

## A NOVEL TECHNIQUE IN MASTOPEXY: FILLING THE UPPER POLE

Dr. Oudae Mohamad Yousof<sup>1\*</sup>, Mustafa Chikhmous Barakat<sup>2</sup>, Hiveen Mohammad Hannan<sup>3</sup> and Bebars Saleh Asran<sup>4</sup><sup>1</sup>Master Degree in Plastic Surgery, Lattakia, Syria.<sup>2</sup>Specialist in Plastic Surgery, Lattakia, Syria.<sup>3</sup>Master Degree in Plastic Surgery, Lattakia, Syria.<sup>4</sup>Artist, Lattakia, Syria.

\*Corresponding Author: Dr. Oudae Mohamad Yousof

Master Degree in Plastic Surgery, Lattakia, Syria.

Article Received on 14/05/2024

Article Revised on 04/06/2024

Article Accepted on 24/06/2024

## ABSTRACT

Mastopexy is a surgical procedure its main objective is to comprehensively reduce breast size while maintaining the aesthetic appearance of the areola-nipple complex, while prioritizing patient satisfaction. Numerous aesthetic criteria have been established to maintain ideal breast shape post-reduction, and in addition to the potential complications that can arise during the surgical procedure, there is some aesthetic complications that can significantly impact the final outcome. Therefore, the primary purpose of this article is to introduce a novel technique that aims to minimize aesthetic complications and achieve optimal aesthetic results filling the upper pole without implants and nipple-areola complex pointing forwards. A total of 63 mastopexy procedures were performed, with all patients being females. The average age of patients was  $38.6 \pm 5$  years. Their Body Mass Index ranged between 23-33 kg/m<sup>2</sup>, the average volume of drainage was  $60.5 \pm 22.4$  ml. Duration of drain removal ranged from 24-72 hours. Postoperatively some patients experienced wound dehiscence, fat necrosis, asymmetry, nipple recessing. In terms of aesthetic outcomes, 60 patients achieved the approved aesthetic criteria. The upper to lower pole ratio was 45:55. Only 3 patients did not fully meet these criteria. In conclusion the new technique (Yo employed in mastopexy procedures provides exceptional aesthetic results, along with a remarkably low complication rate that can be prevented during surgery. However, it is important to note that this method is still in its early stages of use, and practitioners should possess extensive experience in order to successfully perform this type of surgery.

**KEYWORDS:** Mastopexy, Sagging, filling-upper pole.

## INTRODUCTION

Mastopexy, also known as a breast lift, is a surgical procedure with a rich historical background dating back to 625-690 AD. However, it wasn't until the late 1990s that significant advancements were made in refining and perfecting the technique.<sup>[1]</sup> The primary objective of mastopexy is to comprehensively reduce breast size while maintaining the aesthetic appearance of the areola-nipple complex, all while prioritizing patient satisfaction.<sup>[2]</sup>

According to a report published by the American Society of Plastic Surgeons, there has been a remarkable 70% increase in the number of mastopexies performed between 2000 and 2020. The statistics further reveal that the most prevalent age bracket for undergoing mastopexy falls between 40 and 54 years.<sup>[3]</sup>

The primary indication behind most mastopexies stems from breast sagging caused by natural aging, pregnancy,

or fluctuations in weight. While there are no absolute indications for mastopexy, it can be a suitable option following mastectomies to achieve symmetry and balance.<sup>[2,4]</sup> Generally, the contraindications for mastopexy are the ones that prevent the surgical procedure such as chronic uncontrolled diseases (i.e. HTN, Diabetes) and medication or diseases that affect the coagulation pathway, but still untreated breast cancer is considered an absolute contraindication.<sup>[2]</sup>

Numerous aesthetic criteria have been established to maintain ideal breast shape post-reduction. Some of the most prominent criteria include: Nipple-Areolar Complex (NAC): 19–21 cm from the sternal notch, 9–11 cm from midline, and 7–8 cm from inframammary fold (IMF)<sup>[5]</sup>, Average sternal notch to nipple distance is 21–24 cm. Average nipple to IMF distance is 6-7 cm. Critical ideals of breast beauty Upper pole to lower pole ratio (U: L) of 45%:55% (ie, slightly fuller lower pole than upper pole): the “45:55 breast” Skyward-pointing

nipple (20 mean angle). Straight/mildly concave upper pole slope, Tight lower pole convexity.<sup>[5]</sup>

