

Reconstruction of Large Volume Breast Excision Area With Volume Replacement After Using V Mammoplasty Technique

Geniş Hacimli Meme Eksizyon Alanının V Mamoplasti Tekniği Kullanımı Sonrası Volüm Replasmanı ile Rekonstruksiyonu

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Abstract

The main goal in breast cancer surgery should be to perform safe surgery within the framework of oncological principles and to achieve the ideal cosmetic appearance that will not impair the person's quality of life. With this aspect, oncoplastic breast cancer surgery, which was developed for the solution of situations where classical breast-conserving surgery methods are insufficient, is being applied at increasing rates today. The cosmetic success of breast-conserving surgery can be understood after radiotherapy is given. The tissue gap formed in a lumpectomy is closed by the organization of the tissue fluid accumulated in the excision area over time. Fibrosis, which will develop during the natural wound-healing process, increases significantly after radiotherapy and may cause a change in appearance. In oncoplastic techniques, the defect is closed primarily by shifting the breast tissue, thus preserving the cosmetic.

As an example, our study aimed to present the V mammoplasty technique applied to a premenopausal patient in the fourth decade with atypical ductal hyperplasia covering the entire inner half of one breast, with moderate ptosis and macromastia.

Today, breast cancer is accepted as a chronic disease and multidisciplinary teamwork is required for effective treatment. General surgeons play an important role in this team in terms of the interventional treatment of the disease and the preservation of the patient's quality of life. For this purpose, it is necessary for them to know and be able to apply most of the low and high-difficulty levels of oncoplastic techniques.

Keywords Breast cancer, oncoplastic surgery, breast conserving therapy, mammoplasty, cosmesis

Özet

Meme kanseri cerrahisinde temel hedef, onkolojik prensipler çerçevesinde güvenli cerrahi girişim yapmak ve kişinin hayat kalitesini bozmayacak ideal kozmetik görünüme ulaşmak olmalıdır. Bu yönüyle klasik meme koruyucu cerrahi yöntemlerinin yetersiz kaldığı durumların çözümüne yönelik geliştirilmiş olan onkoplastik meme kanseri cerrahisi günümüzde artan oranlarda uygulanmaktadır. Çok sayıda çalışma ile başarılı sonuçları gösterilmektedir. Yeterli seviyede yapılabilmesi, ayrı bir eğitim gerektirmektedir. Meme koruyucu cerrahinin kozmetik başarısı, verilecek olan radyoterapiden sonra anlaşılabilir. Lumpektomide oluşan doku boşluğu, eksizyon alanında biriken doku sıvısının zamanla organize olmasıyla kapanmaktadır. Doğal yara iyileşmesi sürecinde gelişecek olan fibrozis, radyoterapiden sonra belirgin olarak artmakta ve görünümün değişmesine sebebiyet verebilmektedir. Onkoplastik tekniklerde, defekt meme dokusunun kaydırılması ile primer kapatılmakta ve böylece kozmesiz korunmaktadır.

Buna örnek olması açısından çalışmamızda, dördüncü dekatta bulunan, tek memenin iç yarısının tamamını kaplayan atipik duktal hiperplazi alanına sahip, orta derecede ptozisi ve makromastisi bulunan premenopozal olguya yapılan V mamoplasti tekniğinin sunulması amaçlandı. Hastanın talebi üzerine simetrizasyon cerrahisi tedavinin sonuna bırakıldı ve ciddi komplikasyon yaşanmadan kabul edilebilir kozmetik başarı elde edilebildi.

Günümüzde meme kanseri kronik hastalık olarak kabul edilmekte ve tedavisinin etkin yapılabilmesi için multidisipliner takım çalışması gerekmektedir. Genel cerrahi uzmanları bu takımın içerisinde hastalığın girişimsel tedavisi ve hastanın hayat kalitesinin korunması bakımından önemli bir rol üstlenmektedir. Onkoplastik tekniklerin alt ve üst zorluk derecesinde olanlarının çoğunu bilmeleri ve uygulayabilmeleri bu amaç için gereklidir.

Anahtar Kelimeler Meme kanseri, Onkoplastik cerrahi, Meme koruyucu cerrahi, Mamoplasti, Kozmesiz

