

## Vertical Lipectomy of Fat Rolls

EL-SAYED IBRAHIM EL-SHAFFEY, M.D.

*The Department of Plastic Surgery, Faculty of Medicine, Mansoura University.*

### ABSTRACT

Back fat rolls and full waist can be a sign of aging and their treatment has a rejuvenating effect. They obliterate the waists, reduce curvaceousness and disturb the "hourglass figure" of the feminine body. It is proposed that aggressive multiplanar liposculpture of the fat rolls enhances the waist curvature and improves the fat rolls, the excess skin being redraped over a longer concave waist curvature. Also suction performed in a vertical way creates a new vertical collagen framework that supports the skin against gravity. To this effect, we used vertical liposculpture to treat fat rolls in the back, waist and iliac crest of 38 female patients. The fat rolls are suctioned in a vertical multiplanar way to obtain a thin adipose flap. The direction of suction is always perpendicular to the fat roll axis. Despite the aggressiveness of the lipectomy, complications were minimal. Only one seroma was seen. The lymph vessels, having the same vertical direction, are preserved reducing postoperative edema. Liposculpture of the fat rolls performed in a vertical way creates a new vertical collagen framework that supports the skin against gravity. The results are excellent. All patients showed a marked improvement of the fat rolls with enhancement of the waist curvature and reduction of the sizes worn. The improvement of the fat rolls results from the thin cutaneous flap redraping over a longer concave waist curvature. The flap redrapes better in a vertical way because the new vertical collagen framework supports the skin against gravity. This has a lifting effect on the fat rolls. Vertical liposculpture of fat rolls and creation of a narrow long female waist has a rejuvenating effect. Curvaceousness and the "hourglass figure" of the waist are enhanced as markers of feminine beauty.

### INTRODUCTION

Back fat rolls have a negative impact on the feminine figure. There are many fibrous connections between the superficial fat of the back and the underlying fascia that often form into rolls with fat excess [1]. Rolls of fat are usually seen in the axillary region, middorsal area, the waist and flanks. The axillary and middorsal fat rolls become unnaturally more prominent when the bra is tightened which is distressing to most women. They also obliterate the waist leading to plumpness and straight sides.

Wherever you look at the feminine body (front, back or side) a lazy S can be seen forming the outline. The waist extends from the level of the iliac crest to the level of the lower ribs [2]. The

waist area is like an "hourglass figure" and hence any adjacent lipodystrophy should be treated to preserve that figure [3]. Curvaceousness is also a marker of attractiveness. Curvaceousness is the degree of "hourglass" shape as determined, for example, by the size of the bust, relative to the circumference of the hips and waist, and the size of the buttocks [4]. Fat rolls affect both waist to hip ratio and curvaceousness as determinants of beauty.

If fat is removed, using the proposed vertical liposculpture technique, from the whole area (back, waist and iliac crest), waist definition will be enhanced and the length of the new concave curve of the waist will be greater than the straight waist before operation. The excess skin of the fat rolls will be taken out by redraping the thinner cutaneous flap over the longer concave curve of the waist improving redundant skin in this area. Suction performed in a vertical way creates a new collagen framework that supports the skin against gravity producing a lifting effect on the back rolls. Based on these ideas, vertical liposculpture to treat fat rolls of the back, waist and iliac crest is presented including in-depth examination of the concepts behind its use.

### PATIENTS AND METHODS

Thirty-eight female patients were operated during the period from April 2005 through March 2007 for treatment of fat rolls of the back, waist and flanks with vertical liposculpture (in Hadi Hospital, Kuwait). The age range was between 18 and 49 years. Three patients had gastric banding 1-2 years before the operation with variable weight loss. Four patients had liposuction performed in the usual way 2-4 years previously. To improve waist circumference, treatment of the abdomen was done in the same session in patients with moderate fat deposits and in a separate session in patients with large fat deposits.

