

Refinement and Transfer

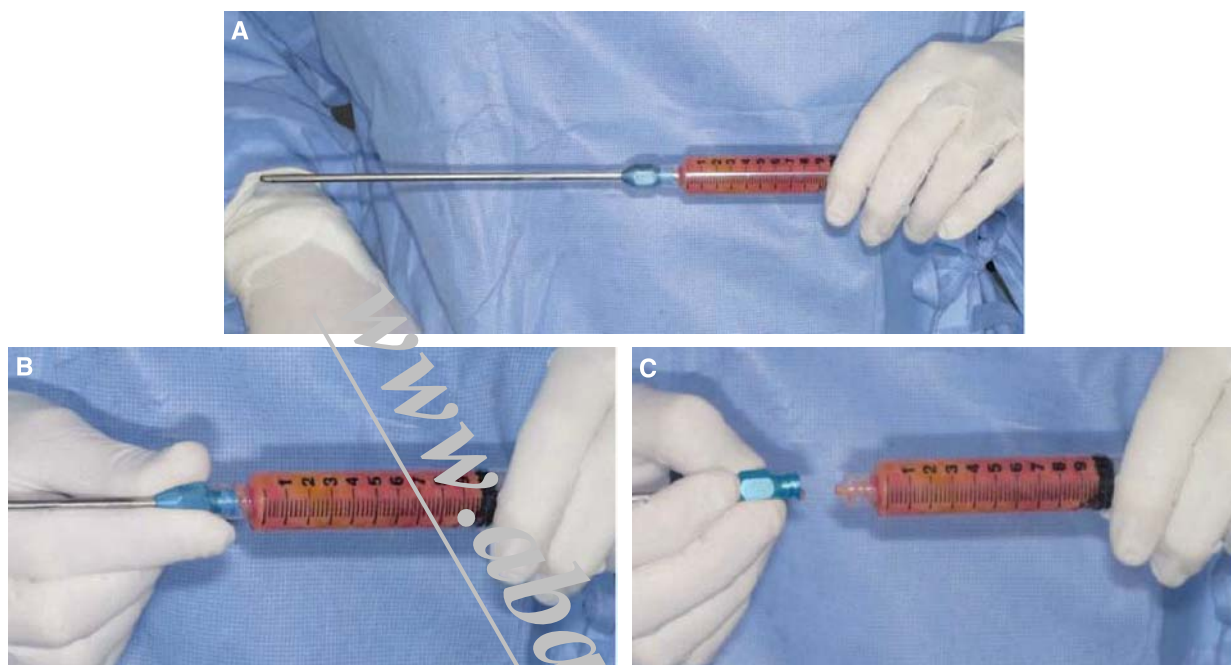


Fig. 1-7, A-C

After the fat has been harvested, the cannula is removed from the syringe and replaced with a plug.

