Mastopexy: a means to correct breast ptosis

Abstract

The demand for aesthetic procedures is at an all-time high, and nowhere is this more prevalent than in the practice of mammoplasties (i.e., procedures to modify shapes and sizes of breasts), particularly mastopexies (commonly known as breast-lift surgeries). This clinical article introduces different types of ptosis (i.e., breast sagging or uneveness) and maxtopexies, delving further into the relationship between them. The management of ptosis recurrence is also discussed.

Key words

▸ Mastopexy ▸ Breast-lift surgery ▸ Ptosis ▸ The Regnault system

The demand for aesthetic surgeries and procedures is at an all-time high, and with the persistent and significant influence of social media, is likely to continue rising. In its most recent global survey, the International Society of Aesthetic Plastic Surgery (ISAPS) announced an 19.3% overall increase in procedures performed by plastic surgeons in 2021, with more than 12.8 million surgical, and 17.5 million non-surgical, procedures performed worldwide (ISAPS, 2023). Of these, breast surgeries in both men and women were some of the most frequently performed, with breast augmentation and gynecomastia (i.e., overdevelopment of breast tissues in males) correction being the most prevalent. However, mastopexy—more commonly known as a 'breast lift'—was revealed to be the fifth most common surgical procedure for women, with a remarkable 31.4% increase in occurrence noted between 2020 and 2021 (ISAPS, 2023).

Mastopexies are usually performed to address breast ptosis (i.e., sagging or unevenness), whether that be due to post-partum milk gland diminishment or volume loss following menopause or massive weight loss. Ptosis can also be congenital or acquired—the first being caused by a variety of genetic factors, and the latter the result of mastectomy. Breast ptosis can pose a significant psychological burden to patients: Ibrahim et al (2015) determined the burden of living with breast ptosis requiring surgical intervention, demonstrating that the health burden of living with breast ptosis was comparable with that of breast hypertrophy, uni- and bilateral mastectomy, and cleft lip and palate. Furthermore, given the option to undergo mastopexy as a means to treat breast ptosis, Ibrahim et al's (2015) study population reported being willing to risk a hypothetical 10% chance of death and trade 4.6 years of life. Therefore, careful selection of the correct mastopexy technique and developing optimal pre- and post-intervention care, incorporating psychological input and perioperative management of patient expectations, is critical to address the psychosocial impact, alongside the physical manifestations, of breast ptosis.

