

Comma-Shaped Incision for Reduction Mammoplasty and Mastopexy

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Objective: Various skin incision methods have been reported for reduction mammoplasty and mastopexy. This report describes a new incision method that may improve on conventional methods, particularly with respect to prevention of hypertrophic scars.

Methods: We developed a comma-shaped incision method that results in fewer scars and less strain on the suture line. We then applied this new method to two cases, namely, one case of breast reduction and one case of breast fixation.

Results: In both cases, we achieved good results. There was no scar at the inframammary fold, and no hypertrophic scar formation. All scars were within the breast area and were not in contact with the brassiere wire; hence, there was less pain after the operation.

Conclusions: We developed a new incision method for reduction mammoplasty and mastopexy. (J Nippon Med Sch 2021; 88: 258–261)

Key words: comma-shaped incision, reduction mammoplasty, mastopexy, hypertrophic scar, interclavicular jugular notch

Introduction

Although various skin incision methods have been reported for reduction mammoplasty and mastopexy, common designs such as the reverse-T, vertical, periareolar, inframammary, and oblique incisions are usually selected. We developed a new method that improves on the oblique incision by making the scar shorter and reducing the risk of hypertrophic scar formation.

Methods

Operative Technique

Our incision method is shown in a schema of the left breast (Fig. 1). The incision design has a “comma” shape. It starts from the nipple, proceeds toward the median line, and then travels down diagonally toward the lateral side. Ultimately, it becomes a gradual S-shaped line. If we categorize it in relation to conventional designs, it resembles an oblique incision.

Case Presentation 1: Reduction Mammoplasty (Fig. 2)

Case 1 was a 21-year-old woman who underwent breast reduction because her large breasts resulted in neck pain. A new nipple was drawn at 20 cm below the

interclavicular jugular notch. Mammary gland tissue was removed, mainly from the D zone (201 g from the right breast and 197 g from the left breast). The blood supply of the nipple-areolar complex (NAC) was mainly dependent on the superomedial pedicle. The surgery was completed by using sutures of our design.

Case Presentation 2: Mastopexy (Fig. 3)

Case 2 was a 53-year-old woman in whom a tissue expander had been inserted after a right breast tumor had been removed 6 months earlier. We simultaneously replaced the implant and performed a left mastopexy using a comma-shaped incision. A new nipple was created at 19 cm from the interclavicular jugular notch. The skin incision was made as designed and closed without removal of mammary gland tissue.

Results

Both patients had good results after surgery, and no post-operative complications. There was less scarring at the inframammary fold, and no hypertrophic scar formation. The breast form was good, with less deformation and no sensory insensitivity at the nipple. The inside curve of

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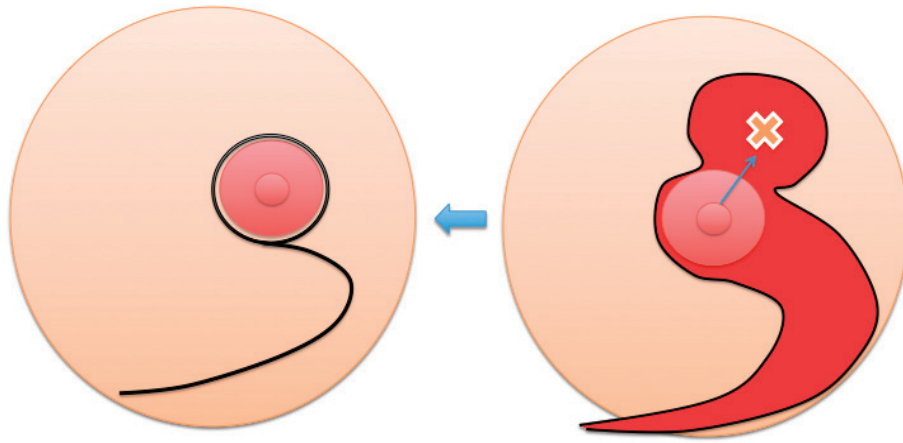


Fig. 1 Operative design
The figure shows a large gradual S-shaped incision similar to a comma.