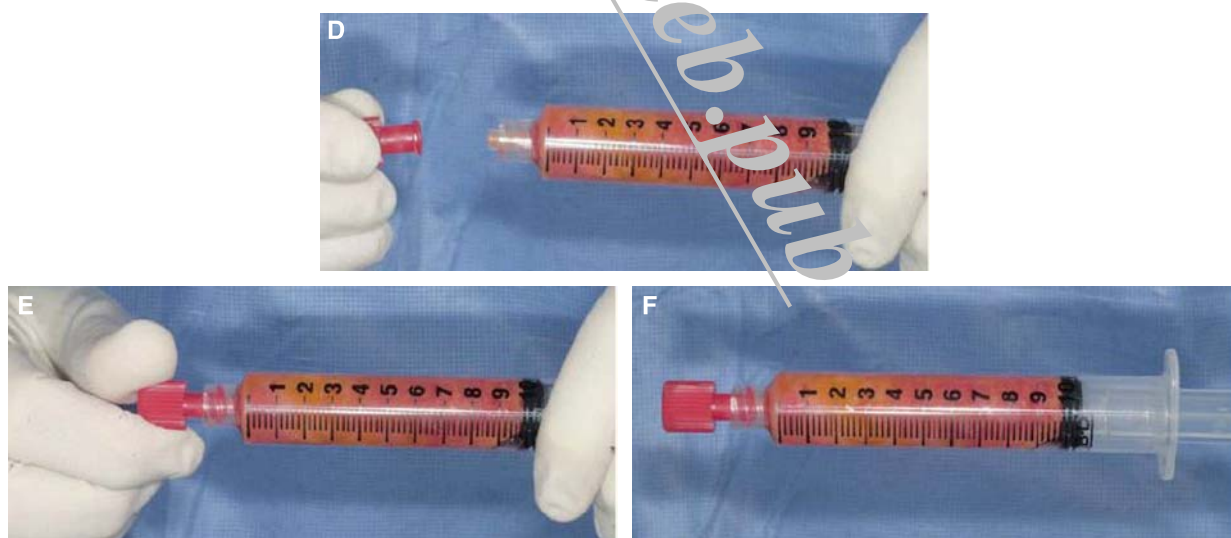


Fig. 1-7, D-F

The preferred plug is a dual-function Luer-Lok plug for capping that is available in most hospitals. This plug is twisted on to create a seal that will prevent spillage during the centrifuging process.

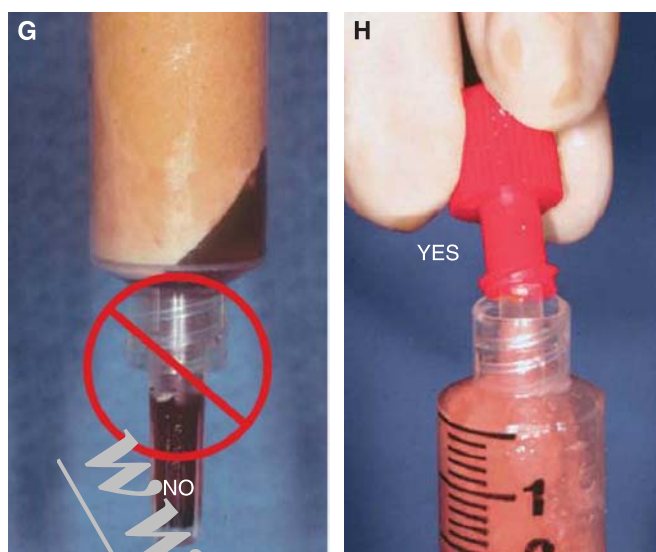


Fig. 1-7, G and H

The plugs that accompany the syringe should not be used, because they frequently allow the aqueous portion of the contents to leak.

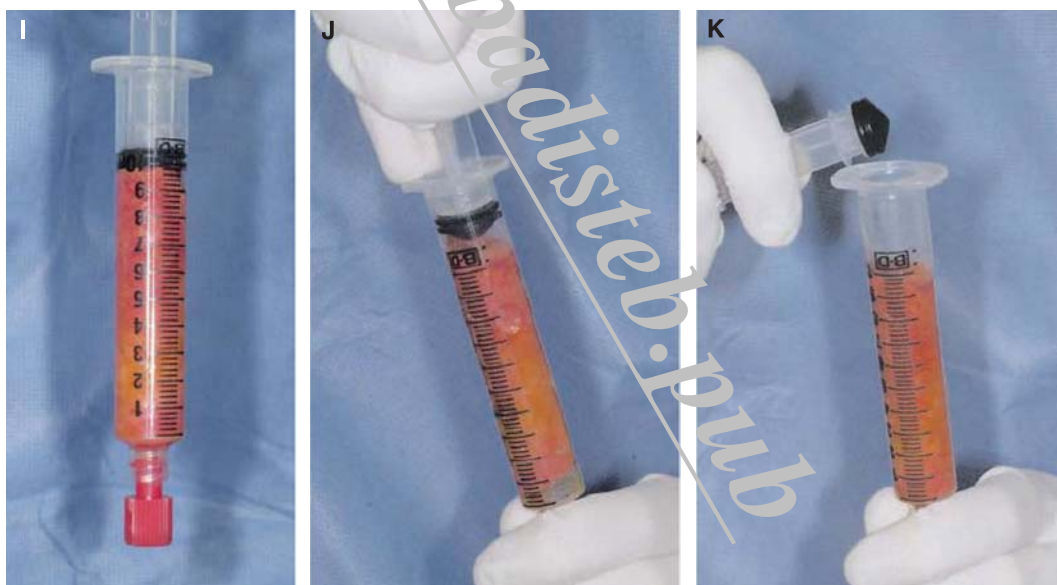


Fig. 1-7, I-K

After the Luer-Lok syringe is sealed, the plunger is removed from the proximal end of the syringe.