U: L ratio: Perhaps most strikingly, 85% of women younger than 40 years ranked the 45:55 as the most attractive breast type, statistically significantly more than the 76% of women older than 40, 90% of men (n 5 655) ranked the 45:55 as the most attractive breast 1, 90% of men (n 5 655) ranked the 45:55 as the most attractive breast.<sup>[5]</sup>

In addition to the potential complications that can arise during the surgical procedure. These aesthetic complications, such as breast asymmetry, shape deformity, excessive tissue removal, dog ears, and other technique-related concerns, can significantly impact the final outcome.<sup>[6]</sup> Based on a systematic review study conducted by Khavanin et al.<sup>[7]</sup> it was determined that the most common complication observed in individuals is the recurrence of sagging, this is followed by the occurrence of hypertrophic scars or weak scarring and asymmetry in the breast, areola, or nipple.

Numerous surgeons have endeavored to identify the optimal position for the nipple-areola complex (NAC). However, the reliability of these studies has been called into question due to limitations in preoperative design and marking.<sup>[8,12]</sup> A lower position of the nipple may cause patients to perceive the surgery as a failure, whereas a higher position or upward orientation can make it highly visible, necessitating complex surgical intervention for correction.

The reduction in size of the upper pole after surgery poses a significant concern for patients, particularly since most individuals undergo the procedure to address sagging and maintain the fullness of the upper pole.

Therefore, the primary purpose of this article is to introduce a novel technique that aims to minimize aesthetic complications and achieve optimal aesthetic results filling the upper pole without implants and NAC pointing forwards. By employing this innovative approach to mastopexy, the goal is to enhance patient satisfaction and ensure the attainment of desirable aesthetic outcomes.

## METHODS AND MATERIALS

The present study was undertaken in Latakia, Syria during the period of 20-20. Prior to commencing the study, explicit consent was obtained from all participating patients, ensuring their confidentiality and strict adherence to non-disclosure of any personal information. Subsequently, full history with physical examination was performed. We undergo patients to Mammogram to make sure no other lesions that may affect the procedure. Then we fully enlighten the patients with the procedure and the reality outcomes away from the imaginary expectations. The surgical procedure was performed in accordance with the mentioned technique.

Following completion, postoperative pain is treated with oral analgesics and the outcomes of surgery, including breast shape, were evaluated postoperatively, specifically 8 weeks after the procedure, once edema had subsided and the bandage had been removed. In addition, postoperative complications were carefully assessed, alongside patient satisfaction.

It is important to note that individuals expressing contraindications for surgery or presenting with any breast pathology, such as lumps or abscesses, female participants who had undergone breast surgery within the past year, had a body mass index (BMI)  $\geq 34$ , had a previous history of obesity surgery, exhibited severe sagging of the breast (SN- NAC  $> 35$ ), utilizing hormonal medications, or were habitual smokers. were excluded from this study.

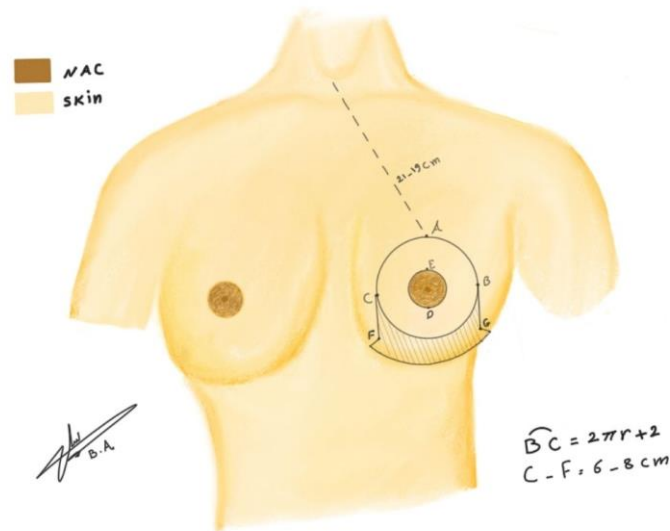
## Surgical technique

The surgical procedure commences by delineating the surgical lines. This process is done while the patient in a seated position with an upright torso and hands facing downward. Initially, the meridian line, midline, and IMF (inframammary fold) are established.