#### *Operative technique:*

Marking is done in standing position. The fat rolls and the intervening folds are marked and also

the fat hump below the nape of the neck and fat deposits in the lumbosacral area. A line projecting the desired waist curvature is added. The suction area extends from paraspinal line to anterior axillary line on both sides. Areas of fat injection in the buttocks or gluteal depressions are marked with different color (Fig.).

Incisions are made in a way to allow treatment of the fat rolls in a vertical direction perpendicular to the axis of the fat roll. Each fat roll should be approached from two directions to allow crisscrossing. The location of the incision is cranial or caudal to the fat roll, making them vertical or longitudinal to the body axis. Fat rolls are treated through a posterior axillary incision, a lateral or dorsal midthoracic incision and the trochanteric incision. It is important not to make symmetrical incisions that will indicate aesthetic surgery. If the incisions are asymmetrical and they are apparent postoperatively, they will look like scars from removal of a mole. The incisions are connected through the tumescent infiltration and through suction.

Vertical suction is carried out in a multiplanar way to obtain a thin adipose flap (Fig. 1). In each area, deep suction is followed by superficial suction with a smaller cannula. Counter pressure with the hand flat is always needed for the cannula to scrap fat from the undersurface of the flap and move the plane toward the surface. Without this maneuver the cannula may slide under the fat over the fascia with little fat removal. It has to be a uniform suction to avoid superficial tunnel depressions. A thin flap is important to achieve the desired retraction. However, one has to be conservative in the axillary fat roll if there is laxity of the thin skin in this area.

The waist curvature evolves as suction of the fat rolls proceeds and the folds between the rolls are freed by vertical liposculpture. Some patients have more fibrotic fat in the dorsal region. Use of smaller or flat tip cannula can always aspirate the excess fat. This is more evident in post weight loss patients and in revisions or secondary liposuction. Fat injection of the buttock and gluteal depression is carried out as indicated.

Adhesive elastic tapes, elastoplast, are applied in a vertical direction and left for 3-5 days. Elastic girdle to protect and direct tegumental retraction is worn for more than 6 weeks. Available girdles do not cover the upper back or axillary area, so we use a specially designed half-sleeve girdle to compress the axilla.

## RESULTS

The period of follow-up ranged from 3 to 18 months. Treatment of the back rolls was combined

with liposculpture of the abdomen in 18 patients. In most of the other patients, suction of the fat rolls was done in a separate stage. Fat injection of gluteal depressions (5) alone or with fat injection of the buttocks (12) was also performed.

The amount of suctioned fat in this area ranged from 800ml to 7500ml. The aesthetic results were noticeable from the first moment, especially the improvement in the waistline. Toward the third month, edema disappeared with improvement of the back rolls, enhancement of the waist curvature and lumbar curve and significant reductions in the sizes worn. One patient had a small seroma in the lumbosacral area, which disappeared spontaneously; otherwise there were no other complications such as muscle or bone injury. The vertical suction (preserves lymphatics) and adhesive tape reduced seroma and bruises. This is a very low risk technique despite the aggressiveness of the lipectomy. Minimal residual fat in axillary fat roll was seen in one patient and in middorsal fat roll in another patient. Both were treated with phosphatidylcholine injection. We modified the low cut garment into a half sleeve to compress the axillary area and avoid hypertrophic scars in the upper back. Results were gratifying and patients were happy with enhancement of waist curvature and flattening of the back rolls. This, together with improvement of the iliac crest and buttocks, enhanced the feminine hourglass figure (Figs. 2-7). Patients looked and appeared taller. Patients were very satisfied with their back and waist both in swimming suits and in clothes.