FRANCESCA RAMADAN

Freelance healthcare writer

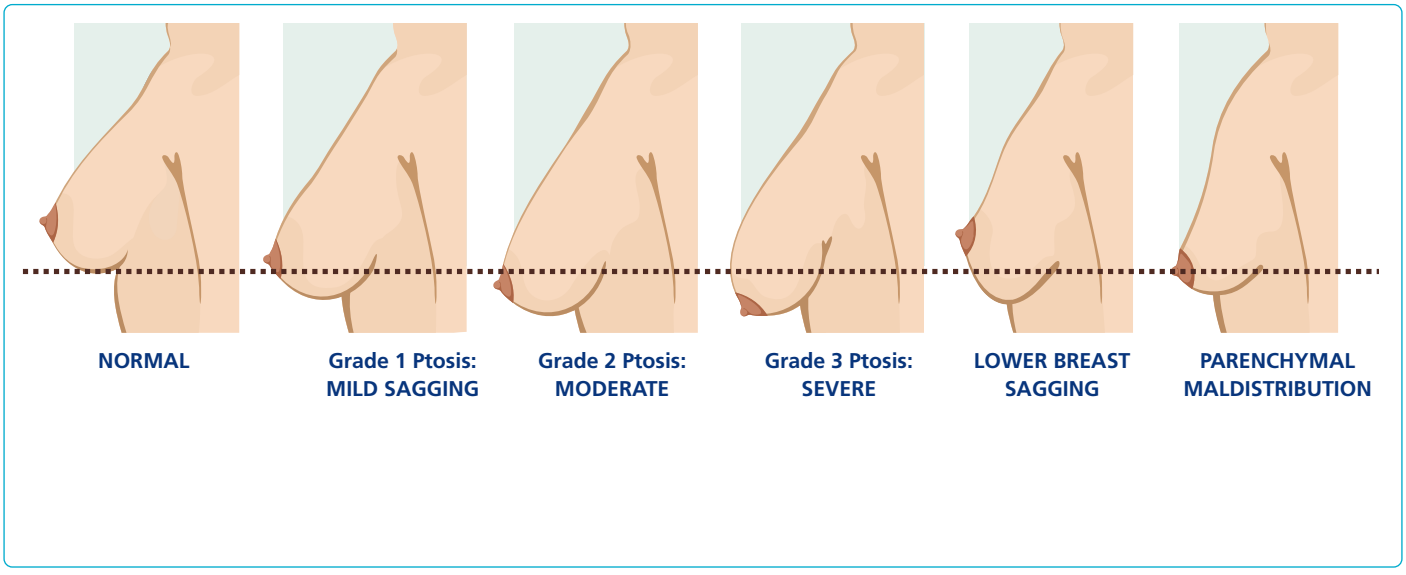
E: francescaramadan@gmail.com

> *» The causation or presence of breast ptosis is related to skin elasticity, ductal structures and supporting ligaments «*

Mastopexy as a treatment modality

The causation or presence of breast ptosis is related to skin elasticity, ductal structures and supporting ligaments. Generally speaking, as breast volume enlarges, the supporting structures of the breast are rendered ineffective, causing skin redundancy (Martinez and Chung, 2022). Ptosis can also occur when volume decreases (Martinez and Chung, 2022). A number of factors contribute to changes in volume: while many incidences of breast ptosis can be linked to ageing, pregnancy or weight loss, it can also be developmental, caused by naturally poor skin elasticity and weak Cooper's ligaments, often in conjunction with heavier, denser breast tissue (El Harrak et al, 2021). Classification of the type and degree of breast ptosis can be helpful

© 2023 MA Healthcare Ltd



The Regnault system's description of the types and grades of ptosis, illustrated.

Box 1. The Regnault system's description of the types and grades of ptosis

- **Grade 1 ptosis (A)**
  The nipple is situated within 1 cm of the IMF and is above the lower pole of the breast
- Grade 2 ptosis (B)
  The nipple is 1–3 cm below the IMF but is still located above the lowest point of the breast
- Grade 3 ptosis (c)
  The nipple is more than 3 cm below the IMF and is situated at the lowest part of the breast

(Information summarised from El Harrak et al, 2021)

in determining the best surgical course. Currently, the Regnault classification system is the most frequently used, although alternative classification modalities and treatment algorithms do exist (Kirwan, 2002). The Regnault system is predicated on the relationship of the nipple to the inframammary fold (IMF). *Box 1* and *Figure 1* explain and illustrate the categories of this system.

A mastopexy is a procedure intended to reshape the breasts by modifying their size, contour and elevation, with the aim of achieving a firmer, higher and more aesthetically pleasing shape without changing breast volume (Ibrahim et al, 2015). Excess skin is removed to tighten the surrounding tissue and to reshape and support the new breast contour, with internal breast tissue also frequently reshaped. The challenge lies in choosing the right technique to minimise scarring, maximise the correction of ptosis and slow its recurrence over time (Stevens et al, 2014). There are a variety of techniques that fall under the label of mastopexy, but

» *A mastopexy is a procedure intended to reshape the breasts by modifying their size, contour and elevation, with the aim of achieving a firmer, higher and more aesthetically pleasing shape without changing breast volume* «

© 2023 MA Healthcare Ltd

AdobeStock/Sean Nel

Breast ptosis is closely related to skin elasticity, ductal structures and supporting ligaments. Mastopexies, commonly known as breast lift surguries, are on the rise in recent years.

three essential types remain. Each of these types come with several variations, which are employed based on the degree of ptosis and tissue quality:

