OPEN

PRS GLOBAL OPEN

ORIGINAL ARTICLE
Cosmetic

The Omega Mastopexy Technique for the Correction of Breast Ptosis after Breast Implant Explantation

Patrick P. Bletsis, MD*
Etienne J.M.C.P. Lommen, MD, PhD†
Berend van der Lei, MD, PhD*

Background: The past few years have seen a 50% increase in breast implant explantations. Patients with ptotic breasts may desire mastopexy, although conventional techniques are often invasive. We describe our experience with the omega mastopexy technique after breast implant explantation and capsulectomy.
Methods: In the past 2 years, 10 patients with breast Regnault classification ptosis grade I–III underwent the omega mastopexy technique following breast implant explantation and capsulectomy. A detailed description of our operating technique is provided.
Results: This series includes a total of 10 patients. The median age was 48.5 (IQR 42.8–52.5), median body mass index 26 (23.8–28.3) and median implant volume 355 (IQR 325–375). Excellent and stable aesthetic results were achieved without recurring ptosis. One patient, an active smoker, underwent reexcision after 1 year due to hypertrophic scars. No complications have been reported until this date at 2 years follow-up.
Conclusions: The omega mastopexy technique offers an excellent alternative to classic lifting techniques for ptotic breasts after breast implant explantation. Patients with increased risk of wound healing impairment are especially likely to benefit.
(Plast Reconstr Surg Glob Open 2024; 12:e6000; doi: 10.1097/GOX.0000000000006000; Published online 19 July 2024.)

INTRODUCTION

Breast augmentation is one of the most frequently performed aesthetic procedures worldwide.[1] In the past few years, media attention and awareness on breast implant associated anaplastic large cell lymphoma, breast implant illness, autoimmune syndrome induced by adjuvants, and the Poly implant prothese scandal undoubtedly have contributed to the 50% reported increase in breast implant explantations.[1]

After breast implant explantation, plastic surgeons are challenged with preserving breast aesthetics to the highest degree possible. Skin flaccidity may increase due to aging and other factors such as weight loss, pregnancy, and breastfeeding. As a result of all aforementioned aspects, ptosis of breasts and nipple-areolar complex (NAC) develops, which undoubtedly further increases after implant removal. After implant removal, classic mastopexy techniques may offer good options for conservation of breast aesthetics but are significantly invasive. Moreover, especially after years of having breast implants, tissues may have thinned and sagged to a considerable degree, increasing the risk of complications such as NAC and skin necrosis, bleeding and infection. Therefore, a less-invasive alternative with a complication risk may be indicated; such as the omega mastopexy technique. The use of the omega pattern for breast lifting technique has been described in the past, but mainly in the context of oncoplastic surgery[2–5] or reduction mammoplasty.[6] The pattern is similar to the batwing technique.[3] In this article, we present our experience with the omega mastopexy technique as a simplified lifting technique for correction of breast ptosis after implant removal.

*From the *Department of Plastic and Reconstructive Surgery, University Medical Center Groningen, University of Groningen, Groningen, the Netherlands; and †Plastic Surgeon, Private Practice, Boerhaave Medical Center Centrum, Amsterdam, the Netherlands.*

Received for publication April 9, 2024; accepted May 31, 2024.

DOI: 10.1097/GOX.0000000000006000

PATIENTS AND METHODS

In the past 2 years, 10 patients with breast Regnault classification ptosis grade I–III underwent the omega mastopexy technique following explantation of breast

Disclosure statements are at the end of this article, following the correspondence information.

implants, including capsulectomy. Patient characteristics are shown in Table 1. All procedures were performed by coauthor E.J.C.M.P.L.

Pictures were edited with GIMP (version 2.10), an open-source image editing software. SPSS Statistics, version 28.0 (IBM Inc., Armonk, N.Y.) was used for all statistical analyses.

Operating Technique

Preoperative markings for all patients are applied in standing position (Fig. 1). First, a midclavicular line is drawn in the axis of the breast towards the NAC followed by two horizontal lines that follow the crescent shape of the NAC over the midclavicular line. These markings look like the Greek letter omega (Ω), hence the name of the technique (Fig. 1). One omega-shaped marking is placed cranially from the NAC and will indicate the new NAC position and horizontal scar, whereas the other is mirrored and placed on lower breast pole between the NAC and IMF. The desired shape and size of the NAC is also drawn following the existing circumference.

Two grams of intravenous Cefazolin is administered preoperatively. Patients are placed in supine position with arms abducted 90 degrees. General anesthesia by tracheal intubation is favored.

