

## Abdominal Etching

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**Abstract.** The development of blunt liposuction by Illouz [1] in 1978 ushered in a new era in body sculpting. For the first time it had become possible to dependably remove large amounts of subcutaneous fat and decrease saddlebags and bulges to provide a smoother contour.

Refinements in liposuction techniques have made it possible to dramatically resculpt the subsurface plane and improve body contour virtually from head to toe [2-4].

Mark Gilliland first performed abdominal etching by removing specific grooves of subcutaneous fat to accentuate the appearance of the abdominal musculature [5-8]. We have developed a new cannula for precision etching. This technique has been used in 25 patients with good results and has resulted in only one complication, which was the result of placing one of the horizontal etching lines at the level of the umbilicus. This created an unseemly fold that is best avoided.

**Key words:** Body sculpting—Abdominal etching—Contour improvement—Liposuction—Lipoplasty

Contour improvement by fat removal has undergone a constant refinement, from the initial fat curettage with a uterine curette by Schrudde [9] in 1972 to the description of blunt suction by Illouz in 1978 [10]. The initial problems of bleeding, unpredictable results, and difficult recovery have been overcome with the introduction of new postsurgical pressure garments and local anesthetic methods such as the tumescent technique described by Hunstad [11-13].

These techniques have allowed us to explore new uses for liposuction that were previously taboo such as lower extremity suction for thick ankles [14,15] and superficial

suction for improving the appearance of cellulite and flaccid skin [16]. It is now possible to "sculpt" areas in which an outline of a muscle can be etched to improve the aesthetic results of liposuction.

### Materials and Methods

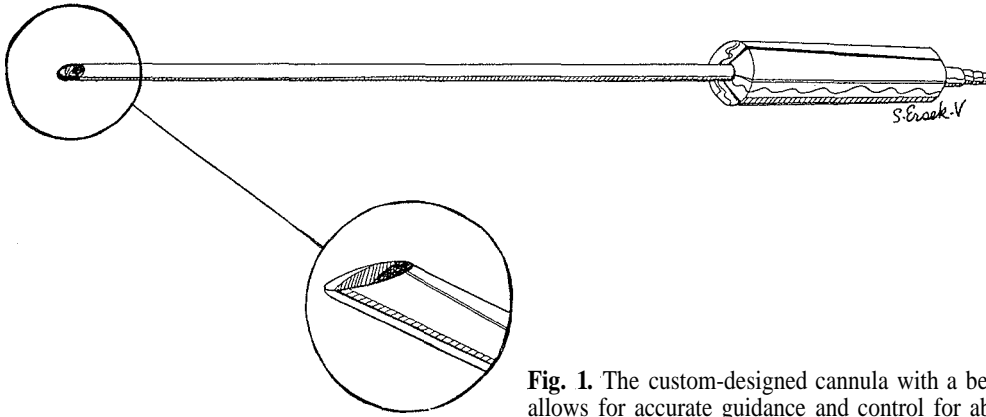
We have custom-designed a suction cannula that is 3 mm in diameter, 35 cm in length, and has a beveled (semi-sharp) tip (Fig. 1). This allows us to accurately guide and control suction in a narrow, superficial plane.

The area to be treated is first marked with the patient standing to precisely place the midline from the xiphoid to the umbilicus. Etching is not applied beneath the umbilicus or at the level of the umbilicus. Then, two horizontal lines are chosen to create two nearly equal, distant planes, by bisecting the vertical line between the xiphoid and the umbilicus. When measuring, we attempt to have the patient flex and bend slightly to correspond to the natural folds of his or her rectus abdominus, if present. If no such folds are discernible, then we will mark these lines in a symmetrical position.

The horizontal line is then marked, and the puncture site through the skin is placed about 5 cm lateral to the extent of the line of the puncture site. The puncture site is placed on the left side for one line and on the right side for the other. After adequate infiltration of two or more liters of 0.18% lidocaine with epinephrine during surgery, liposuction is performed in the usual fashion with 4- or 5-mm diameter cannulas to create a smooth, even contour of the abdomen and flanks. An effort is made to leave about 1 cm of undisturbed superficial subcutaneous fat throughout this area. The approach to the abdomen and flanks is demarcated through incision in the escutcheon.

