Comma-shaped incision for reduction mammoplasty and mastopexy

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Abstract

Objective: Various skin incision methods have been reported for reduction mammoplasty and mastopexy. The aim of our study was to develop a better method by improving conventional methods, with particular focus on the prevention of hypertrophic scars.

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

Results: In both cases, we achieved good results. There was no scar at the inframammary fold, and no hypertrophic scar was formed. 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, and it is a suitable option for use in these procedures.

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 type, vertical type, periareolar type, inframammary type and oblique type, are often chosen for use. We developed a new method by enhancing the oblique type of incision to make the scar shorter, and to reduce the risk of hypertrophic scar formation.

Method

Operative technique

Our incision method is shown in a schema of the left breast (Fig. 1). The incision design is in the shape of a ‘comma’, which starts from the nipple, heads towards the median line and then travels down diagonally towards the lateral side. In the end, it becomes a gradual S-shaped line. If we categorise it into conventional designs, it is similar to the oblique type of incision.

Case presentation 1: Reduction mammoplasty (Fig. 2)

Case 1 is a 21-year-old female who underwent breast reduction because her breasts were so big that she had a stiff neck. 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 using suturing as per our design.

Case presentation 2: Mastopexy (Fig. 3)

Case 2 is a 53-year-old female, in whom a tissue expander had been inserted after a right breast tumour had been removed six 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. Skin incision was performed as designed and closed without mammary gland tissue removal.

Results

Both patients exhibited good results after surgery, and they had no postoperative complications. There was less scar at the inframammary fold, and no hypertrophic scar was formed. The breast form was good with less deformation or sensory insensitivity at the nipple. The inside curve of the breast was well maintained, and less scar was observed 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

Different incision methods have been reported for reduction mammoplasty and mastopexy. The 'novel' techniques published since the 1970s are barely new. Apart from subtle variations, all the known incision patterns, inframammary, inverted-T, vertical, lateral, and periareolar, were published in previous 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, because the overall suture line travels towards the lateral caudal side and is parallel to the vector along which the breast is pulled down by gravity, the direct tension is relatively less in our method. Because of less tension, a decrease in hypertrophic scar formation is expected. We speculate that this is why a vertical line under the areola is not too noticeable in the case of reverse-T-type incisions. Moreover, because the suture line consists of only curved lines shaped like a big S, it disperses the tension all over. Additional incisions, the correction of a dog-ear and small adjustments during surgery can also be easily conducted. Similar to a diaphragm of camera, 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 NAC to become necrosed.

Furthermore, it is also a good indication for the removal of foreign body granulomas. In many cases, granulomas are not equipped with feeding vessels. Enucleation within the shortest distance results in the least bleeding. Hence, our procedure does not affect the blood flow to NAC and allows adequate visualisation for foreign body removal.

Conclusions

We developed a new incision method for reduction mammoplasty and mastopexy. Using a comma-shaped incision, no suture is placed under the inframammary fold. This is a short-scar technique and is expected to prevent hypertrophic scars due to the gradual curve of the incision. It is a suitable option for use in reduction mammoplasty and mastopexy procedures.

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Figure legends
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.

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.
Figure 1
Figure 2

ab
cd
Figure 3

ab
cd
Figure 4  a, b, c