Limited-incision plastic surgical procedures have become popular. This is evident in recent articles on rhinoplasty, brow lifting, breast augmentation, and body contouring. Patients requesting abdominal contour procedures have the unique opportunity to have additional procedures performed through their abdominoplasty incision. In addition, the access to this surgical site can facilitate the harvest of autologous fillers and thus may limit additional incisions at potential distant donor sites. Ancillary procedures assisted by abdominoplasty should be considered part of the plastic surgeon's armamentarium. A review of these procedures and techniques is discussed.

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Aesthetic surgery has evolved over the years allowing surgeons to limit noticeable scarring by minimizing the length of the incision and hiding the incision in inconspicuous locations. This is certainly evident in rhinoplasty, as well as endoscopic brow lift surgery which offers smaller incisions for improving the appearance of the upper one third of the face. Furthermore, breast augmentation is being performed endoscopically via the transaxillary approach and through the umbilicus. Even endoscopic abdominoplasty in select patients is an option. These limited incision procedures offer additional choices for patients requesting aesthetic improvement.

Surgery of the face, whether brow lifting, rhinoplasty, or even rhinoplasty, may include the need for soft-tissue augmentation. Fillers used may be autologous or nontotologous (allograft, heterograft, or alloplastic) materials. Although many nontotologous products are available (ie, silicon implants, bovine collagen, gortex, alloderm, irradiated homograft costal cartilage, irradiated fascia, and so forth) these are not always the ideal choice. Nonautologous materials have the benefit of ease of use, decreased surgery time, and no donor site morbidity. But autologous tissues have a low risk for infection and are biocompatible; however, increased surgery time, donor site morbidity, and additional scarring may be a concern. Incisions at distant body sites may be required to harvest autologous fillers (rib cartilage, fat, fascial grafts [temporalis], and dermal fat grafts). Often, harvesting will result in additional scars. However, harvesting of autologous fillers from access incisions for other procedures satisfies some of the disadvantages of using autologous fillers described earlier. It decreases the surgical time to harvest from another site and limits scarring to the incision site used for the other procedure. Donor site morbidity may not be an issue, especially when discarded tissues from other procedures (ie, facelift skin, SMAS, abdominal pannus, or liposuctioned fat) performed in combination are used.

Patients who present for abdominal contouring procedures often want additional procedures performed in conjunction. This may include facial rejuvenation, breast augmentation, or extremity contouring. Body contouring, especially abdominoplasty, can minimize the need for having additional incisions at distant body sites. There are a number of procedures that may be facilitated by exposure during an abdominal contour procedure. They include: (1) breast augmentation through the abdominoplasty incision, (2) harvesting rib cartilage for nasal or other facial augmentation, (3) harvesting autologous filler material including fat, dermal fat grafts, and strips of fascia to augment the face or other contour deformities, and (4) suction-assisted lipectomy of the flanks and thighs.

The ability to offer patients options for other procedures through the abdominoplasty incision is not new. But the opportunity exists for patients undergoing abdominoplasty to have additional procedures either via the abdominoplasty incision or facilitated by having exposure from this incision. Surgeons should consider this approach for future procedures.

Patient Selection

Patient selection and classification for treatment of abdominal contour deformities is similar to those discussed elsewhere. Access for some ancillary procedures are best limited to patients undergoing a full (type 4) abdominoplasty. Patients undergoing a full abdominoplasty have musculoaponeurotic laxity both above and below the umbilicus and severe skin laxity requiring elevation of the abdominal flap to the xyphoid and costal margins bilaterally. Less-invasive abdominal contouring procedures do not provide adequate access for breast augmentation and harvesting costal cartilage but do provide reasonable access for harvesting autologous fillers or performing liposuction.

Breast Augmentation. Candidates for augmentation via the abdominoplasty incision include those patients who choose to undergo a full abdominoplasty and who have: (1) pseudoptosis, (2) first-degree ptosis, or (3) second-degree ptosis. These patients often have loose enough skin to accommodate implants without having to lower the inframammary fold. Candidates for this procedure who also have second-degree ptosis are those who want fuller breasts and would have benefited from an augmentation combined with mastopexy, but refused mastopexy because they do not want the additional scars. Discussion for augmentation includes type of implant (textured vs smooth, round vs dimensional, vs expander/implant), volume, access incision to create the implant pocket (transaxillary, periareolar, inframammary, transumbilical, and...
Fig 1. Subcutaneous tunnel created from the abdominal incision for access to either the subglandular or subpectoral pocket for placement of breast implants. The tunnel for the subpectoral pocket is best created by designing it just lateral of the center of the breast meridian when approaching the inframammary fold.

access via the abdominoplasty incision), and location of implant pocket (subpectoral or subglandular).

Rib cartilage harvesting. Patients requesting nasal augmentation require graft material that is either autologous or nonautologous. My preference is for autologous material over nonautologous, however, some patients are concerned about the donor site morbidity including the noticeable incision and postoperative discomfort. Autologous rib cartilage is one option for patients who require substantial nasal augmentation in which septal cartilage is either not available or will not provide enough dorsal height. Commonly, local cartilage from the septum is available, but for some individuals septal cartilage does not provide enough augmentation. Harvesting rib cartilage after elevating the abdominal flap for a full (type 4) abdominoplasty is a way to avoid an additional scar on the chest, even though some surgeons will harvest rib cartilage under the inframammary fold to conceal the scar. Of course, the inframammary fold incision is not an option in combination with abdominoplasty because the abdominal flap viability is potentially in jeopardy.