INTRODUCTION

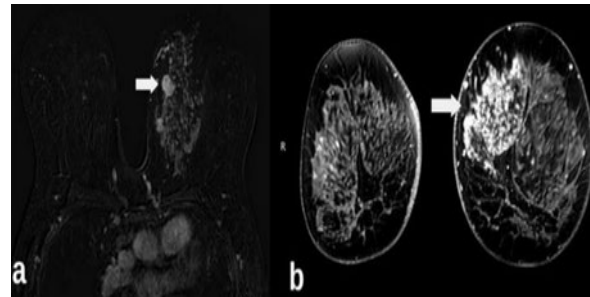
The term oncoplastic breast surgery (OPS), which emerged in the 1980s, allows for larger breast tissue removal than lumpectomy without compromising oncological principles and aims to achieve superior cosmetic results with quality of life [1-3]. It has been proven to be oncologically safe and has been shown to be equivalent or superior to standard breast-conserving surgery (BCS) in terms of local recurrence and disease-free survival in numerous studies [4-7]. Through these techniques, the breast can be preserved even in patients with tumors ≥ 5 cm in size, for whom mastectomy has often been recommended in the past [4]. Among its indications; there are situations such as the concern of not obtaining an adequate clean surgical margin, the presence of bad tumor localization areas such as the upper inner or lower quadrant, the presence of multifocality, the need for skin excision and inability to find suitable conditions for reconstruction after mastectomy. Also, patients with a high tumor/breast ratio ($>20\%$), macromastia, who want breast reduction, who have significant ptosis or breast asymmetry are candidates for OPS [8]. It can be safely applied in case of positive surgical margins after BCS. OPS has proven its effectiveness because it has similar levels of surgical margin positivity, reexcision and complication rates to BCS. Also, it is superior to BCS in terms of quality of life and maintaining one's self-confidence [9]. Classification to associate the amount of breast excision with the most appropriate type of surgical procedure guides whether the patient will benefit from volume replacement procedures [10-12]. A multidisciplinary team role, including the medical oncologist, radiation oncologist, and surgical team (a breast surgeon and a plastic surgeon, or just a specially trained breast surgeon) is essential for successful planning and optimization of outcomes [13].

V mammoplasty is a technique suitable for broad-based, non-ptotic medium-large size breasts, lower inner quadrant tumors. If the tumor is localized at the 7-8 o'clock position, the defect area can be closed with this technique without creating a major deformity. In our study, we aimed to present the result we obtained with the volume replacement technique, which we applied on the basis of V mammoplasty at our patient who had atypical ductal hyperplasia in the entire inner upper, middle and lower part of the left breast, and who wanted to preserve the breast and reduce it if possible.

CASE PRESENTATION

Informed consent was obtained from the patient for this case report.

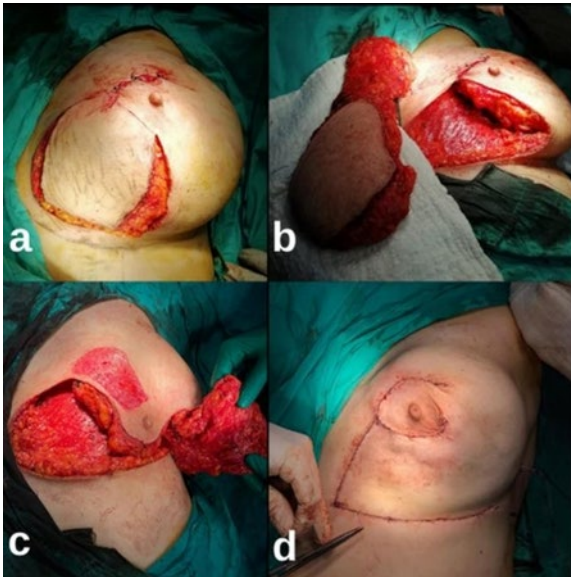
A 42-year-old premenopausal female patient presented with the complaint of pain in the left breast. She had macromastia accompanied by bilateral stage 2 ptosis and there was no palpable lesion. Ultrasonography performed at an external center was reported as natural, and it was stated that there were irregularly located microcalcification areas in the left breast in her mammography. It was learned that a thick needle biopsy was performed with the findings and resulted in atypical ductal hyperplasia. Magnetic resonance imaging showed asymmetric parenchymal enhancement covering approximately 50% of the total breast volume in the entire upper- middle and lower part of the left breast. A 2 cm spiculated contoured lesion was found in the central part of the pathological area (Figure 1).



Volume replacement on the basis of V mammoplasty was recommended for the patient who requested that her breast be reduced if possible. Informed consent was obtained from the patient for this case report. The study adhered to the tenets of the Declaration of Helsinki and we obtained an informed consent from all participants. Technique drawing of the breast, determination of the new nipple-areola complex (NAC) area, which will be at the twentieth cm from the midpoint of the sternum to the breast meridian, was performed in the operating room (Figure 2).



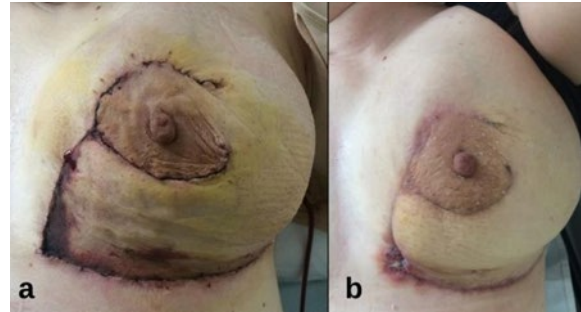
The $\frac{1}{4}$ lower inner quadrant of the left breast was excised with the skin (Figure 3a), and the $\frac{1}{4}$ upper inner quadrant of the left breast was excised subcutaneously (Figure 3b) en block, leaving five mm of skin and subcutaneous tissue (Figure 3c).