After this is completed, three additional puncture wounds are created with a stilette or spike: one in the umbilicus superiorly, and one 5 cm beyond the extremes of the planned horizontal lines (Fig. 2). Through these

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**Fig. 1.** The custom-designed cannula with a beveled, semisharp tip that allows for accurate guidance and control for abdominal etching.

puncture sites, our special semisharp, slightly beveled cannula (Fig. 1) is passed in the same channel many times to create a completely defatted groove. A new "etched abdomen is obvious at the end of the procedure.

### Closure

The escutcheon incisions are closed with 5-0 absorbable buried stitches. Those on the abdomen are closed only with Suture Strips [17]. The patient is then placed in a constricting corset with 0.5-in rubber foam pad placed over the etched area to prevent any unexpected folds.

### Complications

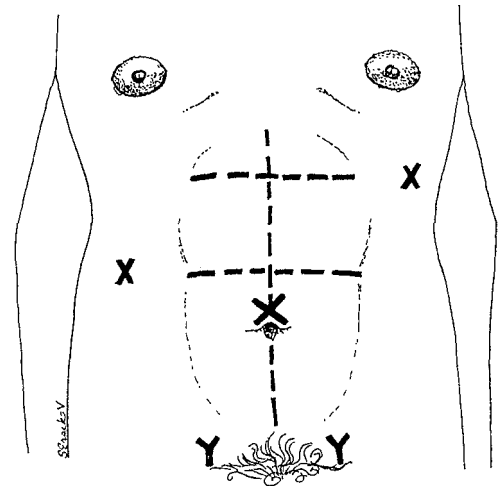
Upon beginning this procedure at the request of the patient, we placed an additional groove at the level of the umbilicus. This turned out to be an exaggerated groove as a result of sitting because this area folds naturally and became folded under the girdle. This resulted in an exaggerated groove that we have been unable to completely correct by repeated fat injections and liposuction.

### Discussion

All of our patients have been very pleased with this procedure. Bodybuilders find this to be of great benefit to their efforts. Some who have well-developed muscles never develop the definition that they desire because of subcutaneous fat. Etching enables them to create the definition that they seek. We recommend avoiding making horizontal lines at or below the umbilicus, even if requested by a patient, because of the exaggerated and artificial appearance of such lines.

### Conclusion

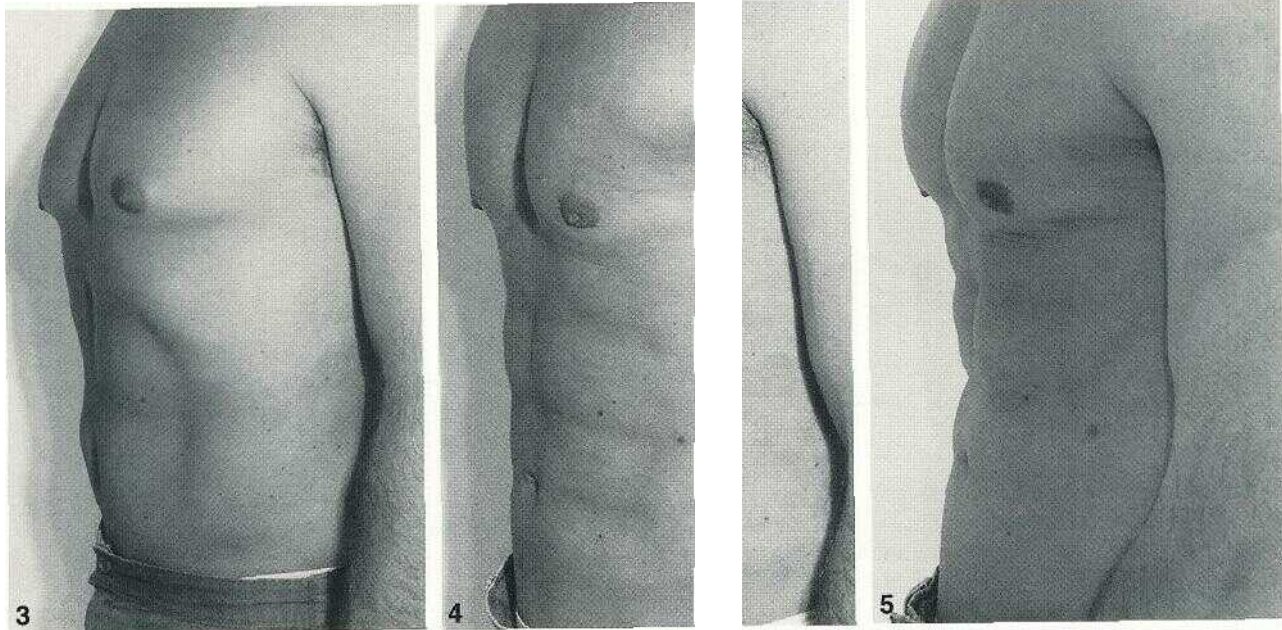
Abdominal etching provides an additional level of body sculpting for the experienced plastic surgeon.