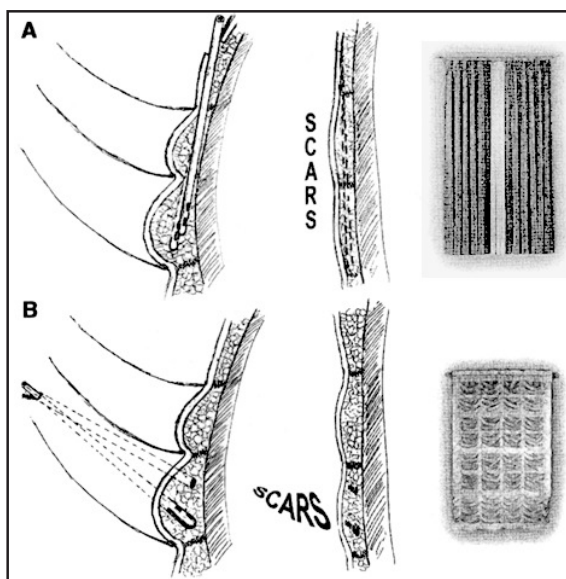


Fig. (1): (A) Vertical liposuction perpendicular to the fat roll axis creates a new vertical collagen framework that will support skin against gravity. The force will be distributed from top to bottom as if it were a sheer curtain panel heading in a standard way. (B) Suction in the same direction as the fat roll axis creates a transverse scar. The effect is similar to that of a sheer curtain Austrian festoon panel.



Fig. (2-A): 32-year-old patient who had secondary fat roll liposculpture in a vertical manner and fat injection of upper buttocks.



Fig. (2-B): Adhesive dressing in a vertical way reduces edema, echymoses and seroma.



Fig. (2-C): Improvement of the fat rolls, waist and lumbar curve.

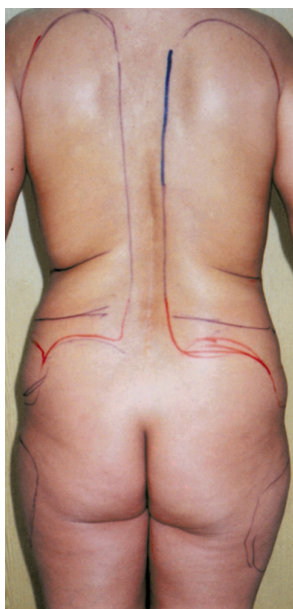


Fig. (3-A): 40-year old patient who had fat roll vertical liposculpture.



Fig. (3-B): Improvement of fat rolls and waist curvature. Limited suction of the iliac crest fat roll and fat injection gluteal depression were also done.



Fig. (3-C): Preoperative lateral view.



Fig. (3-D): Postoperative lateral view with enhanced lumbar curve.





Fig. (4-A): 24-year old post gastric band patient with occor-dion like fat rolls.



Fig. (4-B): Improvement of the fat rolls and waist after vertical liposculpture of fat rolls and saddlebags and fat injection gluteal depression.



Fig. (5-A): A 49-year old patient who had vertical liposculpture of fat rolls back, waist and iliac crest.

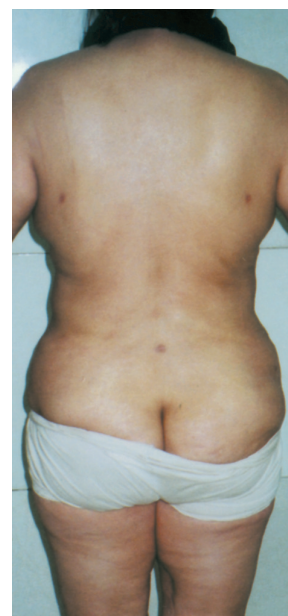


Fig. (5-B): Improvement of fat rolls and waist curvature. Conservative suction of iliac crest fat rolls and fat injection gluteal depression were also done.



Fig. (6-A): A 43-year old patient with full waist who had back fat roll vertical liposculpture.



Fig. (6-B): Improvement of the fat rolls and waist circumference.



Fig. (7-A): A 49-year old patient with full waist who had fat roll vertical liposculpture.