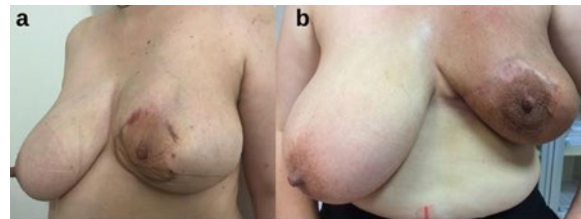
Thus, approximately half of the left breast was completely removed. It was stated that surgical margin negativity was ensured in the frozen examination of the excision piece. After this stage, the

$\frac{1}{4}$ lower outer quadrant parenchyma of the left breast was mobilized subcutaneously and prepectorally, and it was joined to the upper inner quadrant upper border of the left breast with the help of separate 2/0 polyglactin sutures without leaving any dead space. The skin tissue in the midline of the left breast was joined over this reconstruction area to the lower border of the skin tissue in the upper inner quadrant of the left breast with the help of separate 3/0 polyglactin sutures (Figure3d).

incision sites, loss of sensation and necrosis were not observed in the nipple-areola complex (Figure 4a).



The radiotherapy process was completed on time and at the planned treatment dose. The wound healed in the third month after surgery (Figure 4b). No complications occurred in the breast parenchyma, skin and wound sites six months after radiotherapy (Figure 5a and b).



DISCUSSION

The V mammoplasty technique, named after the V scar formed after the radial and inframammary incision, is based on the wide excision of the tumor in the lower inner quadrant and the overlying skin. Reshaping the breast is accomplished by medially advancing the remaining lower and outer quadrants. In the first stage, an inframammary incision is made and the posterior aspect of the lower gland is released. In the second stage, deepitelization is applied to the determined area and NAC centralization is applied. Symmetry of the opposite breast can be done in the same surgery or in a later session. Knowing the possible presence of invasive cancer in our case, surgical margin negativity was achieved thanks to the V mammoplasty technique applied for atypical ductal hyperplasia in which more than half of one breast was affected. Acceptable cosmetic success has been achieved. Since no pathological lymph node was detected in axillary ultrasonography and physical examination, a consensus was reached with the patient about the necessity of reoperation, and sentinel lymph node was not studied. After radiotherapy, the appearance of the breast was intact, its presence was preserved for symmetry surgery.

The importance of OPS emerges when mastectomy is required. Simultaneous reconstruction has various advantages over delayed reconstruction. The scar it leaves on the tissue is less, it is easier to apply, symmetry procedures can be performed at the same time, simultaneous mastectomy and first-stage reconstruction are cost-effective and increase patient satisfaction.

The point where the OPS decision becomes important is the planning phase of the mastectomy. Individual parameters should be evaluated one by one to determine which type of volume replacement procedure would be best for the patient [14]. It would be helpful to identify the five aesthetic components of the breast to achieve optimal aesthetic results in OPS. These; i) the location and extent of the tumor to be removed, ii) the natural size and volume of the breast, iii) the presence and degree of ptosis, iv) the area where the NAC will be positioned after breast tumor surgery, v) the evaluation of the opposite breast for symmetry [15]. Our case had macromastia accompanied

by second stage ptosis. She wanted her breast to be reduced and the symmetry surgery to be done later. According to this, the area where the NAC will be transported was determined first, and the operation was started with the deepitelization of this area.

Multiple techniques are available for volume replacement or reconstruction after wide tissue excision. These are applied depending on tumor size, location, breast size and ptosis. V mammoplasty is a second level oncoplasty technique and is applied after excision of 20-50% of the breast volume. In our case, excision was performed according to the same method, and volume replacement, which is an upper step, was applied.

V mammoplasty has similar complication rates and high negative surgical margin rates with other techniques. Despite the large volume removed, it is an important advantage that the cosmetic results are sufficient. Its rare complications are fat necrosis at the incision edges and wound edge detachment. The fact that simultaneous breast symmetry surgery was not performed in our case led to the need for additional surgical intervention.

CONCLUSION

It is important that general surgeons who will focus on breast cancer treatment are trained in these techniques. Unlike plastic surgeons, who will likely focus on advanced and intermediate techniques, general surgeons must learn most of the lower and higher techniques that patients need. It is the responsibility and opportunity of general surgeons to be at the forefront of breast cancer treatment, to adopt and apply techniques that they think are appropriate for their skills and the needs of their patients. This is the best way for surgeons to provide their patients with excellent comprehensive breast care.

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