Next, the distance between the sternal notch (SN) and the nipple-areola complex (NAC) is calculated. Subsequently, the new placement of the NAC is determined on the meridian line, at a precise 19-21 cm distance from the SN. An areola marker is utilized to draw a circular outline around the NAC, with a diameter appropriate for the specific patient ranging between 3.8-4.2 cm.

The circumference of the circle around the NAC is measured employing the equation  $2\pi R$  (two times pi multiplied by the radius). Then, a new circle is drawn, centered by the nipple, and ensuring that the highest point of the circumference intersects with the newly designated NAC location. We draw from the circumference of the large circle an equal distance to the circumference of the NAC circle from the superior, lateral and medial sides, with equal distance from the lateral and medial sides, each line on the circumference equals half circumference of the NAC circle adding 1 cm, and then we draw two lines perpendicular to the IMF from the lateral beginning and the medial end, the length of each line is 6-8 cm, then we extend an outward slanting line from the point where each vertical line intersects with the IMF, making an estimation in accordance with the specific characteristics of each patient.

The surgical procedure is performed under general anesthesia, with the patient positioned in the dorsal recumbent posture while the upper limbs are extended horizontally at an.



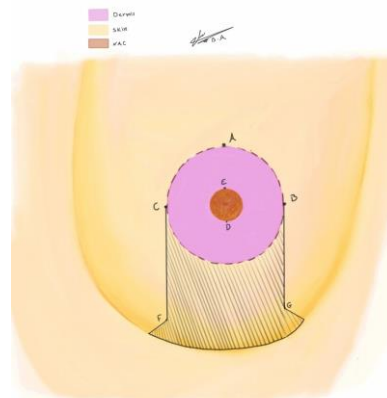
**Figure (1):** showing the markings on the breast before mastopexy, A: The apex of the circumference of the first circle where the new NAC will be situated. B+C: The points located within the circumference of the first circle where the dissection will take place. D+E: The points positioned along the circumference of the NAC circle. G+F: The points of intersection between the vertical lines of B and C and the IMF.

Angle of approximately 70-80 degrees from the trunk. After confirming complete aseptic conditions, which include sterilization and the placement of sterile drapes, we start by injection of Tumescence solution (500 mg lidocaine, 1 mg of epinephrine, and 12.5 mEq sodium bicarbonate added to a 1-liter solution of 0.9% normal saline) intradermally. This step facilitates the subsequent process of de-epithelization, dissection, and minimize the bleeding.

Next, using Inverted T (Wise pattern) incision, the breast is lifted and maintained in a taut and elevated state using a mammostat tool. De-epithelization is done within the

predetermined boundaries established during the initial drawing phase, while preserving the integrity of the NAC. (figure 2) Upon completion, the dermis is meticulously incised, ensuring preservation of the central peduncle. Subsequently, the skin is comprehensively separated from the glandular tissue, surrounding the breast on all sides at the subcutaneous fat level. (figure 3)

To prevent postoperative recurrence or lateral deviation of the breast, a 2 Vicryl suture is used fixing the breast gland to the appropriate rib's periosteum. The selection of suture placement is based on the patient's desired breast shape post-surgery.



**Figure (2):** De-epithelization around the NAC in the circumference of the initial circle.

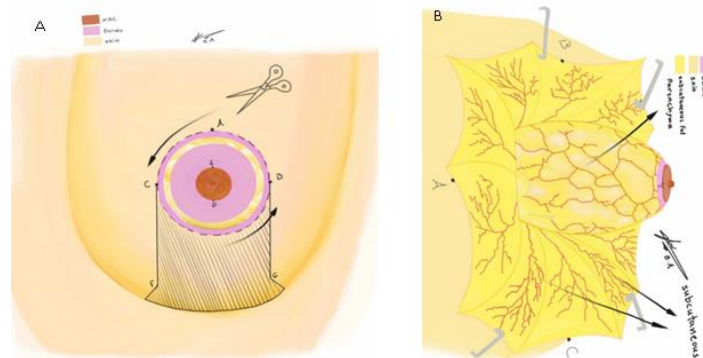
Consequently, the NAC is fixed in its new anatomical position using a 2/0 Vicryl sutures, while a fixation suture is applied to the medial and lateral flaps simultaneously (Figure 4). Visual assessment is conducted to ensure symmetry in shape and orientation. Adjustments are made as needed, either by manipulating the sutures or excising a portion of the skin from the

wound's vertical edges. Finally, a negative pressure suction device is positioned, and the wound is meticulously closed in three layers.