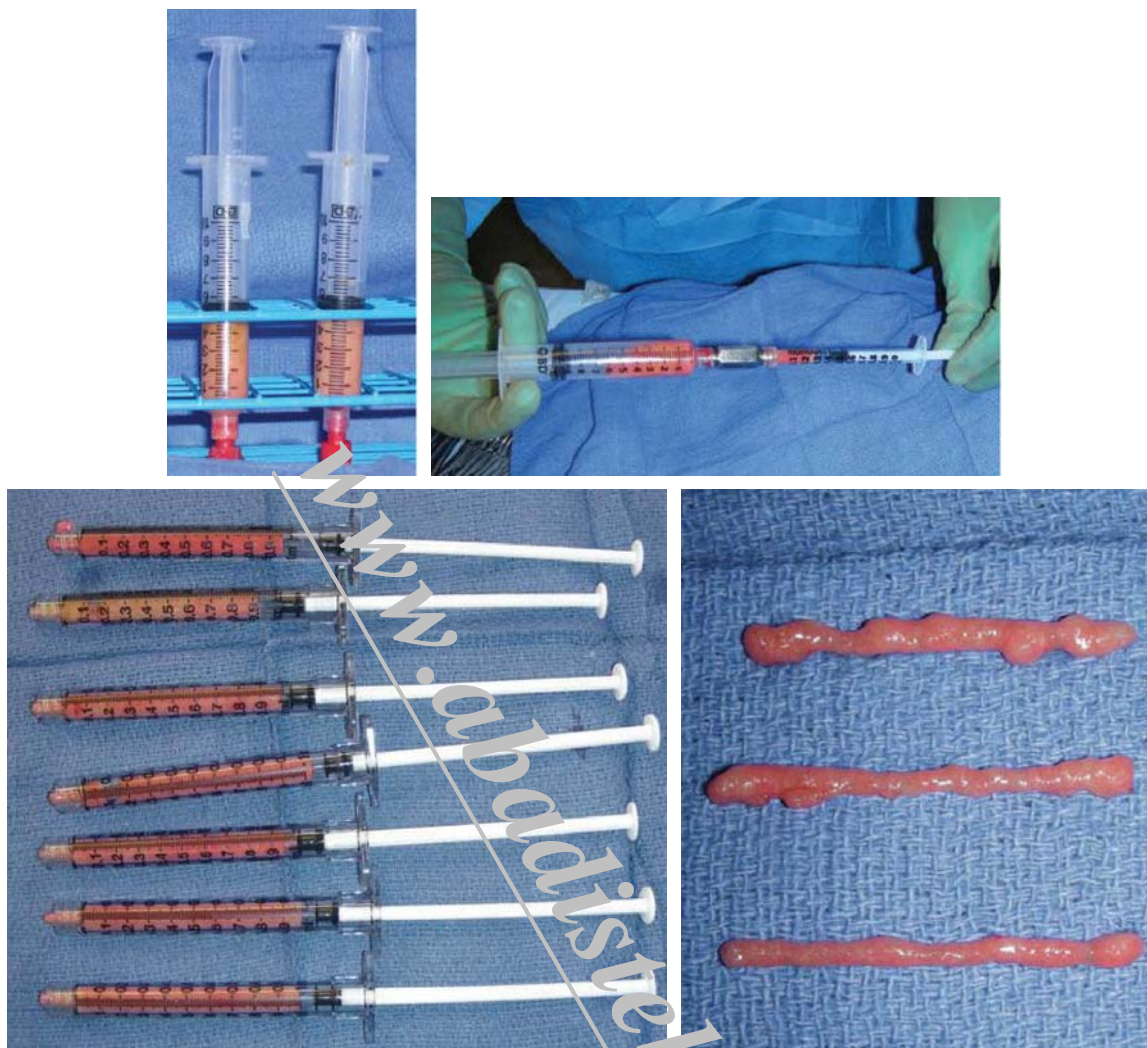


Fig. 10-5

The concentrated fat in the syringe can then be transferred to a 1 cc syringe (our preferred size for fat injection) with an adapter. The 1 cc acrylic syringe is preferred for small-volume fat grafting; it creates little friction or resistance during injection, and thus the surgeon can easily control the injected volume. The air bubble inside the syringe should be removed so that quantification of the volume injected can be recorded precisely. We have also used a 3 cc syringe for large-volume fat grafting.