- **Periareolar mastopexy** is indicated for patients with mild or moderate ptosis or nipple asymmetry, with little lower pole skin redundancy, who possess reasonable skin and parenchyma quality. This technique is mainly used to reposition the nipple by approximately 2 cm at most;
- **Vertical mastopexy** is indicated for any degree of ptosis. The traditional vertical mastopexy has evolved into the current techniques, namely the short-scar periareolar inferior pedicle reduction mammaplasty by Hammond and the Hall–Findlay mastopexy;
- **Inverted-T mastopexy** is indicated for patients with severe ptosis (because they have an excessive skin envelope to parenchyma ratio) or patients with fatty parenchyma or poor skin quality. The most popular skin incision approach has been the traditional Wise pattern. Although the inverted-T mastopexy has a considerable scar burden, it is widely used because of the predictable results and surgeons' familiarity with the procedure, due to its use in reduction mammoplasty (Martinez and Chung, 2022).

Addressing and managing recurrent ptosis

Like any surgical procedure, mastopexy is associated with a range of side effects, including haematoma, infection, nipple necrosis, malposition and deformity

» Inclusion of biological or synthetic mesh is a recurring theme at plastic surgery meetings and in publications, but evidence on their efficacy is conflicting: while mesh and muscular slings showed promise in providing additional support over standard techniques in one systematic review, another found that implanted mesh does not prevent recurrent ptosis and bottoming out after mastopexy «

© 2023 MA Healthcare Ltd

(Martinez and Chung, 2022); of these, recurrent ptosis is responsible for many revisions and reoperations. In a study evaluating recurrence of breast ptosis after mastopexy, it was found that the percentage loss of the nipple-areola complex lift 1 year after surgery compared to the immediate post-operative time ranged from 12.5–41.7%, with an average value of 27.5% (Sisti et al, 2022). This is significant, as Sisti et al's (2022) participants had undergone maxtopexies performed only using a Wise pattern. Other techniques, such as the periareolar technique, which had the lowest satisfaction rate among surgeons and had the highest revision rate (50%) compared to inverted-T and vertical mastopexy (21% and 29.9%, respectively) (Rohrich et al, 2006), are likely to display even greater reoccurrence rates.

Mesh plays a role in combating ptosis recurrence. Meshes are three-dimensional reinforcement structures, typically made from biocompatible synthetic materials, that are implanted inside the breast as a way to support and provide reinforcement to maintain the lift achieved by the mastopexy. Inclusion of biological or synthetic mesh is a recurring theme at plastic surgery meetings and in publications (Swanson, 2022), but evidence on their efficacy is conflicting: while mesh and muscular slings showed promise in providing additional support over standard techniques in one systematic review (Wagner et al, 2022), another found that implanted mesh does not prevent recurrent ptosis and bottoming out after mastopexy (Atiyeh et al, 2022). Generally, mesh may not be superior to described techniques with superior pedicle and hammocks or 'balcony' flaps (Atiyeh et al, 2022). No significant change in nipple level between 1 and 10 years was found in in women treated with vertical mastopexy and, in patients treated with vertical mastopexy and augmentation/mastopexy without mesh, the lower pole descended only about 1 cm on average (Swanson, 2022). Most importantly, neither mesh nor acellular dermal matrix is approved by the US Food and Drug Administration for breast surgery (Swanson, 2022). The Association of Breast Surgery and the British Association of Plastic, Reconstructive and Aesthetic Surgeons recommends careful patient selection and performing mesh-assisted mammaplasty with caution in high-risk groups, such as current smokers, patients who have had previous breast radiotherapy, and those with a high BMI (Potter et al, 2018).

CPD reflective questions

- What might be some challenges when it comes to discussing expectations for mastopexy surgeries?
- How can healthcare professionals provide more appropriate psychological support for patients seeking mastopexies?
- With a wide variety of cosmetic surgeries available, patients may wish to seek other types of treatment (e.g., Botulinum toxin) along with mastopexy. How far apart should surgeries be scheduled? Would there be any medical complications if surgeries are too closely scheduled?