The closure process involves fixing the first layer of the wound to the rib periosteum using simple interrupted sutures made with size 1 Vicryl suture. Subsequently, the

second layer entails simple inverted sutures using 2/0 Vicryl thread. Lastly, the third layer consists of

intradermal sutures executed with 4/0 Vicryl thread.



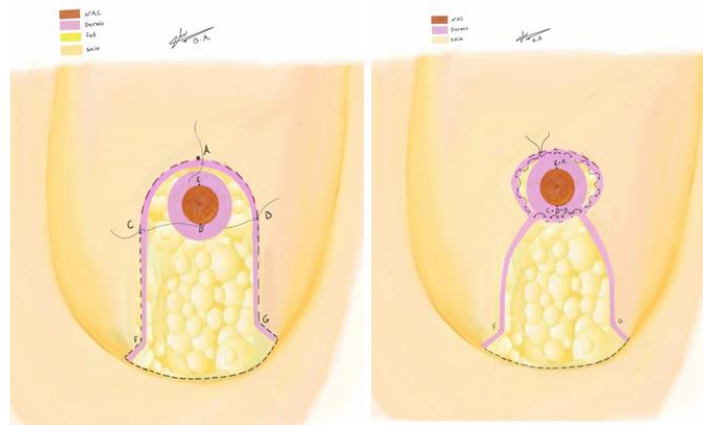
**Figure (3): A: Wise pattern with ensuring preservation of the central peduncle, B: separating the skin from the glandular tissue, surrounding the breast on all sides at the subcutaneous fat level.**

Following wound closure, a compressive sterile bandage is applied and remains in place for a duration of two weeks, along with the use of a compression corset for a total of eight weeks.

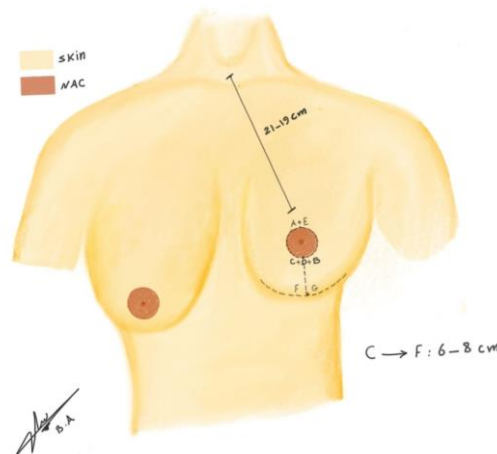
of the breast is performed. Care is taken to preserve the central pedicle, with the glandular tissue being folded and sutured using 2/0 Vicryl thread.

If mastopexy with a lift is desired, a wedge-shaped excision of glandular tissue and fat from the lower aspect

This technique is aptly named "Yousof Technique" in honor of its creator, Dr. Oudae Yousof.



**Figure (4): Fixing the NAC to its new position using 2/0 Vicryl threads with fixation sutures applied to the medial and lateral flaps simultaneously.**



**Figure (5): The final shape after mastopexy showing the points A and E merged together locating the new position of NAC, points B, C and D together and points F and G together on the new IMF.**



## RESULTS

Between the years (20-20), a total of 63 mastopexy procedures were performed, with all patients being females. Among these, 26 cases were performed for the first time, while 37 cases were reoperated. The primary indication for surgery was a change in breast shape for 42 patients, while 18 patients presented with breast sagging. Additionally, 3 patient had breast asymmetry. All surgeries were conducted using general anesthesia with the previous technique.

The age range of the patients was 25-48 years, with an average age of  $38.6 \pm 5$  years. Their BMI ranged between 23-33 kg/m<sup>2</sup>, with an average of  $28.17 \pm 2.7$  kg/m<sup>2</sup>. Out of the total patients, 31 individuals had a history of tummy tuck (49.2%), 34 patients had undergone a previous cesarean section (53.9%), and 16 patients had undergone previous liposuction (25.3%). Importantly, none of the patients had any significant medical history that could impact their surgical outcomes. The duration of the surgical procedures ranged from 2-3 hours, with an average duration of  $2.3 \pm 0.5$  hours.

