A Sharp Cutting Liposuction Cannula for Gynecomastia

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Liposuction is often used for the treatment of gynecomastia. Blunt liposuction cannulas can remove the fat but are not very effective in fibrous breast tissue, which requires open excision. Ultrasound-assisted lipoplasty has been advocated for gynecomastia because it effectively removes the fat from fibrous areas. An alternative treatment is a sharp cutting liposuction cannula that easily penetrates and removes the fibrous breast tissue along with the fatty component. The early experience of 22 surgeons who used this cannula in 88 cases of gynecomastia is reported. For 19 of the 22 surgeons, liposuction with sharp cutting cannulas alone gave a satisfactory result in 81% of their patients.

Gynecomastia can have an adverse effect on body image, causing some men to seek treatment. Direct excision alone may be avoided because of scars and the potential for contour irregularity, hematoma, and seroma formation. Typical blunt liposuction cannulas can remove fat from breasts that are not very fibrous, but they are not useful for removal of the fibrous breast tissue core, which then requires open excision. To avoid the need for open excision after liposuction, Samdal et al. used a cannula with a circular knife tip, which cut multiple cylinders of glandular tissue that were aspirated into a syringe. Modified blunt liposuction cannulas introduced by Becker and Rosenberg remove at least some breast parenchyma and fibrous tissue. The 2.3 mm Rosenberg cannula is thin and tapered enough to penetrate fibrous breast tissue, but its small size and blunt openings make removal difficult and time-consuming. Ultrasound-assisted lipoplasty (UAL) has been used for gynecomastia because it penetrates fibrous tissue to remove fat, but there is no report of how much fibrous breast tissue is actually removed by the applied ultrasound energy. The finding of increased mammogram density after UAL strongly suggests limited fibrous tissue removal. Compared with liposuction, UAL requires larger incisions and costly equipment and has risks of seroma and skin burns.

As an alternative to blunt cannulas and UAL, a liposuction cannula was designed with (1) a tip that is sharp and pointed so it is very easy to push into fibrous breast tissue and (2) edges of the openings that are sharpened to cut strips of fibrous tissue and breast parenchyma as the cannula slides back and forth (Figure 1). This sharp cutting cannula (Grafs Medical, Costa Mesa, CA) effectively penetrates and removes fibrous breast tissue along with the fat.
Figure 1. Cannula with sharp pointed tip and sharpened edges on the openings.

Figure 2. The surgeon uses one hand to grasp and compress the breast tissue while the other hand will move the cannula through it.

Table. Survey questions on the use of sharp cutting liposuction cannulas for treatment of gynecomastia

<table>
<thead>
<tr>
<th>Question</th>
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<tbody>
<tr>
<td>Number of cases</td>
</tr>
<tr>
<td>Patient ages</td>
</tr>
<tr>
<td>Amount removed, if known</td>
</tr>
<tr>
<td>Number of cases where liposuction alone was used</td>
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<tr>
<td>Number of cases where liposuction plus open excision was needed</td>
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<tr>
<td>Number subareolar only</td>
</tr>
<tr>
<td>Number other</td>
</tr>
<tr>
<td>Number of hematomas or excessive bleeding</td>
</tr>
<tr>
<td>Number in cases of liposuction alone</td>
</tr>
<tr>
<td>Number in cases of liposuction plus open excision</td>
</tr>
<tr>
<td>Do you grasp breast tissue and lift from chest wall during liposuction?</td>
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<tr>
<td>Do you set patient upright to assess final contour?</td>
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</tbody>
</table>

Technique

The patient is marked before surgery while standing with arms akimbo and the pectoralis muscle maximally contracted. A superwet infiltration technique is used (0.5 to 1.0 ml infiltrate:1 ml removal). The solution contains 1 ml of 1:1000 epinephrine and 50 ml 1% lidocaine (Xylocaine®) with epinephrine in 1000 ml lactated Ringer’s solution. Two stab incisions are made at the periphery of the breast tissue, usually at the inframammary fold. The breast tissue is grasped and compressed with one hand while the other hand slides the cannula back and forth (Figure 2). Because the cannula tip is sharp, it is important to concentrate on staying tangential to the chest wall to avoid penetration. The smallest diameter cannula (3.0 mm) is used first to make channels in the fibrous breast tissue. Then it is usual to progress to the larger cannulas (3.7 and 4.6 mm) for more aggressive fibrous breast tissue removal. The sharp cutting cannulas can also be used to release the inframammary fold when prominent. It is sometimes helpful to set patients upright to assess the final contour before concluding the procedure. A compressive vest is worn 4 weeks after surgery.