Processing Fat With a Device, Filtration, or Gravity Sedimentation

The manufacturers of several fat processing systems (such as the Revolve System, LifeCell, Branchburg, NJ; PureGraft, Cytosol Therapeutics, San Diego, CA; or LipoKit, Medi-Khan, West Hollywood, CA)⁹⁻¹¹ have claimed that their devices produced equivalent or higher concentrations of purified fat with reduced red blood cell debris and free oil compared with alternative methods such as centrifugation. However, these studies in fact might have problems in their experiment designs and were not tested independently. In addition, they failed to prove their superiority in fat graft processing in terms of the concentration of viable adipocytes and in vivo fat graft retention rates.



Fig. 19-2, E-J

After the first treatment, the inflammation around the ulcer was improved and the patient's pain resolved, the ulcer at the biopsy site had clearly worsened. She was seen 3 months after a second fat grafting session in which 50 cc was placed, and the radionecrotic rib was debrided. The lesion was still present, but the first signs of spontaneous healing of the necrotic tissue were observed (*E* and *F*).

After a third 80 cc fat grafting session, an accelerated, spontaneous healing process was evident (*G* and *H*).

At 6-year follow-up, no recurrence of the ulcer or pain was observed, the skin of the grafted area was soft, and the texture had improved over time. The patient's objective LS score is now 1 (*I* and *J*).

SURGICAL TECHNIQUE

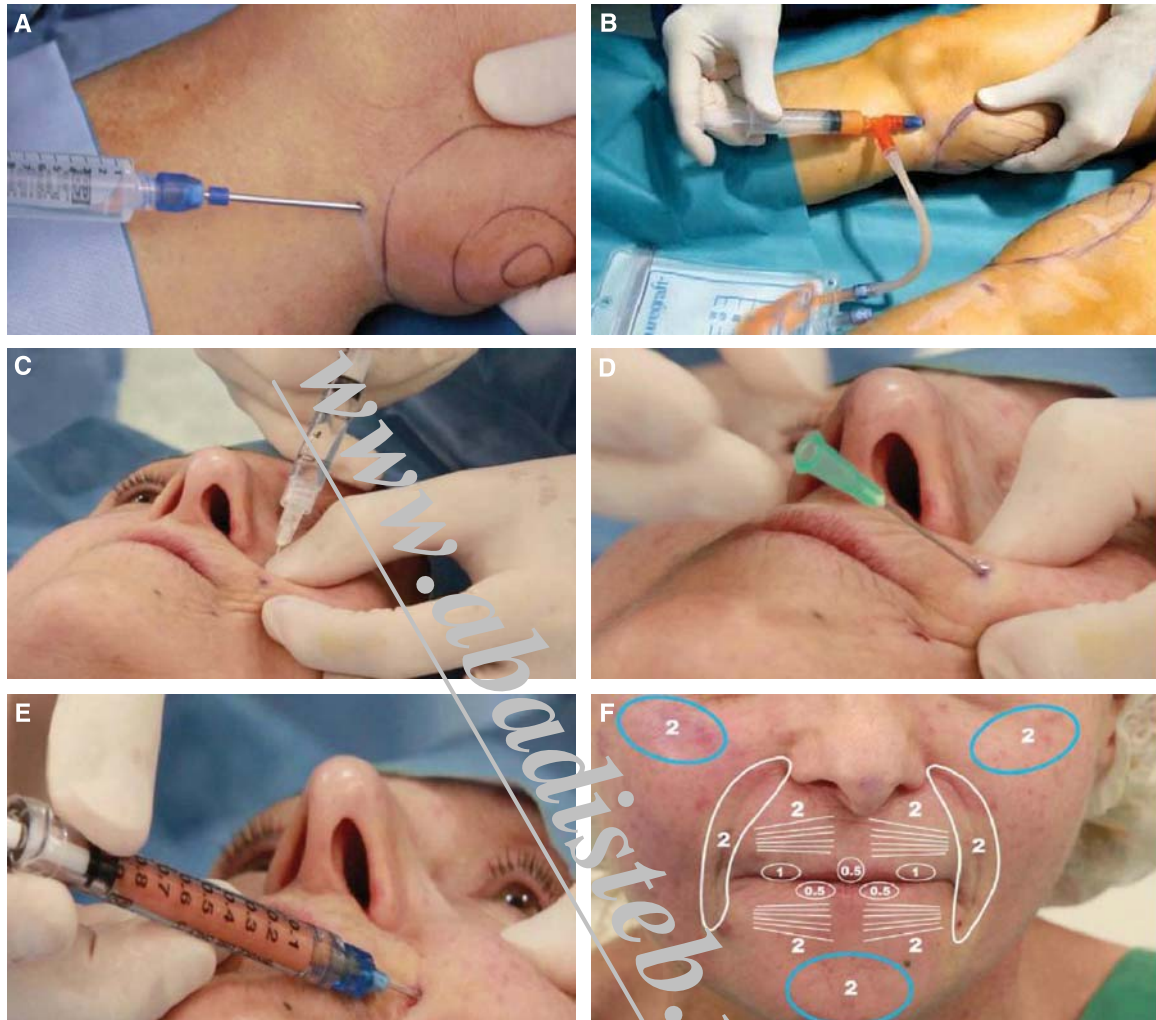
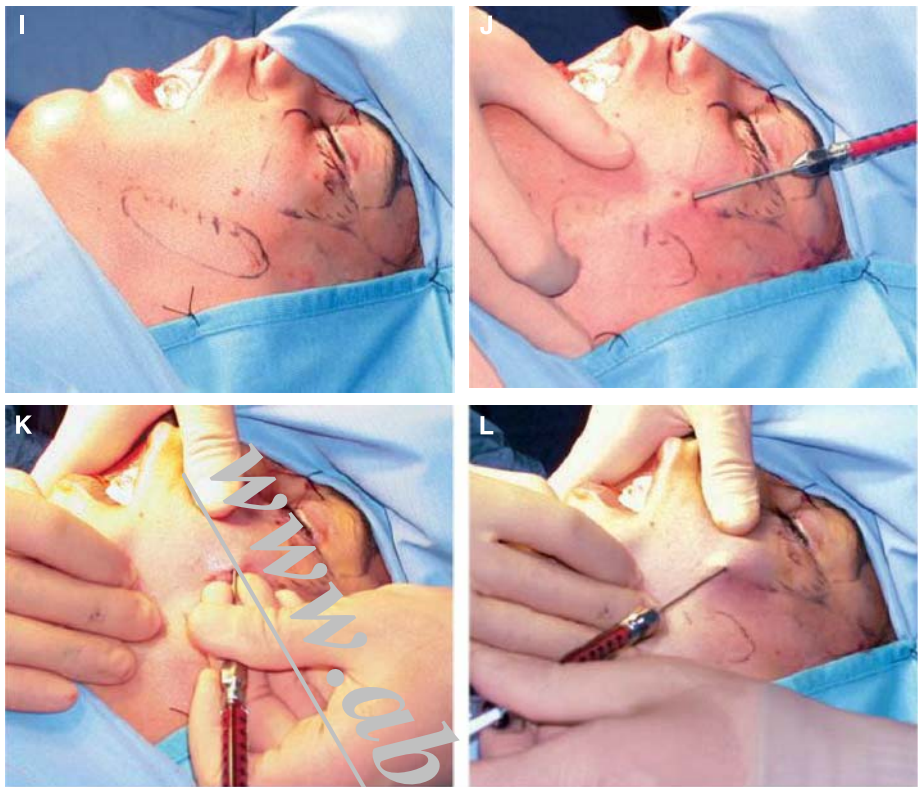