The volume of drainage from the drain ranged from 35-125 ml, averaging at  $60.5 \pm 22.4$  ml. The duration of drain placement ranged from 24-72 hours, with an average of  $30.5 \pm 14$  hours. Most patients were discharged after an average of  $1 \pm 0.5$  days, following

their initial follow-up visits. Postoperatively, 5 patients (8%) experienced wound dehiscence, 4 patients (6.3%) developed fat necrosis, 4 patients (6.3%) experienced asymmetry, and only 1 patient (1.5%) exhibited nipple recessing.

In terms of aesthetic outcomes, 60 patients (95%) achieved the approved aesthetic criteria, with a mean NAC (nipple-areola complex) distance of 20.3 cm from the sternal notch, 9.8 cm from the midline, and 7.2 cm from the inframammary fold. The upper to lower pole ratio was 45:55. Only 3 patients did not fully meet these criteria, with two patients displaying NAC distances of 23.2 cm and 22.8 cm, respectively, and one patient having a 50:50 upper to lower pole ratio. Nonetheless, these differences did not impact patient satisfaction, as the majority expressed their contentment with the surgery. Only two patients expressed dissatisfaction with the final outcome, and it is noteworthy that both were among those who met the aesthetic standards.



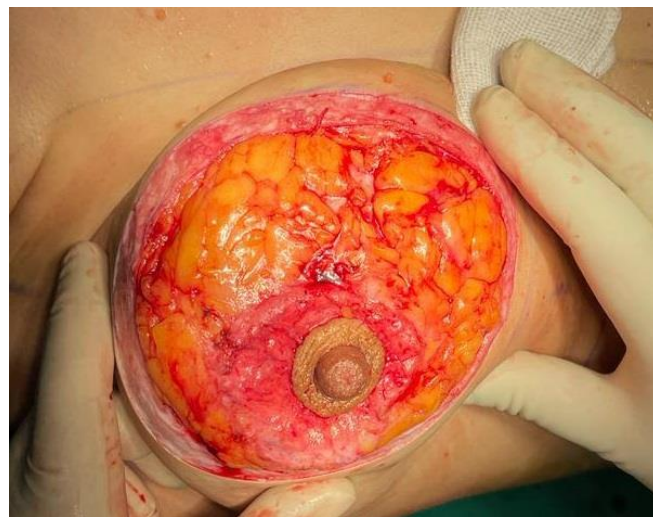
Figure 6: 39 year old women with sagging before mastopexy.



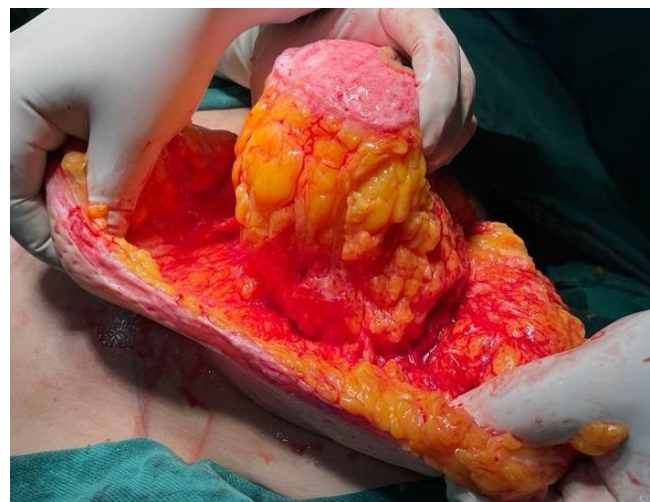
Figure 7: showing the marking on the patient before mastopexy.



**Figure 8: De-epithelization around the NAC in the circumference of the initial circle.**



**Figure 9: incision around the NAC ensuring preservation of the central peduncle.**



**Figure 10: separating the skin from the glandular tissue, surrounding the breast on all sides at the subcutaneous fat level.**