Autologous fillers. Patients with deflation of facial tissues desiring facial rejuvenation or who have body contour irregularities from previous surgery or trauma may be good candidates for combining these procedures with abdominal contouring techniques. Patients having liposuction, modified abdominoplasties, or full abdominoplasties all have incisions that provide access for harvesting most filler materials. Certainly, autologous fat can be harvested from all types of abdominal contour patients. Fascial grafts or dermal-fat grafts can be harvested from any of the open abdominal contour techniques.

Liposuction. Patients requesting abdominal contour procedures often request treatment of other aesthetic units of the torso. This may include the flanks, the mons, and sometimes the back. The thighs are often treated at the same time to maintain symmetry with the torso. Additional incisions to contour the flanks and thighs can be minimized by using the access obtained from the abdominoplasty incision from the varying open techniques.

Surgical Technique

Breast Augmentation. The technique for breast augmentation via the abdominal incision follows elevation of the abdominal flap, which is commonly performed in a full (type 4) abdominoplasty. Once the flap is elevated to the xyphoid and costal margins, bilateral tunnels (usually not longer than 6-8 cm) are created lateral to the xyphoid toward the central inframammary fold by using hemicautery and blunt dissection (Fig 1). The tunnels are made wide enough to pass the implants (usually about 4-6 cm wide). Resection of the excess lower abdominal skin and fat can be performed either before making these tunnels (which I find easier) or after. The tunnels are created superficial to the rectus fascia level in the same plane as when elevating the abdominal flap. A lighted retractor or Deaver retractor is helpful.

Once the pectoralis fascia is identified, a subglandular plane of dissection or subpectoral plane can be created. The subglandular pocket is easier to create. If the subpectoral plane is used, it is sometimes easier to create the pocket by making the original tunnel from below just lateral of center of the breast me-
Fig 2. Patient with submuscular round saline implants filled to 300 mL placed via the abdominoplasty incision and after a full abdominoplasty. (Note the patient would have benefited from a mastopexy but did not want the additional scars on her breast). (A, B) Preoperative views. (C, D) Postoperative views.

When approaching the fold, and then identifying the inferolateral border of the muscle. Sharp dissection using a long-tip bovie is usually used at this point to further develop the pocket. Although I have not used one, endoscopic instrumentation may be helpful for visualization and for pocket dissection. If a subpectoral pocket is used, the inferior and a portion of the medial pectoralis major attachments are released. Once the subglandular or subpectoral pocket is developed, the defflated implants are inserted and filled. The patient is then placed in a sitting position and assessed for symmetry. Minor adjustments can be made from this position. In most of these patients, lowering of the inframammary fold is unnecessary, the breast skin is often loose enough to accommodate the chosen implants. Because the inframammary fold has been violated in creating the pocket from this approach, 2-0 PDS sutures are used in interrupted fashion to recreate the fold. At this point the abdominoplasty is completed. Two large closed suction drains are then brought out through separate stab incisions below the abdominoplasty suture line as I commonly perform for open abdominal contour procedures (Fig 2).

Rib Cartilage Harvest. Rib cartilage can also be harvested from this approach. Elevating the abdominal flap cephalically over the costal margin only on one side is required. The cartilage of the 8th rib is preferred for nasal augmentation in this situation, and can be harvested directly from this approach (Fig 3). After splitting the external oblique fibers parallel to their orientation, the perichondrium is incised over the cartilage and then it is freed from its surrounding attachments. A Doyen rib elevator can be used to facilitate its release, if a cartilage graft alone is harvested it can be freed with a scalpel at the costo-
Fig 3. Harvesting of 8th rib cartilage from the abdominal incision.

Fig 4. Harvesting of autologous fillers such as fat and dermal-fat grafts can be obtained from the discarded abdominal pannus. Fascial grafts can be harvested from the anterior rectus sheath. Liposuction can be accessed from the abdominal incision.
chondral junction. If bone and cartilage are needed, then they are transected more proximally with a bone cutter as required.

Care must be taken to avoid damage to the graft, neurovascular structures, or underlying pleura. At this point the wound is closed for a pleural injury. The wound is filled with saline and positive pressure is induced by the anesthesiologist. If there is a leak, the wound is closed with absorbable sutures in layers over a red rubber catheter attached to suction. The red rubber catheter is removed after positive pressure is induced by the anesthesiologist. A postoperative chest radiograph is obtained after surgery to check for residual pneumothorax. The rib cartilage can then be carved and used for nasal augmentation or facial augmentation once the abdominoplasty incision is closed.

**Autologous Fillers.** Other autologous fillers can also be harvested (Fig 4). Fat grafts or dermal fat grafts can be harvested from the proposed discarded pannus before performing the abdominoplasty procedure. After harvesting of the fat grafts, they can then be processed on a test tube rack and wicked of excess fluid. Before performing the repair of the musculoperineurotic laxity, rectus fascial strips can be harvested to use for augmentation of hips or other portions of the face. Although fat grafts may be obtained almost anywhere with limited incisions, fat grafts may also be harvested from areas of liposuction, which is performed from the abdominal incision.

**Liposuction.** Liposuction of the flanks and thighs can be performed either before the abdominoplasty as a closed procedure or as an open procedure before closure of the abdominal incision (Fig 4). The procedure is performed by using a super wet technique (fluid infiltrate consists of 30 mL of 1% lidocaine with 1 mL of 1,000 epinephrine per each 1 L of Ringer's lactate solution). Exposure for the lateral thighs may be obtained from the incision either with a long cannula or by extending the incision laterally.

**Conclusion**

Patients who are candidates for abdominoplasty have the potential opportunity to facilitate some ancillary procedures by performing them through the abdominoplasty incision. Furthermore, harvesting of autologous fillers or rib graft through the abdominoplasty incision limits the need for distant donor sites. The techniques described are straightforward and are based on standard principles that should be considered when ancillary procedures are performed in conjunction with abdominoplasty contouring procedures.

**References**