Incisions are made with a size 15 blade over the full length of the omega-shaped lines until the superficial fascia. Subsequently, the skin in between the omega lines and around the NAC is deepithelialized followed by hemostasis (Fig. 2). The incision providing access to the breast pocket is made between the caudal border of the deepithelialized plane and the NAC, which allows for removal of the breast implant and subsequent capsulectomy (Fig. 3). Absorbable braided sutures, preferably Vicryl 3.0 or 4.0 (Ethicon, Inc., Somerville, N.J.), are used to close the incision and approximate the omega lines in two subdermal layers (Fig. 4). A temporary smaller helping suture placed in the center of the cranial NAC and omega crescents may assist in positioning the NAC against the cranial omega line beforehand. During approximation of the mirrored omega lines, auto-augmentation is achieved by compacting fat and glandular breast tissue under the NAC. In this stage, the deepithelialized breast tissue is folded or plicated beneath the NAC within the pocket previously occupied by the breast implant. This maneuver results in increased volume and projection, particularly as ptosis advances, by consolidating more tissue beneath the NAC. Subcuticular closure is achieved with monofilament sutures, preferably Monocryl 4.0 (Ethicon, Inc., Somerville, N.J.). Surgical tape is applied horizontally over the wound and around the NAC in a diamond shape, allowing for adequate monitoring of nipple circulation, and removed after a week.

Takeaways

Question: We describe our experience with the omega mastopexy techniques after breast implant explantation and capsulectomy.

Findings: In this series of 10 patients, we describe and reflect on the omega mastopexy technique. Excellent aesthetic results were achieved by correcting breast ptosis exaggerated after implant removal through superficial nipple-areolar complex repositioning.

Meaning: The omega mastopexy technique offers an excellent alternative to classic lifting techniques for ptotic breasts after breast implant explantation; patients with increased risk of wound healing impairment are especially likely to benefit.

Table 1. Patient Characteristics

	Age	Body Mass Index	Smoker	Comorbidity	Previous Breast Surgery	Ptosis Grade	Baker Classification	Implant Volume (mL)	Placement	Complication
Patient no. 1	56	24	–	–	Augmentation	I	Grade 2	350	Subglandular	
Patient no. 2	48	29	–	–	Augmentation	II	Grade 2	700	Subglandular	
Patient no. 3	54	28	–	–	Augmentation	III	Grade 3	350	Subglandular	
Patient no. 4	42	26	+	–	Augmentation mastopexy	I	Grade 3	360	Submuscular	Hypertrophic scar
Patient no. 5	47	23	–	–	Augmentation	II	Grade 3	280	Submuscular	
Patient no. 6	52	30	–	Hypertension	Augmentation	III	Grade 2	450	Submuscular	
Patient no. 7	43	24	–	–	Augmentation	II	Grade 1	325	Submuscular	
Patient no. 8	49	26	–	–	Augmentation	II	Grade 3	450	Submuscular	
Patient no. 9	42	22	–	–	Augmentation	I	Grade 2	325	Subglandular	
Patient no. 10	52	27	–	–	Augmentation	II	Grade 2	550	Submuscular	

Fig. 1. Patient no. 5: a 47-year-old woman with grade II ptosis, breast augmentation in the past, and grade 3 capsular contracture: preoperative markings.

Fig. 2. Patient no. 5: a 47-year-old woman with grade II ptosis. The skin in between the two omega lines (and around the NAC) is deepithelialized.

RESULTS

This series includes a total of 10 patients with a median age of 48.5 (IQR 42.8–52.5), median body mass index 26 (23.8–28.3) and median explanted implant volume 355 (IQR 320–475) (Table 1).

Excellent aesthetic results were achieved by correcting breast ptosis exaggerated after implant removal through superficial NAC repositioning (Figs. 5 and 6). The aesthetic results remained stable; no recurrence of breast ptosis has occurred thus far. A single patient, an active smoker who had previously undergone augmentation mastopexy abroad and had experienced hypertrophic scars beforehand, once more exhibited hypertrophic scars after undergoing the omega mastopexy procedure. Consequently, scar reexcision was carried out 1 year later, followed by silicon treatment. As of the present date, no additional complications have arisen, and there has been no necessity for further surgical revisions during a minimum 2-year follow-up period.