Methods

The other plastic surgeons who had these sharp cutting liposuction cannulas were identified by the manufacturer and were asked to contribute their cases for this report (see the Table for the questions included in the survey). Of 26 surgeons contacted by writing or telephone, four did not reply, and two had not yet used the cannula.
Data on consecutive patients with gynecomastia treated by liposuction with sharp cutting cannulas were collected from the two authors and the 20 survey respondents. Each plastic surgeon practiced independently, had no financial interest in the cannula, and had from one to 12 cases. A total of 88 patients undergoing gynecomastia are reported, with an average age of 30 and a range of 12 to 67 years.

Results

In all cases, the sharp-pointed, cutting-edged cannulas penetrated and moved easily through fibrous breast tissue, which came out in thin strips (Figure 3). Although no surgeon did a side-by-side comparison to other liposuction cannulas or UAL, several who had previous experience with the Rosenberg cannula reported that these were much faster and more effective. Pathologic study confirmed the presence of breast parenchyma and fibrous tissue in the aspirate of several patients. There were no hematomas, seromas, injuries to chest structures, or injuries to surgeons. Significant skin shrinkage was noted in some cases (Figure 4).

Liposuction with these sharp cutting cannulas alone corrected gynecomastia to the surgeons’ satisfaction (Figure 5) in 57 of the 88 cases (65%). In four early patients, liposuction was performed twice to achieve the desired result. After liposuction with the sharp cutting cannulas, surgeons elected to perform supplemental open excision in 31 of the 88 cases (35%). Most excisions were described as limited to the subareolar area only. Several surgeons noted that the residual breast tissue they excised was significantly smaller than in the past when they used blunt liposuction cannulas. Channels from the sharp cutting cannulas were observed throughout the fibrous breast specimens, indicating extensive penetration.

Discussion

On the basis of the authors’ personal experience correcting gynecomastia with the sharp cutting cannulas alone, it was surprising to find that surgeons elected to perform supplemental open excisions in 35% of the patients in this series. In some cases surgeons reported that they were very cautious and conservative the first time they used this new cannula that was sharp and cutting. On the
basis of their previous experience with blunt liposuction cannulas, they were not confident that these new cannulas would remove the fibrous breast tissue component and performed an open excision just to be sure of sufficient removal. With experience these surgeons believed they could be more aggressive in future cases and would less often elect supplemental open excision. Also, some surgeons’ cannulas may not have been sharp enough to work at maximal efficiency if the tips were not maintained knife-sharp and protected during handling.

A predominant number of the supplemental open excisions (19 of 31) were performed by the three surgeons who did not grasp the breast and compress it with the other hand during liposuction. These three surgeons corrected gynecomastia with liposuction alone in only 24% of their cases (6 of 25) compared with the other 19 surgeons who were successful with liposuction alone in 81% of their cases (51 of 63). This emphasizes the importance of firmly compressing the fibrous breast tissue onto the sharp cutting cannulas for its removal.

The technique presented here should not be confused with that of Kesselring.13-15 He used a blunt tip cannula with a cutting edge at the opening and widely separated the fat layer from the fascia, thereby creating a large cavity. Seromas beneath the flap and irregular adherence caused his technique to fall into disfavor. The problem was not with his cannula design, but with how it was used. He made no reference to gynecomastia.

**Conclusion**

Sharp cutting liposuction cannulas can effectively remove fibrous breast tissue along with fat in the treatment of gynecomastia. For 19 of 22 surgeons, early experience with this liposuction method satisfactorily corrected gynecomastia in 81% of their patients. As surgeons gain experience and confidence performing liposuction with sharp cutting cannulas, the number of supplemental open excisions should decrease. These cannula tips must be maintained knife-sharp to work efficiently. An important difference in technique compared with liposuction of
only fat is the need to grasp and compress fibrous breast tissue onto the sharp cutting cannulas as they are moved back and forth. ■

References


