase I) or delayed (stage II) after a profile and current examination. Breast sensory loss after surgery is likely to be significant owing to nerve injury, and this will negatively impact patients' quality of life. Surgery also increases the duration of the procedure and the duration of therapy as a whole. The amount of gland excision in breast-conserving surgery for tumor plastic surgery is more than in standard breast-conserving surgery. The aesthetic effect can be boosted by a factor of four or so [6]. Due to breast Careful evaluation of masses in the upper and outer upper quadrants, or even the areola area, enables the creation of a custom incision that preserves the breasts. For cancers in the upper inner quadrant and upper outer quadrant, an arc incision along the Langer line, an oral incision, or along the Kraissl line is the way to go. Consider radial incisions, particularly when resecting bigger glands (more than 80 g), since they provide a superior aesthetic appearance and can be used for tumors in the lower inner and lower outer quadrants [7]. Many nations in Europe and the United States have already performed this procedure with promising outcomes. Clinical Impact: The number of women undergoing breast-conserving surgery in China is on the rise, and the widespread use of this technique is on the horizon.

## **2. The suitable population for tumor plastic surgery and breast conserving surgery**

Tumor therapy can be utilized for individuals who meet the criteria for breast-conserving surgery and who have no other treatment options. Breast-conserving surgery for tumours ideally suited for cases when a larger amount of gland excision is required to establish a negative surgical margin. Cancer patients whose tumours had a sizable starting volume, those with severe DCIS, etc., all had resection margins. The tumor's volume and its placement, however, are unrelated to one another, and both independently affect the cosmetic results of surgery.

Predictive variables associated with surgical outcome, scarring, and deformity in the postoperative period. Questionnaire for studying a topic risk of breast distortion is increased after the mastectomy volume exceeds 20%, according to studies [8], therefore reconstructive surgery may be required. Patients with locally advanced breast cancer who have undergone preoperative neoadjuvant treatment should undergo extensive surgical operations. Pre-assessment. Tumors in the nipple are considered low-grade if the resection volume is >20% and the tumour site is low.

To achieve a pleasing cosmetic result, breast-conserving surgery for tumour plastic surgery may be explored for patients in the areola region.

Sixty percent to seventy percent of early breast cancer patients in the United States and Europe were covered by health insurance. The breast-conserving surgery rate for breast cancer ranges from 50-60% in Asian nations. Just around 10% of women in China opt to have breast tissue retained due to conservation efforts [9]. Standard Chinese female breasts. Breasts in this range are considered small to medium in size [10, 11], and often require just breast-conserving surgery. While discussing the difficulty of achieving aesthetically pleasing outcomes, especially when breast volume is rather considerable, the group of Deformity of the breasts is possible if there is an excessive amount of scar tissue after surgery. Breast-conserving surgery for Swell Tumors is a viable option for Chinese women.

### **3. The safety of breast-conserving surgery for tumor plastic surgery NSABP-06 clinical study results show that breast-conserving surgery and breast cancer**

Radical adenocarcinoma resection did not improve DFS or OS over other treatment options (36.0% vs. 35.0%,  $P = 0.26$ ; 47.0% vs. 46.0%,  $P = 0.57$ )[3].

Patients with early breast cancer (independent of axillary node status) were compared between modified radical mastectomy and breast-conserving surgery coupled with radiation treatment in the EORTC10801 clinical research. Modified radical mastectomy patients had a higher incidence of local control after 10 years, although both The OS rate did not significantly differ between the two groups (46.0 vs. 39.00%) ( $P = 0.23$ ). [12]. Breast-conserving surgery for tumor plastic surgery not only increases the range of reasons for breast-conserving surgery, but also gains justification. Nonetheless, questions remain about both its safety and clinical efficacy. When it comes to local recurrence, the rate for standard breast-conserving surgery is between 10% and 14%. The risk of local recurrence following surgery is between 2% and 9% [13]. Having breast conservation surgery. The patient's tumor was larger in diameter than those in the conservative treatment group ( $P 0.001$ ); the local recurrence rate was 4.3% in the breast surgery group and 3.7% in the conservative treatment group. Non-significance was found ( $P >.05$ ) [14]. Even having breast-conserving surgery done. Even if the patient's condition is at a late stage, this approach to surgery will not raise the likelihood of problems thereafter. It has been shown that

