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Global Perspectives: India
Autologous Fat Grafting

ASIA

INDIA

Autologous fat grafting (AFT) entails three essential steps: 1. Aspiration, 2. Processing and 3. Injecting. Aspiration is done from areas of fat deposit, which are diet and exercise resistant. Aspiration is done from both sides to preserve symmetry. Infiltration at the site of aspiration is 1:1 million adrenaline and 0.05% lignocaine.

For areas such as breast and buttocks where large volume fat grafts are required, I use an AquaShape® device for aspiration of fat. Most of the techniques for AFT have separate instrumentation for harvesting and processing. In large volume fat grafting, this 2-step procedure prolongs the warm ischemia time and is also cumbersome. An AquaShape® with lipocollector® device consolidates the step of harvesting and processing into one. Lipocollector® (figure 1) is a jar with a sieve (200um pore size) at the bottom. The fat aspirated by AquaShape® flows into the Lipocollector® and the sieve at the bottom allows the aqueous component to pass through into the suction bag retaining the fat in the jar. The fat retained in the jar doesn't need further centrifuging or filtering.

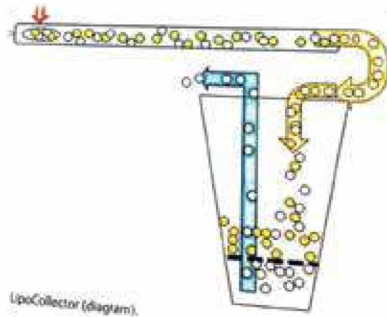

Figure 1. The aspirate (yellow and white bubbles) flows into the jar and the sieve at the bottom allows the aqueous component (white bubble) to pass through retaining the fat in the jar.

The fat from the Lipocollector® jar is withdrawn into 50 cc syringes which are placed on a syringe rack. I have observed that even after ½ hour or so if the syringe remains on the rack there is absence of aqueous and oily layer. The absence of oily layer is testimony to the gentle nature of fat harvesting by AquaShape®. The fat in a 50cc syringe is then transferred through female to female adaptors to 10 cc syringes. Spoon tip 2.1mm by 15 cm single-hole Tulip® injector attached to a 10 cc syringe is used for injecting fat into the recipient site. Through a stab incision, the tulip injector is introduced into the recipient site. I use rapid to and fro movement while injecting to prevent pooling of fat. It is important to deposit the fat in multiple planes, starting in superficial subcutaneous plane to subfascial. I avoid intramuscular plane due to risk of fat embolism[1]. Deposits are made from at least two directions, which are at right angles to each other to avoid a "sausage string' appearance. A case of buttock AFT is shown in Figure 2.

Figure 2. Left image: irregular buttock contour. Right image: following AFT :375 cc left buttock and 425 cc right buttock giving a smooth round contour.

For areas such as the face and dorsum of the hand where a small volume of fat graft is required, I prefer syringe liposuction. 10 cc leur lock BD syringe with Coleman™ harvesting cannula is used for aspiration of fat. The plunger is withdrawn 3 cc at a time to avoid inadvertent increase in vacuum pressure. With the plunger at the 3 cc mark, approximately ½ atmosphere of negative pressure is generated[2]. As the syringe fills up, it is placed on the syringe rack in an upright position until the requisite volume of fat is harvested. The 10 cc syringe is then centrifuged manually for 3 minutes.

For injecting, I use 1 cc BD leur lock syringe with spoon tip 1.2 mm single hole Tulip® injector. The face is a highly vascular area and incidence of blindness and cerbral stroke has been reported[3]. Therefore, it is paramount that safety guidelines are followed. Inject using only blunt tip needles, inject only during withdrawal, deposit small aliquots at a time using minimum pressure. It

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usually takes 20 to and fro movements to empty out 1 cc syringe over 1 minute.

Injecting the fat follows the same principle as described above. For the periorbital area, no fat injection is given over the tarsal plate and for the rest of eyelid, the deposit is only deep to orbicularis oculi. Subcutaneous grafts in the eyelid area will be visible and therefore avoided.

Figure 3 shows a satisfying result following pan facial AFT. AFT if judiciously performed, all the while adhering to safety guidelines, is a rewarding procedure, both for the surgeon and for the patient.