Key points

- A mastopexy is a procedure intended to reshape the breasts by modifying their size, contour and elevation, with the aim of achieving a firmer, higher and more aesthetically pleasing shape without changing breast volume.
- Ptosis refers to the sagging or the uneveness of breasts.
- Like any surgical procedure, mastopexy is associated with a range of side effects, including haematoma, infection, nipple necrosis, malposition and deformity. Among these, recurrent ptosis is responsible for many revisions and reoperations. Mesh plays a role in combating ptosis recurrence.

Conclusion

There are a range of treatment modalities available to address patients' presentations, priorities and needs in instances of breast ptosis. However, whichever mastopexy technique is used, individualisation must be at the core of any care provided. Additionally, any treatment provided should not merely be limited to a patient's physical presentation, but must address the impact of ptosis on the patient's psychosocial and sexual functioning as well as their quality of life. Establishing realistic expectations of surgical outcomes and evaluating ptosis recurrence, therefore, are crucial steps to take. JAN

References

Atiyeh B, Ghieh F, Chahine F et al. Ptosis and bottoming out following mastopexy and reduction mammoplasty. Is synthetic mesh internal breast support the solution? A systematic review of the literature. Aesth Plast Surg. 2022;46:25–34. https://doi.org/10.1007/s00266-021-02398-x

El Harrak S, Jaadi D, Sqalli H et al. Mastopexy: management of breast ptosis and complications. SAS J Surg. 2021;7(10):590–595. https://doi.org/10.36347/sasjs.2021.v07i10.015

Ibrahim AM, Sinno HH, Lzadpanah A et al. Mastopexy for breast ptosis: utility outcomes of population preferences. Plast Surg. 2015;23(2):103–107. https://doi.org/10.1177/229255031502300210

International Society of Aesthetic Plastic Surgery. Global Survey 2021. 2023. https://www.isaps.org/discover/about-isaps/global-statistics/reports-and-press-releases/global-survey-2021-full-report-and-press-releases/ (accessed 20 March 2023)

Kirwan L. A Classification and algorithm for treatment of breast

© 2023 MA Healthcare Ltd

ptosis. Aesth Surg J. 2002;22(4):355–363. https://doi.org/10.1067/maj.2002.126746

Martinez AA, Chung S. Breast ptosis. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2022

Potter S, MacKenzie M, Blazeby JM. Does the addition of mesh improve outcomes in implant based breast reconstruction after mastectomy for breast cancer? BMJ. 2018;362:k2607. https://doi.org/10.1136/bmj.k2607

Rohrich RJ, Gosman AA, Brown SA, Reisch J. Mastopexy preferences: a survey of board-certified plastic surgeons. Plast Reconstr Surg. 2006;118(7):1631–1638. https://doi.org/10.1097/01.prs.0000248397.83578.aa

Sisti A, Dalfino G, Pica Alfieri E et al. Recurrence of breast ptosis after mastopexy—a prospective pilot study. Acta Chir Plast. 2022;64(1):18–22. https://doi.org/10.48095/ccachp202218. PMID: 35397776.

Stevens WG, Van Pelt AE, Przybyla AM. Part VI, Chapter 54: mastopexy and mastopexy/augmentation. In: Grabb and Smith's Plastic Surgery, 7th ed. Eds: Thorne CH, Chung KC, Gosain AK et al. Philadelphia (PA): 2014

Swanson E. Does absorbable mesh prevent recurrent ptosis after mastopexy? Aesth Plast Surg. 2022. https://doi.org/10.1007/s00266-022-03124-x

Wagner RD, Lisiecki JL, Chiodo MV, Rohrich RJ. Longevity of ptosis correction in mastopexy and reduction mammaplasty: a systematic review of techniques. JPRAS Open. 2022;34:1–9. https://doi.org/10.1016/j.jpra.2022.05.003

Journal of
AESTHETIC
NURSING

Would you like to see your article published in the Journal of Aesthetic Nursing?

Send your clinical, professional and practice management ideas to the editor or tweet us @JAestheticNurse
Email: jan@markallengroup.com

© 2023 MA Healthcare Ltd