several parameters, including age, molecular type of tumor, and size of the original tumor, have a significant role in determining a patient's prognosis and overall survival. There is evidence from a variety of clinical research institutions that plastic breast-conserving surgery is an effective and safe treatment option for women who have had breast cancer. Five-year survival was between 95% and 97%, and the percentage of local recurrence was between 0% and 9.4% [15]. There has been a decline in the use of breast-conserving surgery in the West over the past 20 years, according to some studies [16]. This decline may be attributable to patients' and doctors' own treatment decisions or it may result from a greater awareness of genetic factors that increase the risk of developing cancer. Breast-conserving surgery for tumor plastic surgery now has sufficient trial data to confirm its safety.

#### **4. Postoperative aesthetic effect of breast-conserving surgery for tumor plastic surgery**

The patient's perspective on the cosmetic results of breast-conserving surgery for tumors is taken into account during the postoperative period. Simultaneously, a mix of objective and quantitative indicators is required. Literature suggests [17] that this is the case. The following criteria are very important when assessing the cosmetic outcome of breast surgery: (1) Double These include: (1) the symmetry of the breasts; (2) the depth of the depression on the afflicted side of the chest; and (3) the suppleness and health of the skin. Scarring after the operation; how much the nipple moved; To do this, Liu Jianlun and colleagues [18] compared the results.

A comparative study of plastic versus non-plastic breast-conserving surgery for early breast cancer Breast-conserving surgery Patients had a higher incidence of excellent and good ratings for their breasts' aesthetic appearance after surgery. 86.8% in the group that had plastic breast-conserving surgery; 67.2% in the group that had not had cosmetic breast-conserving surgery

The overall satisfaction rate for the group was 92.5 percent (62 out of 67 participants), which was significantly higher than the 80.2 percent satisfaction rate for the non-plastic breast-conserving surgery group (93 out of 116 participants; P 0.05). Patients' health knowledge, vitality, and social functioning were measured using objective measures by Volders et al. [19], as were the participants' performance, mood, and mental health. Both groups underwent breast-

conserving and tumor-resection procedures. Traditional breast-conserving surgery patients had higher facial satisfaction levels. The natural shape of the breast and its postoperative beauty are best protected through a combination of plastic surgery and breast surgery in the case of a malignant tumor. Traditional breast-conserving surgery is not perfect, but patient happiness is.

## **5. Classification of breast-conserving surgery for tumor plastic surgery**

Both local tissue translocation technology (also called residual gland remodeling) and volume replacement technology (also called autologous tissue alternative padding) are commonly used in breast-conserving surgery for breast cancer. Volume replacement approaches include getting autologous tissue to fill in the defect, whereas localized tissue translocation involves the displacement of skin gland flaps or defective per glandular gland bodies from the surrounding skin into the defect site. The rectus abdominis flap is a frequently used tissue transplant that may be used in conjunction with non-autologous tissue replacement fillers such as prosthetic implants to cover a larger region of the defect.

### **1. Local tissue translocation technique**

Breast tissue is now the only option for local tissue translocation procedures. No autologous tissue is transplanted; no prosthesis is necessary, the procedure duration is brief, and the patient is less traumatized because there is no involvement of the donor area. Breast-conserving surgery is an option, but there are stipulations about the size of the tumor to be removed and the breast-to-body volume ratio. Some women with big, sagging breasts may benefit from breast reduction surgery to correct the volume deficit and lift the breasts back into a more youthful position. Researchers have noted that: a dissected body If the breast-conserving operation has a volume-to-mass ratio of less than 20%, then the remaining cavity can be closed without resulting in a notably altered breast form [20]. This is accomplished by resecting the surrounding tissues to a suitable degree of freedom. Grade I local tissue translocation refers to the removal of less than 20% of the breast tissue, with no need to remove excess skin, glandular tissue, or fatty tissue; grade II local tissue translocation refers to the removal of more than 20% of the breast tissue, with the need to remove excess skin, glandular tissue, or fatty tissue. Grade I is the least invasive and most common form of breast cancer, and the amount of breast tissue resection is 20%, or even up to 50%, due to the large excision of the gland, making it necessary to excise the excess