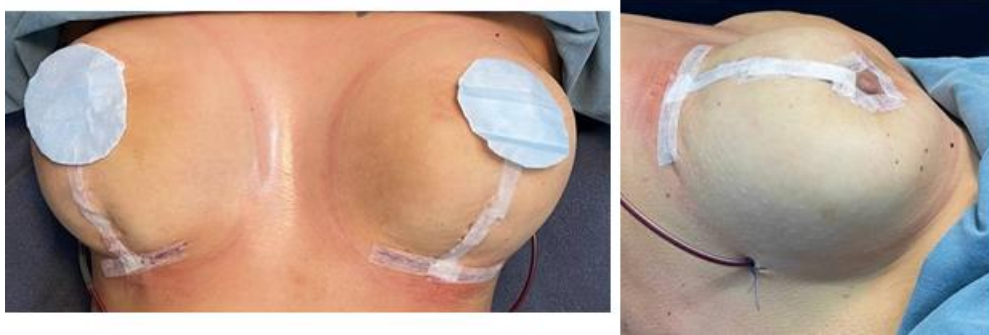


Figure (6): The shape of the breasts after the procedure.



Figure (7): The final result after 1 week from doing the mastopexy.

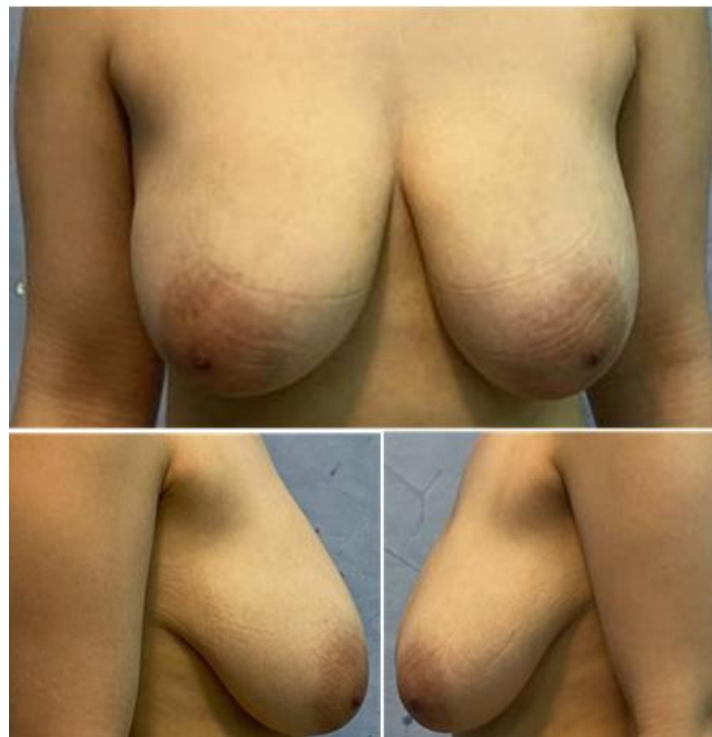


Figure (8): A 32-Year old woman with sagging breasts.



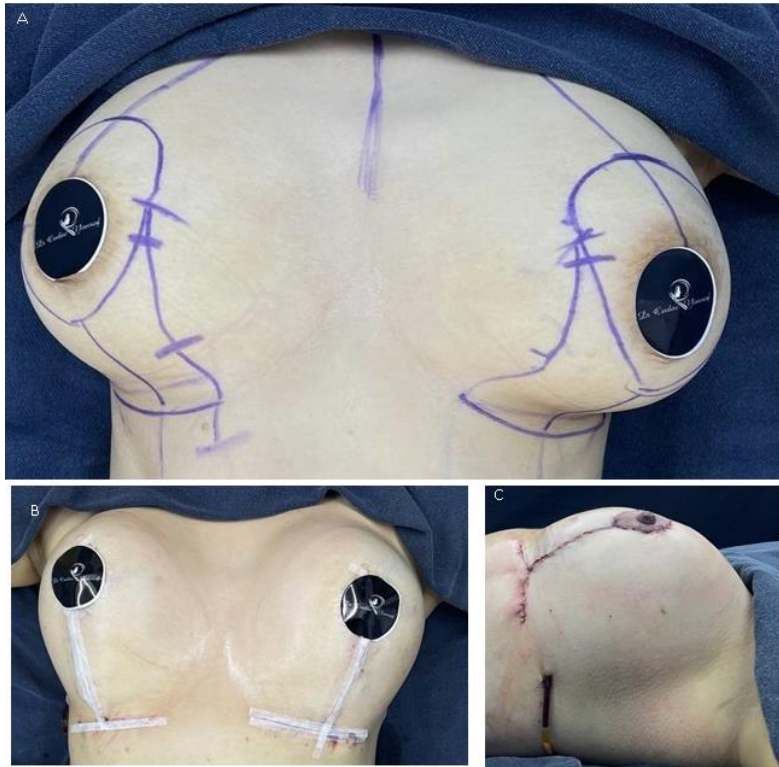


Figure (9): A: showing the marks on the last patient before surgery, B: anterior view of the breasts shape after finishing the mastopexy, C: lateral view after the mastopexy.