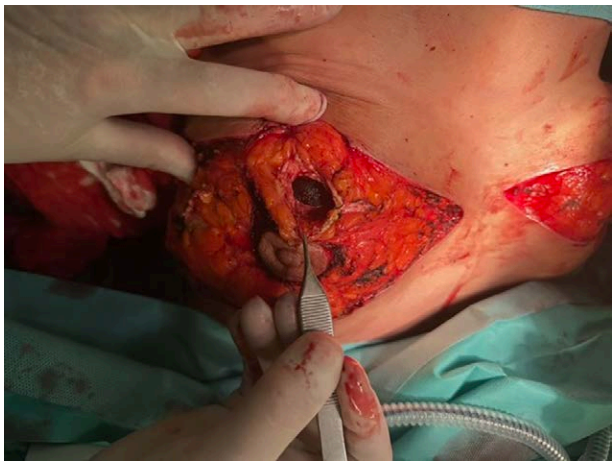

Fig. 3. Patient no. 5: a 47-year-old woman with grade II ptosis. An incision in the area caudal to the nipple provides access to the breast pocket for removal of the breast implant and capsulectomy.

Fig. 4. Patient no. 5: a 47-year-old woman with grade II ptosis. Absorbable braided sutures are used to approximate the two omega lines in two subdermal layers.

DISCUSSION

Based upon our experience and achieved results thus far with the omega mastopexy technique for treating breast ptosis after explantation of breast implants, we cannot but conclude that the omega mastopexy technique offers great results and is considerably less invasive when

Fig. 5. Patient no. 8: a 49-year-old woman with grade II ptosis, breast augmentation in the past, and grade 3 capsular contracture: 2-year postoperative result.

Fig. 6. Patient no. 10: a 52-year-old woman with grade II ptosis breast augmentation in the past and grade 2 capsular contracture: 18-month postoperative result.

compared with classic mastopexy techniques. Therefore, this simple yet effective technique is ideal for patients with ptotic breasts after alloplastic breast enhancement for both aesthetic and reconstructive reasons.

Breast redraping by deepithelialization during the omega mastopexy technique offers a variety of advantages over conventional lifting techniques, such as the anchor/Wise pattern or lollipop lift. Most importantly, the blood supply of the NAC is highly unlikely to be compromised due to the correction realized and focused in the superficial breast tissue plane. In the omega technique, blood supply is reliant on the preserved subdermal plexus, which is carefully preserved through meticulous deepithelialization. Rancati et al have previously demonstrated the importance of preserving the second internal mammary perforator and the fifth anterior intercostal artery perforator (AICAP) in maintaining blood supply to the NAC.[7] Nevertheless, there is uncertainty regarding the viability of the fifth AICAP following conventional inframammary breast augmentation. The omega technique does not interfere with NAC blood supply by creating a pedicle. Furthermore, there is less (mechanical) pressure on the pedicle. In classic techniques, rates of NAC necrosis vary from 0.8% with inferior pedicle, 2.1% total nipple necrosis with the use of superodermal pedicle, and 2.3% with superolateral pedicle.[8] Another great benefit of the omega technique is the preservation of nipple sensibility. No complications, such as bleeding or infection, have been reported after the omega technique, which is most likely to be explained by the limited wound surface and tissue exposure. Last but not least, the operating time of the omega mastopexy is considerably shorter as compared with the classical mastopexy techniques. Our omega mastopexy technique takes approximately 40 minutes of surgery time, whereas other techniques may take between 90 and 180 minutes.

Dr. Jensen has described a similar lifting technique for ptotic breasts in an oncoplastic population in 2009 which he called the "hemi-batwing."[5] Since then, several similar techniques have been investigated; the majority of those pertain to oncoplastic implications. Santanelli di Pompeo et al investigated a double-mirrored omega technique in patients after skin-sparing mastectomy which, compared with the Wise pattern lift, revealed significantly less skin flap necrosis and revision surgery, and better aesthetic outcomes.[2] A comparable batwing-shaped oncoplastic surgical approach for periareolar tumors in upper quadrants also has proved its aesthetic value.[4] Batwing mastopexy has been proven to be safe in patients undergoing concurrent immediate implant-based reconstruction.[3] Similar to our patient population, Miller et al proposed the technique in patients after total capsulectomy.[9] However, the majority of authors used a single cranial omega or batwing incision, whereas we deepithelialized a double-mirrored omega shape, similar to that reported by Santanelli di Pompeo et al. We believe that it is important to perform explantation and capsulectomy after deepithelialization, as it hides deeper scars and the breast implant maintains the tissue tension, thereby facilitating an easier way of deepithelialization.