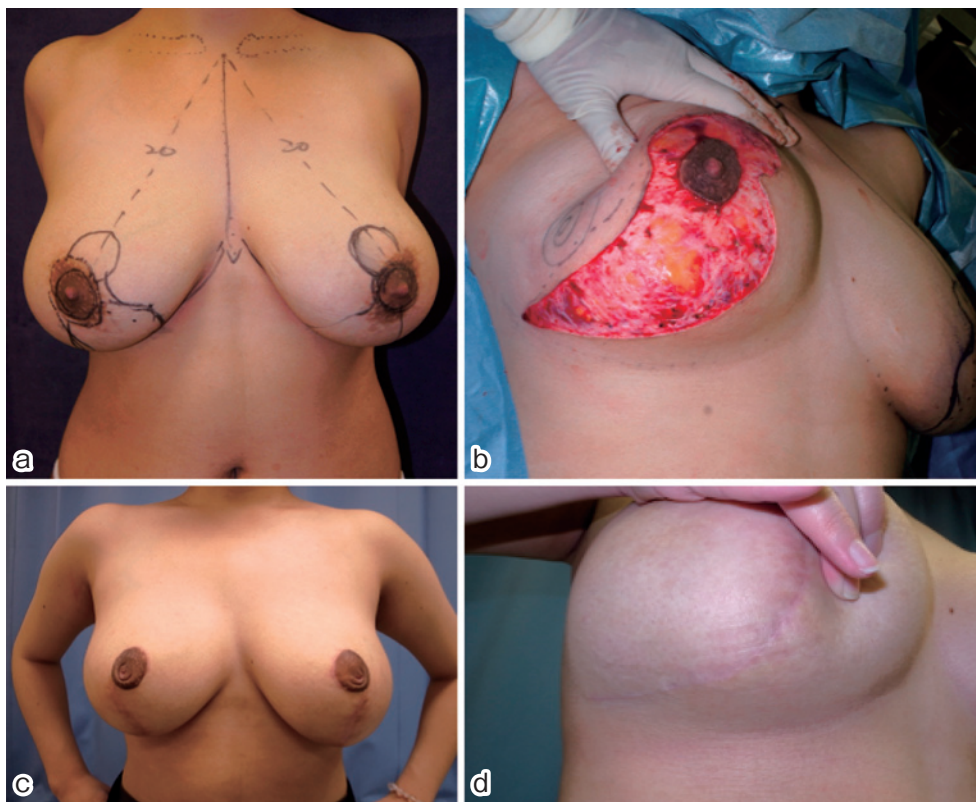


Fig. 2 Case 1: Comma-shaped incision for reduction mammoplasty
(a) Preoperative design; (b) the breast was de-epithelized as designed; (c, d) one-year postoperative progress.

the breast was well maintained, and less scarring was present under the inframammary fold. All scars were within the breast and did not touch the brassiere wire; hence, there was less pain after the operation.

Discussion

Various incision methods have been reported for reduction mammoplasty and mastopexy. "Novel" techniques described since the 1970s were hardly new¹. Apart from

subtle variations, all the known incision patterns—inflamammary², inverted-T^{3,4}, vertical⁵, lateral⁶, and peri-areolar⁷—were first described in earlier decades.

The features of our procedure are as follows (Fig. 4). Suturing is completed within the breast, and there is no scar at the inframammary fold. Similar to the oblique and vertical incision methods, our method results in less direct tension, because the overall suture line travels toward the lateral caudal side and is parallel to the vector

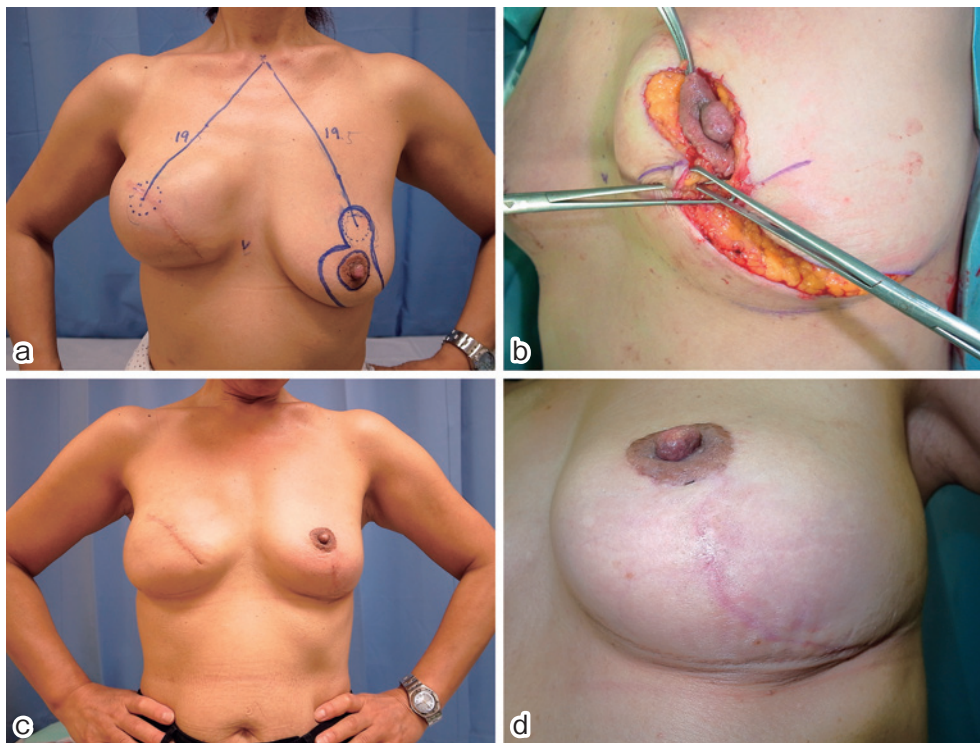


Fig. 3 Case 2: Comma-shaped incision for mastopexy
 (a) Preoperative design; (b) suturing performed according to our design; (c, d) 8-month postoperative progress.