Figure (10): The final shape of the breast after two weeks- follow up.



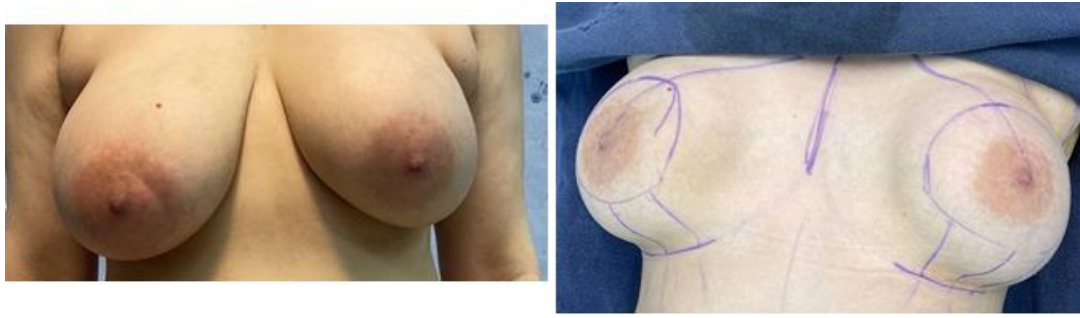


Figure (11): 44 year old woman with sagging breast, and the markings on the breast before mastopexy.

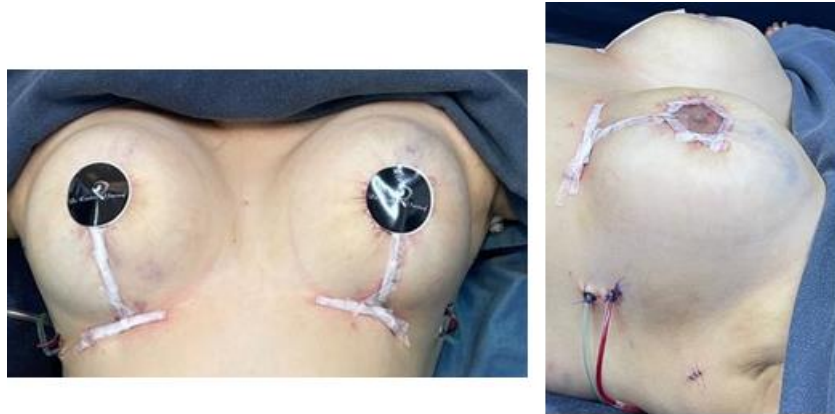


Figure (12): the same patient after finishing the mastopexy.



Figure (13): A 37-year-old female patient presents with an aesthetic deformity following a previous mastopexy procedure, where the upper-to-lower (U:L) ratio appears to be less than 45:55.



Figure (14): The aforementioned patient, who previously underwent mastopexy, underwent a repeat procedure utilizing the Yousef technique under our care.

#### DISCUSSION

It is important to acknowledge that although aging and breast sagging play essential roles in motivating patients to undergo mastopexy, social factors also significantly influence individuals, especially women, to seek surgical procedures for the purpose of enhancing their aesthetic

appearance and achieving a more youthful look. Consequently, the aim of this technique was to obtain the best aesthetic outcome in accordance with internationally recognized aesthetic standards. Despite the small sample size, the results have been highly promising, yielding optimal breast shape. The average age and BMI of the

patients were notable, with these factors contributing to increased breast sagging that could potentially affect the aesthetic outcomes of mastopexy. However, this technique demonstrated excellent results, with a minimal incidence of complications, all of which were effectively managed without leaving any subsequent traces.

Numerous studies have presented different techniques for performing mastopexy, with the increasing number of the procedure performed leading to a suggestion of novel techniques. For instance, Yilmaz<sup>[13]</sup> proposed a modified approach involving filling of the breast's upper pole through an inferolateral-based breast flap. Based on his findings, this method can be employed for mild to severe breast deformities, with long-lasting stability in terms of breast shape and upper pole fullness, similar to other autoaugmentation procedures. Our study's outcomes aligned with those of Yilmaz's study regarding aesthetic standards and the upper to lower pole ratio. It should be highlighted that while the operating time did not significantly vary from traditional operations, our sample size was approximately three times larger than that of Yilmaz's study, which contributes to the strength of our findings.