**Fig. 2.** Traditional liposuction of the entire abdomen is completed through the escutcheon incisions at Y, then the sharp beveled cannula is passed through the small incisions at X, and the remaining subcutaneous tissue is "etched" into the marked lines.

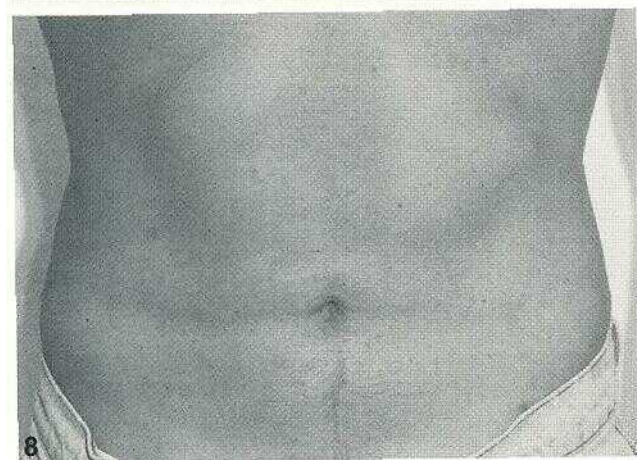
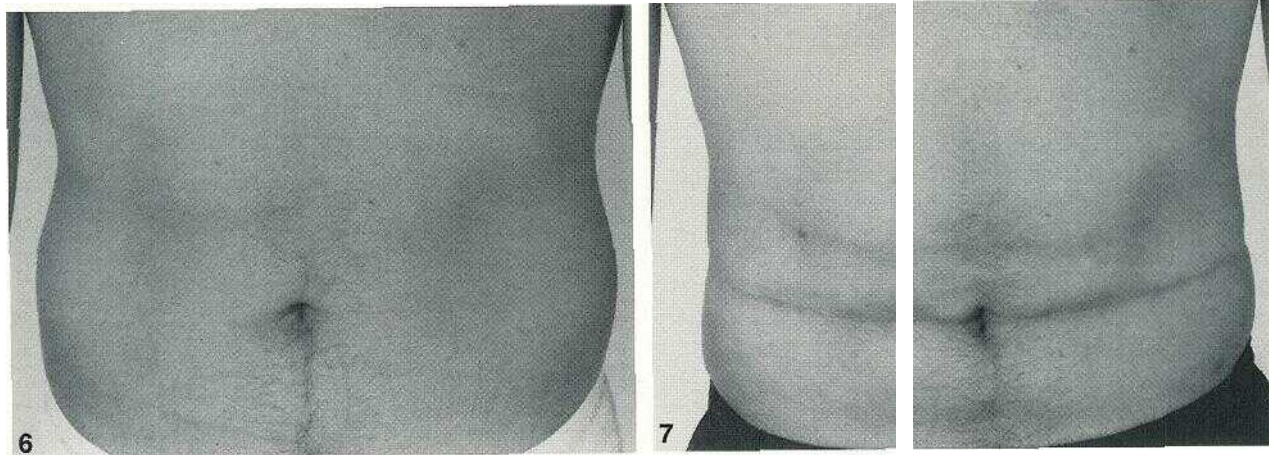
### Clinical Examples

*Patient Number 1.* Patient number 1 is a 30-year-old white male who initially consulted us for liposuction. During the consult he expressed interest in improving definition of his abdominal musculature and seeking treatment of gynecomastia. The patient had 1500 ccs of fat removed from the abdomen and chest in addition to approximately 30 ccs removed by etching. Figure 3 was taken before procedures. Figure 4 shows healing at 3 months after procedure, and Figure 5 shows the patient 8 months after the procedure.