skin and perform a direct breast reconstruction; grade II is more complex, and the amount of breast tissue resection is 20%, or even up to 50%. The operator doing breast reconstruction must have certain education and experience in plastic surgery. Overall, the patient's breast plasticity should be used in conjunction with a resection volume ratio of 20% to get optimal results. Carefully consider the benefits and drawbacks of each surgical option [1–8]. Surgical reconstruction of the breast often begins right away. Absolutely, however, the design of the incision needs to wait until the size, position, and dispersion of the tumor have all been determined.

### **1. Double loop cutting technique**

Tumors in medium-sized breasts that are near the nipple-areola complex (NAC) but do not penetrate the NAC itself. While the patient is seated, a circular incision is made in the skin of the breast around the areola. Cancer patients are classified first by their mouth mark, then by tumor size, location, nipple position, and degree of breast drooping. Outside the circle, make an additional incision mark of the same size and orientation [3]. When the tumor and some surrounding normal tissue have been removed, the remaining breast tissue is repaired. If the drooping is severe or the tumor volume is substantial, the gap between the two circular incisions will need to be extended to accommodate this. If the patient also needs surgery on the opposite side, called a "contralateral breast reduction," employ the same technique.

### **2. Batwing Mastopexy**

Those who have tumors in the upper breast, particularly those that are near the nipple. because a decrease in this kind of suturing thereafter creates a "" shape in the mouth, thus the name "omega creating technique" [21]. On the top of the NAC, a semicircular incision is planned, and a Determine a second, much more expansive semicircle cut, join its ends to make a wing cut, and then press the cut. Using the drawn line as a guide, surgeons remove the diseased tissue and elevate and reattach the breast's bottom tissue. Decrease in the size of the NAC After surgery, patients may experience significant nipple displacement, necessitating NAC on the unaffected side. A symmetrical appearance can be achieved by surgical means [22].

**3. Parallelogram Method** Patients with minor tumor volumes and tumors located far from the NAC may be candidates. The incision is shaped like a parallelogram, with the opposing side lengths and the two side lengths both being kept constant. Avoiding the "cat ear" symbol is straightforward thanks to the intersection of the squares [22].

#### **4. J-shaped mammoplasty**

Incise from the inside of the areola incision to make a circular arc to the inframammary fold; incise from the outside of the areola incision to turn to the lower fold. Completely painless removal and replacement of the region's medial and lateral glands Go to the injury site, repair the gland, and then do a NAC recentralization. The breast won't compress laterally, and the NAC won't deviate if you use this technique [22].

#### **5. Rotation flap method**

The incision has a fan shape and is made in the upper inner quadrant of the breast, directly above the tumor. Head Begin by making an arced incision close to the upper-inner quadrant of the NAC, and then a second incision perpendicular to the first. In addition to the glandular tissue within the sector, the final cut consists of one arc incision and two straight incisions connecting two arc incisions [3]. Construct a triangle under the arm. Axillary lymph node dissection is also made easier with the help of incisional instruments.

#### **(2) Volume displacement technology**

Transplanting one's own tissue to restore lost volume is the primary use of volume replacement procedures or autologous tissue replacement fillers. Individuals with a modest volume and a substantial volume of respected tissue, who also have good individual characteristics can sometimes forgo contralateral surgery to achieve symmetry. The donor site scar will also be larger, and future breast reconstruction choices will be restricted. Massive surgical trauma, leaving scars. Submuscular tissue flaps, free dermal fat flaps, etc., are examples of autologous tissue flaps that are often employed nowadays. In general, patients with medium breast size, and notably Asian women, are candidates for the latissimus dorsi flap. The perforator of the inferior epigastric artery Technical considerations limit the use of skin flaps, rectus abdominis