Another study conducted by Zavrides<sup>[14]</sup> introduced two modifications to the Pitanguy technique. The first modification involved vertical dissection of the upper pole of the breast to the fascia of the pectoralis major muscle and laterally to the nipple-areola complex. The medial flap was then advanced superiorly, rotated 90 degrees, and sutured to a designated point (A), while the lateral flap was placed below the medial one. The second modification entailed an inferior chest wall-based flap to achieve a desirable and long-lasting breast shape. The inferior flap was solely dependent on the thoracic wall vasculature and was completely detached from surrounding structures, ensuring optimal volume. The upper flap of the breast covered the inferior flap. Zavrides' study indicated that these modifications successfully achieved aesthetic goals, with a minimal incidence of complications. Unfortunately, information about the duration of the surgical procedure was not provided, leaving room for further inquiry.

## CONCLUSION

The new technique (Yo employed in mastopexy procedures provides exceptional aesthetic results, along with a remarkably low complication rate that can be prevented during surgery. However, it is important to note that this method is still in its early stages of use, and practitioners should possess extensive experience in order to successfully perform this type of surgery.

## ACKNOWLEDGEMENT

The authors have nothing to acknowledge.

## REFERENCES

1. Vrebos J, Dupuis C. [From a single vertical scar to vertical mammoplasty. From Louis Dartigues (1869-

- 1940) to Claude Lassus (1933)]. *Ann Chir Plast Esthet*, 2000 Feb.; 45(1): 62-8.
2. Sachs D, Szymanski KD. Breast Reduction. [Updated 2023 Jun 27]. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing, 2024 Jan.
3. 2022 Plastic Surgery Statistics Report. (2023, September 26). American Society of Plastic Surgeons. <https://www.plasticsurgery.org/documents/News/Statistics/2022/plastic-surgery-statistics-report-2022.pdf>
4. Troy J, Little A, Kuykendall L, Dayicioglu D. Flap-Mastopexy in Autologous Breast Reconstruction: Timing and Technique. *Ann Plast Surg.*, 2018 Apr.; 80(4): 328-32.
5. Janis, J. *Essentials of Plastic Surgery*. Third version, 2023.
6. Tapp M, Singh R, Ulm JP, Herrera FA. Association of increased body mass index and resection weights on the safety of reduction mammoplasty in the adolescent population. *J Plast Reconstr Aesthet Surg.*, 2019 Jul; 72(7): 1219-1243.
7. Khavanin, N., Jordan, S. W., Rambachan, A., & Kim, J. Y. S. A Systematic Review of Single-Stage Augmentation-Mastopexy. *Plastic and Reconstructive Surgery*, 2014; 134(5): 922–931.
8. Fabie A, Delay E, Chavoïn JP, Soulhiard F, Seguin P Plastic surgery application in artistic studies of breast cosmetic. *Ann Chir Plast Esthet*, 2006; 51(2): 142–150.
9. Westreich M Anthropomorphic breast measurement: protocol and results in 50 women with aesthetically perfect breasts and clinical application. *Plast Reconstr Surg.*, 1997; 100(2): 468–479.
10. Liu YJ, Thomson JG Ideal anthropomorphic values of the female breast: correlation of pluralistic aesthetic evaluations with objective measurements. *Ann Plast Surg.*, 2011; 67(1): 7–11.
11. Khan HA, Bayat A. A geometric method for nipple localization. *Can J Plast Surg.*, 2008; 16(1): 45–47.
12. Mallucci P, Branford OA Concepts in aesthetic breast dimensions: analysis of the ideal breast. *J Plast Reconstr Aesthet Surg.*, 2012; 65(1): 8–16.
13. Yilmaz, K. B. A Modified Superior Pedicle Mastopexy Technique With an Inferolateral-Based Auto Augmentation Flap. *Aesthetic Plastic Surgery*, 2021.
14. Zavrides, H. The Classic Pitanguy Technique and Its Modifications in Mammoplasty. *Annals of Plastic Surgery*, 2017; 79(5): 433–437.