**Fig. 3.** Before treatment. Patient 1 is a 30-year-old male who consulted us for gynecomastia and abdomen suction. **Fig. 4.** Patient 1 seen at 3 months after removal of 1520 ccs of fat by

suction of the abdomen, chest, and from abdominal etching. Incision site for etching is still visible on the left flank. **Fig. 5.** Patient 1 seen 8 months after surgery.



**Fig. 6.** Patient 2 seen before treatment. **Fig. 7.** Patient 2 is seen after removal of 2400 ccs of fat by abdominal suction and abdominal etching that resulted in a groove from a low etching path along the belt line. This was complicated by the compression garment folding over the skin. **Fig. 8.** Final improvement in patient 2 after four more sessions of suction and two autologous fat transplants totaling removal of 30 ccs of fat.

*Patient Number 2.* Patient number 2 is a 29-year-old male airline attendant who came to see us because he was seeking to improve the definition of his abdomen. During the first surgery, abdominal etching and suction totalling removal of 2400 ccs was performed. In Figure 6, the patient is seen before treatment. Figure 7 shows a noticeable groove resulting from a low etching path that was complicated by the compression garment folding over and long periods of sitting. Figure 8 shows final improvement after four more sessions of suction and two autologous fat transplants totalling removal of 30 ccs.

## References

1. Illouz YG: Body Sculpturing by Lipoplasty. New York: Churchill-Livingstone, 1989
2. Kesselring UK: Suction curettage to remove excess fat for body contouring. *Plast Reconstr Surg* 69:572, 1982
3. Schrudde J: Lipexeresis (Liposuction) for body contouring. *Clin Plast Surg* 11: 1984
4. MIadickRA: Circumferential "intermediate" lipoplasty of the legs. *Aesth Plast Surg* 18:165, 1994
5. Gilliland MD: Abdominal etching: Differential liposuction details abdominal musculature. 12th Congressional Meeting of the International Society of Aesthetic Plastic Surgery. Paris, France. September, 1993
6. Gilliland MD: Abdominal etching: Utilizing differential liposuction for detailed skin retraction. 11th Annual Meet-

- ing of the Lipoplasty Society of North America, New Orleans, Louisiana. September, 1993
7. Mentz HA, Gilliland MD, Patronella CK: Abdominal etching: Differential liposuction to detail abdominal musculature. *Aesth Plast Surg* 17:287-290, 1993
  8. Gilliland MD: Abdominal liposculpture. *Lipoplasty Newsl* 12(1):18, 1995
  9. Schrudde J: 1972 Lipexeresis in the correction of local adiposity. First Congress of the International Society of Aesthetic Plastic Surgery, Rio de Janeiro, Abstract book
  10. Illouz YG, French Society of Cosmetic Surgery, June 1979
  11. Hunstad JP: The tumescent technique: An evolution. *Lipoplasty* 2(1):29, 1994
  12. Hunstad JP: Tumescent and syringe liposculpture: A logical partnership. *Aesth Plast Surg* 19:321-333, 1995
  13. Hunstad JP: Liposuction for obesity. *Operative Tech Plastic Reconstruct Surg* 3(2, May):124-131, 1996
  14. Miadick RA: Lipoplasty of the calves and ankles. *Plast Reconstr Surg* 86:83, 1990
  15. Ersek RA, Salisbury AV: Circumferential suction of knees, calves and ankles. *Plast Reconstr Surg* **98:5**, 880-883, 1996
  16. Gasparotti M, Lewis CL, Toledo LS: *Superficial Liposculpture: Manual Of Technique*, New York: Springer-Verlag, 1993
  17. McQuerns-Martin K, Vazquez-Salisbury A: "No drip Lip Strip" *Contemp Surg* August 47(2): 102-103, 1995