myocutaneous flaps, and omentum flaps. The risks and problems associated with this procedure are higher because of the increased height and trauma it causes. risk [23]. For breast reconstruction in 2007, Kijima et al. [24] used free dermal fat flaps. Despite the higher aesthetic outcome, breast-conserving surgery for adenocarcinoma has not been widely advocated in China. Combined non-autologous tissue replacement is an option when a considerable portion of the defect has to be repaired. In breast reconstruction, non-breast tissue, most often in the form of a permanent prosthesis, must be used as a substitute for the original breast tissue. Although widespread in the West, particularly the United States and Europe, implantation is still very uncommon in China [25].

## **6. Conclusion**

Single-surgery approaches are now the gold standard for treating breast cancer. More and more hospitals are moving away from the traditional treatment model and towards the comprehensive model. The development of a patient-centered, risk-appropriate breast cancer treatment strategy requires input from all relevant stakeholders and careful consideration of all relevant factors. Excellent outcomes and a higher quality of life for patients following surgery might be the result of a thorough and carefully thought-out treatment strategy. Positive aesthetic impact. Plastic breast-conserving surgery is the cutting edge of customized cancer care. The potential of surgical approaches to treating breast cancer is significant. The existing situation isn't ideal, although the issue of whether or not breast surgery margins are safe is still up for debate; the separation between negative and positive margins has been established. The incidence of local recurrence following surgery increases in proportion to the proximity of the tumor. The benefits of tumor breast-conserving surgery include: (1) a shorter recovery time and less pain than with breast reconstruction; (2) a wider range of candidates for breast-conserving surgery; (3) a similar overall survival rate and 5-year recurrence rate compared to the standard breast-conserving surgery; and (4) less trauma than with breast reconstruction. Doctor-formulated, patient-specific programs improve surgical safety while also guaranteeing optimal cosmetic results. There is a risk of postoperative asymmetry, which can manifest as double breasts or the need for simultaneous or delayed contralateral breast surgery, both of which add time and money to the treatment process. Breast cancer patients now have access to innovative technologies such as tumor plastic breast-conserving surgery, which can provide a more satisfying cosmetic outcome,

particularly for smaller and medium-sized breasts. The vast majority of women with breast cancer would benefit from a more compassionate treatment regimen.

## References

[1] Zhang Baoning. Review and prospect of breast- conserving surgery for early breast cancer [J/CD] . Chinese mammary gland Journal of Diseases (Electronic Edition), 2010, 4(3): 1- 3.

[2] Haloua MH, Krekel NM, Winters HA, et al. A systematic review of oncoplastic breast- conserving surgery: current weaknesses and future prospects [J] Ann Surg, 2013, 257( 4) : 609- 620.

[3] Borger JH. The impact of surgical and pathological findings on radiotherapy of early breast cancer [J] . Radiother Oncol, 1991, 22( 4) : 230- 236.

[4] Cao Xuchen. Breast- conserving surgery—a new direction of individualized treatment in breast surgery [J] . China Basic and Clinical Journal of General Surgery, 2013, 20(8): 838- 841

[5] Potter S, Brigic A, Whiting PF, et al. Reporting clinical outcomes of breast reconstruction: a systematic review [J] . J Natl Cancer Inst, 2011, 103( 1) : 31- 46.

[6] Down SK, Jha M, Pankaj K, et al. Oncological advantages of oncoplastic breast- conserving surgery in treatment of early breast cancer [J] . Breast J, 2013, 19( 1) : 56- 63.

[7] Gurleyik G, Karagulle H, Eris E, et al. Oncoplastic surgery; volume displacement techniques for breast conserving surgery in

patients with breast cancer [J] . Acta Chir Belg, 2017, 117( 3) : 169-175.

[8] Weber WP, Soysal SD, El-Tamer M, et al. First international consensus conference on standardization of oncoplastic breast conserving surgery [J] . Breast Cancer Res Treat, 2017, 165( 1) : 139-149.