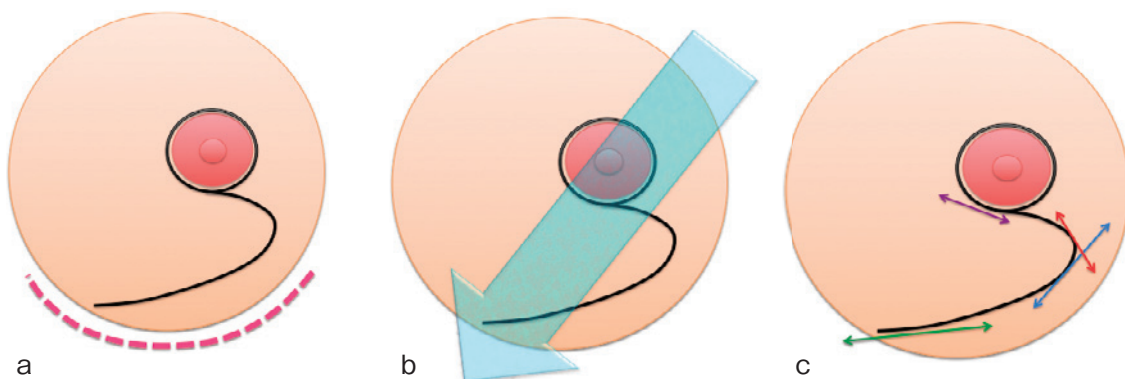


Fig. 4 Features of our procedure
 (a) There is no scar at the inframammary line; (b) the vector of the entire incision line points obliquely downward; (c) the tangent of the suture line is in a disoriented direction, and the tension is dispersed.

along which the breast is pulled by gravity. Because of the reduced tension, hypertrophic scar formation is lessened^{8,9}. We believe that this explains why the vertical line under the areola is not very noticeable when a reverse-T-type incision is used. Moreover, because the suture line consists of only curved lines, which are shaped like a big "S", it disperses the tension over a wide area. Additional incisions, correction of a dog-ear, and small adjustments during surgery are easily performed. Similar to a camera diaphragm, it is easy to adjust when suturing the areola

as predesigned. The aim is to leave no internal scars. Even in breast reduction, the outside of the breast is mainly incised, and blood supply from the internal mammary artery is retained, making it less likely for the NAC to develop necrosis.

The present incision technique is also indicated for removal of foreign-body granulomas. In many cases, granulomas are not equipped with feeding vessels, and enucleation within the shortest distance results in the least bleeding. Hence, our procedure does not affect

blood flow to the NAC and allows adequate visualization for foreign-body removal.

Conclusions

We developed a new incision method for reduction mammoplasty and mastopexy. When a comma-shaped incision is used, no suture is placed under the inframammary fold. This is a short-scar technique, and the gradual curve of the incision will likely prevent hypertrophic scar formation. It is a suitable option for use in reduction mammoplasty and mastopexy.

Conflict of Interest: None of the authors has a financial interest in any of the products, devices, or drugs mentioned in this manuscript.

References

1. Swanson E. A retrospective photometric study of 82 published reports of mastopexy and breast reduction. *Plast Reconstr Surg.* 2011 Dec;128(6):1282–301.
2. Passot R. La correction esthétique du prolapsus mammaire par le procédé de la transposition du mamelon [Aesthetic correction of breast prolapse through the process of nipple transposition]. *PresseMéd.* 1925;33:317–8. French.
3. Kraske H. Die Operation der atrophischen und hypertrophischen Hängebrust [The operation of atrophic and hypertrophied sagging breasts]. *Münch Med Wschr.* 1923;60: 672. German.
4. Lexer E. Zur operation der Mammahypertrophie und der Hängebrust [Zur operation der Mammahypertrophie und

- der Hängebrust]. *Dtsch Med Wschr.* 1925;51:26. German.
5. Dartigues L. Esthétique Mammaire: Traitement Chirurgical du prolapsus mammaire [Breast Aesthetics: Surgical Treatment of Breast Prolapse]. *Arch Franco-BelgesChir.* 1925;(28):313–28. French.
6. Holländer E. Die operation der mammahypertrophie und der hängebrust [The operation of mammary hypertrophy and sagging breasts]. *DMW-Deutsche Medizinische Wochenschrift.* 1924;50(41):1400–2. German.
7. Bartels RJ, Strickland DM, Douglas WM. A new mastopexy operation for mild or moderate breast ptosis. *Plast Reconstr Surg.* 1976 Jun;57(6):687–91.
8. Ogawa R, Akaishi S, Kuribayashi S, Miyashita T. Keloids and hypertrophic scars can now be cured completely: recent progress in our understanding of the pathogenesis of keloids and hypertrophic scars and the most promising current therapeutic strategy. *J Nippon Med Sch.* 2016;83 (2):46–53.
9. Ogawa R, Okai K, Tokumura F, et al. The relationship between skin stretching/contraction and pathologic scarring: the important role of mechanical forces in keloid generation. *Wound Repair Regen.* 2012;20(2):149–57.

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