Fig. 20-1

The steps of fat micrografting for the treatment of SSc of the face are shown. Local infiltration is done, in this case, in the inner aspect of the knee (a preferred site for harvesting) (A). After an interval in which the lidocaine takes effect, microharvesting is performed with a closed system (B). The lipoaspirate is processed (as described under Purification). A local anesthetic is injected in the affected areas of the face (C), and the entry point is punctured with a 21-gauge (0.8 mm) needle (D). Micrografting is performed with a 1 cc syringe and a 21-gauge (0.8 mm) cannula (E). The fat placement and quantities in this patient (total 21.5 cc) are shown (F).

Sampling and Infiltration

The first step is anesthesia of the entry point with a 3 cc syringe and a 30-gauge needle. An incision is then made with a 14-gauge needle before inserting the infiltration cannula of the same diameter (14-gauge, 2 mm). For infiltration, we use a modified Klein solution containing 800 mg of lidocaine and epinephrine 1:1,000,000 with a wet technique. Typical harvesting areas include the abdomen, hips, and inner knees; our preferred location for small quantities is the inner side of the knees. Aspiration is performed using a 10 cc syringe with less than 1 cc of vacuum (less than 300 mm Hg).



VOLUMES PLACED (total 79.5 cc)	Right Face (cc)	Other Subunits (cc)	Left Face (cc)
Periorbital area		15	
Upper marionette groove	2		2
Infraorbital-lateronasal area	16		16
Nasolabial folds	4		4
Dorsum of the nose		3	
Supraorbital forehead area		3.5	

Fig. 32-3, I-L

During each fat grafting session, the amounts of fat in cubic centimeters are recorded on a sketch of the face and reported on a table so that the surgeon can keep track of the fat injected in each area. This is useful for the following fat transplant stages.

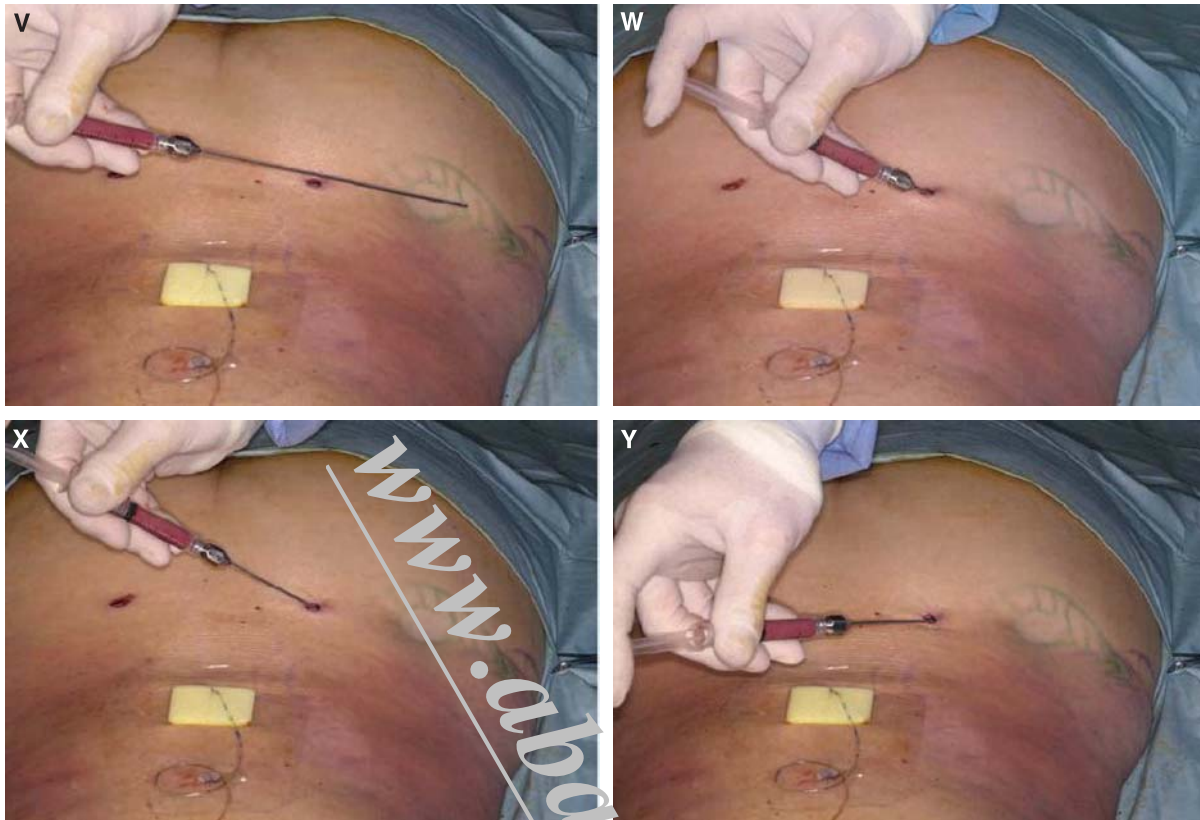


Fig. 43-5. V, W, X, Y

Placement into the defect begins with a type I blunt 15 cm infiltration cannula through the ipsilateral sacral incision. This longer cannula allows placement from a slightly more distal incision that I usually use for corporeal placement. The placement begins deep and progresses in layers to a superficial level to create an integrated volume.

The barrel of the cannula is firmly grasped between the fingers (middle, ring, and little) and the thumb while the cannula is inserted into the incision and advanced through the tissues. I use my index finger (or thumb in some situations) to push on the plunger while the cannula is withdrawn. *Fat is forced through the cannula into the donor site only as the cannula is removed, not while it is advanced.* No pressure is placed on the plunger of the syringe during advancement of the cannula. When first trying this technical maneuver, it is probably best to avoid having a finger on the plunger because this will avoid inadvertently injecting while advancing the cannula.