[9] Li J, Zhang BN, Fan JH, et al. A nation- wide multicenter 10- year ( 1999– 2008) retrospective clinical epidemiological study of female breast cancer in China [J] . BMC Cancer, 2011, 11( 1) : 364.

[10] Cii TD,Cordeiro E. Complications of oncoplastic breast surgery involving soft tissue transfer versus breast- conserving surgery: an analysis of the NSQIP database [J] . Ann Surg Oncol, 2016, 23 ( 10) : 1- 6.

[11] Wang Xiyue, Cao Yin, Lin Zhengquan, etc. Breast plastic surgery in the protection of breast cancer with small and medium breast volume Analysis of clinical application in mammary surgery [J] . Application of modern medicine in China, 2017, November (8): 44- 46.

[12] Vrieling C, van Werkhoven E, Maingon P, et al. Prognostic factors for local control in breast cancer after long- term follow- up in the EORTC boost vs no boost trial: a randomized clinical trial [J] . JAMA Oncol, 2017, 3( 1) : 42- 48.

[13] Bong J, Parker J, Clapper R, et al. Clinical series of oncoplastic mastopexy to optimize cosmesis of large- volume resections for breast conservation [J] . Ann Surg Oncol, 2010, 17( 12) : 3247- 3249.

- [14] Shao Zhimin. Progress and review of breast- conserving surgery for breast cancer [J] . Cancer Prevention Research, 2018,45(5): 269-273.
- [15] Down SK, Jha PK, Burger A, et al. Oncological advantages of oncoplastic breast- conserving surgery in treatment of early breast cancer [J] . Breast J, 2013, 19( 1) : 56- 63.
- [16] Kummerow KL, Du L, Penson DF, et al. Nationwide trends in mastectomy for early- stage breast cancer [J] . JAMA Surg, 2015, 150( 1) : 9- 16.
- [17] Zhu Jiang, Kang Hua, Hai Tao, et al. Application of Breast Plastic Technique in Breast Conserving Surgery for Breast Cancer [J]. Cancer Progress, 2013, 11(5): 392-399.
- [18] Liu Jianlun, Lan Danyan, Tang Wei, et al. Breast- conserving surgery and non- plastic breast- conserving surgery for breast tumors Clinical comparative study of surgical treatment of early breast cancer [C/OL] The 8th Chinese Oncology Compilation of Papers of the Surgery Conference and the Thirteenth Cross- Strait Oncology Conference, Jinan, 2014. North Beijing: China Anti- Cancer Association, 2014: 426.
- [19] Volders JH, Negenborn VL, Haloua MH, et al. Cosmetic outcome and quality of life are inextricably linked in breast- conserving therapy [J] . J Surg Oncol , 2017, 115(8): 941- 948.
- [20] Liu Xiaoli, Cai Zhengang. Advances in volumetric translocation plastic surgery for breast cancer [J] . medical review,2014, 20(8): 1407- 1409.

[21] Weber WP, Soysal SD, Fulco I, et al. Standardization of oncoplastic breast conserving surgery [J]. Eur J Surg Oncol, 2017, 43 ( 7 ) : 1236- 1243.

[22] Vos E, Koppert L, van Lankeren W, et al. A preliminary prediction model for potentially guiding patient choices between breast conserving surgery and mastectomy in early breast cancer patients; a Dutch experience [J]. Qual Life Res, 2018, 27( 2 ) : 545 – 553.

[23] Liu Jian, Zhang Yingzhe, Wang Xiaohong, et al. Relevant research progress on postoperative reconstruction of breast cancer [J]. Chinese Journal of Basic and Clinical General Surgery, 2017, 24(10): 1279- 1283.

[24] Kijima Y, Koriyama C, Fujii T, et al. Immediate breast volume replacement using a free dermal fat graft after breast cancer surgery: multi- institutional joint research of short- term outcomes in 262 Japanese patients [J]. Gland Surg, 2015, 4( 2 ) : 179- 194.

[25] Wang Can, Guo Lei. Research progress of breast reconstruction and plastic surgery after breast cancer [J]. medical review, 2013, 19(4): 706- 709.