Figure 3 - Left Image: 40 year old deflation of face due to weight loss. Right Image: Following 23 cc of AFT to each side of face from periorbita to jawline.

References

1. Rosique, Rodrigo G., and Marina JF Rosique. "Deaths Caused by Gluteal Lipoinjection: What Are We Doing Wrong?." Plastic and reconstructive surgery 137.3 (2016): 641e-642e.

2. Rodriguez, Ricardo Luis, and Alexandra Condé-Green. "Quantification of negative pressures generated by syringes of different calibers used for liposuction." Plastic and reconstructive surgery 130.2 (2012): 383e-384e.

3. Thaunat, Olivier, et al. "Cerebral fat embolism induced by facial fat injection." Plastic and reconstructive surgery 113.7 (2004): 2235-2236.

The author has no financial interest in any product or company named in this article

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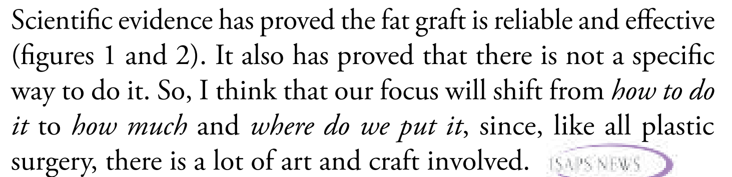

Scientific evidence has proved the fat graft is reliable and effective (figures 1 and 2). It also has proved that there is not a specific way to do it. So, I think that our focus will shift from *how to do it* to *how much* and *where do we put it*, since, like all plastic surgery, there is a lot of art and craft involved.

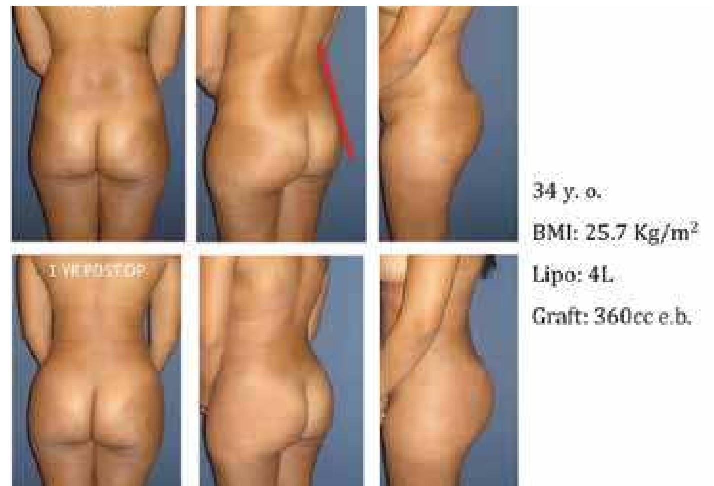

Figure 1- 34 y. o. patient, pre-op and 1 year post-op, underwent liposuction (4 liters) and fat graft of 360 cc in each buttock.

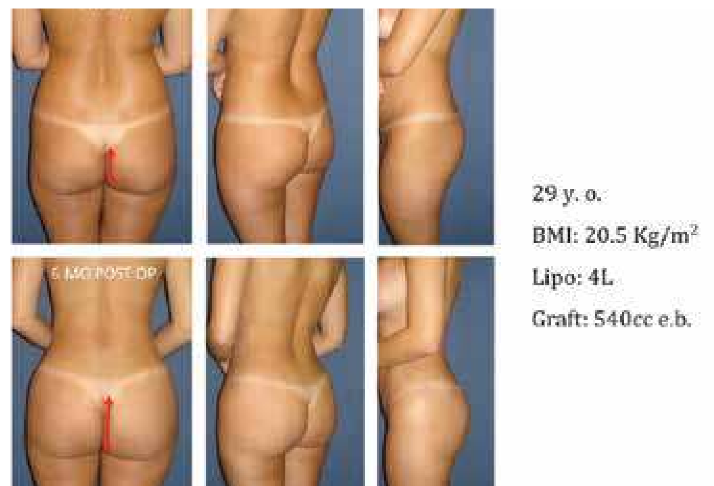

Figure 2 - 29 y. o. patient, pre-op and 6 months post-op, underwent liposuction (4 liters) and fat graft of 540 cc in each buttock.