Clinicians must exercise meticulous care in patient consultation and selection when contemplating the omega mastopexy technique. Typically, aesthetic patients anticipate superior outcomes with minimized scarring. It would be inaccurate to suggest that scars resulting from the omega technique are superior or equally appealing compared with scars seen in techniques like the Wise or lollipop pattern mastopexy. It is crucial to clarify that we do not advocate otherwise. On the contrary, we assert that the omega technique has demonstrated efficacy as a valuable treatment option for a specific subset of our patient population. In our opinion, the ideal candidate for the omega technique is a middle-aged woman (aged 40 and older) experiencing ptosis due to excessive skin relaxation following prior alloplastic breast enhancement. A slightly higher body mass index also allows for increased plication of breast tissue to maintain breast volume and projection. Logically, patients who have undergone primary

augmentation typically exhibit better overall health status and thus experience superior recovery. Conversely, patients who have undergone alloplastic breast reconstruction due to breast malignancies have often received prior treatment with radiotherapy and chemotherapy, which may hinder wound healing. Additionally, patients may opt for less-invasive surgery based on personal preference, particularly after enduring lengthy treatment programs and multiple procedures. Furthermore, other patient categories with impaired wound healing, including those with nicotine abuse, may also benefit from this technique.

When discussing the omega technique with patients, it is essential to address that the primary drawback may be less aesthetically pleasing scarring compared with other lifting techniques. However, in our experience, some mature women may often prioritize achieving a favorable breast shape (especially when dressed) and safety over concerns about scars. This, coupled with factors such as reduced operating time, enhanced effectiveness, preserved nipple sensibility, and a reduced risk of severe postoperative complications, facilitates a more straightforward decision in favor of the omega mastopexy technique. Additional lipofilling may be utilized to enhance upper pole fullness or to address cases where the patient has not undergone prior alloplastic breast enhancement.

Even though all of our patients underwent the omega mastopexy technique under general anesthesia, we believe this surgery can also easily be performed under a local anesthetic, especially when only mastopexy is desired. In our series of patients, most of them were relatively healthy, which may have contributed to the satisfactory results and therefore should be considered as a limitation of this report. Larger prospective studies definitely are required to better judge the omega mastopexy technique among all other mastopexy techniques.

CONCLUSIONS

The omega mastopexy technique offers an excellent alternative to the regular classic lifting techniques for ptotic breasts after breast implant explantation, especially for patients with increased risk of wound healing impairment.

Berend van der Lei, MD, PhD
University Medical Center Groningen
Hanzeplein 1, Post Box 30001
9700 RB Groningen, The Netherlands
E-mail: b.van.der.lei@umcg.nl

DISCLOSURE

The authors have no financial interest to declare in relation to the content of this article.

ETHICAL APPROVAL

The study was approved by the Medical Ethical Commission of the University Medical Center Groningen.

REFERENCES

1. International Society of Aesthetic Plastic Surgery (ISAPS). International Survey on Aesthetic/Comsetic Procedures Performed in 2021. 2022.
2. Santanelli di Pompeo F, Sorotos M, Laporta R, et al. Efficacy of double mirrored omega pattern for skin sparing mastectomy to reduce ischemic complications. *J Plast Surg Hand Surg*. 2018;52:14–19.
3. Kadakia N, Kubiak JW, Landau MJ, et al. The batwing mastopexy in immediate implant-based breast reconstruction: an aesthetic enhancement for patients with cancer. *Plast Reconstr Surg*. 2022;150:487–495.
4. Matkowski R, Szynglarewicz B, Kasprzak P, et al. Batwing mastopexy as oncoplastic surgical approach to periareolar tumors in upper quadrants. *Tumori*. 2012;98:421–427.
5. Jensen JA. Nipple-sparing mastectomy: what is the best evidence for safety? *Plast Reconstr Surg*. 2009;124:2195–2197.
6. Christiansen D, Kazmier FR, Puckett CL. Safety and aesthetic improvement using the omega pattern reduction mammaplasty after breast conservation surgery and radiation therapy. *Plast Reconstr Surg*. 2008;121:374–380.
7. Rancati AO, Nahabedian MY, Angrigiani C, et al. Revascularization of the nipple-areola complex following nipple-sparing mastectomy. *Plast Reconstr Surg*. 2023;151:254–262.
8. van Deventer PV, Page BJ, Graewe FR. The safety of pedicles in breast reduction and mastopexy procedures. *Aesthetic Plast Surg*. 2008;32:307–312.
9. Miller JE, Goodreau AM, Blanchet NP. Omega lift after total capsulectomy in prior breast augmentation. *Plast Reconstr Surg*. 2020;146:835e–836e.