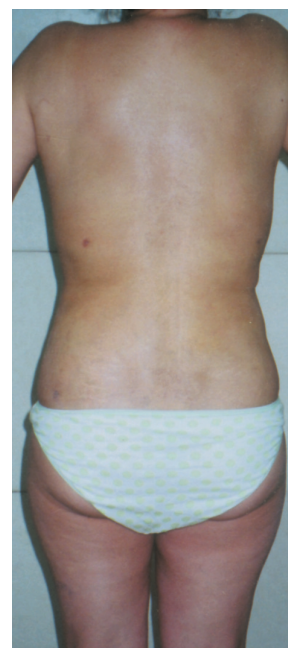


Fig. (7-B): Improvement of fat rolls and waist curvature.

## DISCUSSION

The dorsal region is one of the areas that could not be treated before liposuction except through dermolipectomy with its attendant scars [5,6]. The extended scar of circumferential dermolipectomy is an obvious downside and difficult for patients to accept [7,8].

Fat rolls in the back and full waist with straight sides can be one of the signs of aging. A narrow waist is consistently described as beautiful and works in ancient literature associate feminine attractiveness with a narrow waist [9]. Correction of fat rolls and creation of a thinner long female waist has a rejuvenating effect. There is paucity of literature on treatment of fat rolls through liposculpture. Some authors [10,11] described a direction for suctioning that is parallel to the axis of the fat rolls. Release of folds and lipografting in a transverse manner was also mentioned. In this series, liposculpture performed in a vertical or craniocaudal direction perpendicular to the fat roll axis helps to achieve a thin flap, which will redrape nicely over a longer concave waist curvature improving the fat rolls. Examination of the concepts and ideas behind the use of this technique follows.

Chamosa [3] clearly advanced the view that with vertical liposculpture, there is improvement of the fat rolls when the thin flap redrapes the new concave curve of the waist. This is different from centripetal cutaneous retraction induced by superficial liposculpture, which means transformation of a convex surface into a plane surface [12]. In some lipodystrophies, as those in the iliac crest, curvatures undergo a complete inversion from a convex surface into a concave surface. The concave infrastructure of the waist that spans the convexities of the hip and chest seems to help this. To get this change, the cutaneous flap of the convex fat rolls must be thinned out. When the thin flap is redraped over a longer waist curve, there is an improvement in the adjacent zones with the release of adjacent fat rolls. Same like opening an accordion.

Female patients with android pelvis rely on the iliac crest fat roll to provide lateral convexity for the buttocks. They lack the gentle convex curve at the greater trochanter and have the widest circumference of the hips at the iliac crest with a gluteal depression between greater trochanter and iliac crest fat roll. The deformity is more prominent with back fat rolls and full waist. In these patients we found that treatment of fat rolls to enhance waist curvature, conservative treatment of iliac

crest fat roll to retain some lateral convexity for the buttocks and fat injection of the depression below strike a balance between somewhat a convex hip-even at a higher level-and a concave waist. This shows us how bone structure and lipodystrophy of adjacent areas affect waist to hip ratio. Waist to hip ratio of approximately 0.7 is universally most attractive and ideal buttocks are 1.4 the circumference of the waist [4]. Treatment of the waist and iliac crest fat rolls should not be independent from treatment of the buttocks. The combination of autologous micro fat grafting and vertical liposculpture of fat rolls in the back and waist is the best way to obtain the ideal "hourglass figure" of the feminine body.

Lymph vessels in the back ascend vertically and converge to drain into the axillary lymph nodes. When liposculpture of the fat rolls is performed in a vertical way, the damage to the lymph vessels is minor, postoperative edema is less and recovery is shorter [13,14]. Only one patient in this series had seroma in the lumbosacral area, which resolved spontaneously.

Liposculpture perpendicular to the fat roll axis creates a new vertical collagen framework that will support skin against gravity [15,16]. The force of the cutaneous flap will be distributed from top to bottom as if it were a sheer curtain panel heading in a standard way. On the other hand, if suction is performed transversely in the same direction as the fat roll axis, the scar direction is transverse and the effect is similar to that of a sheer curtain. Austrian festoon panel.

The quality of the back skin is a greater asset to the technique. The good tone of the thick skin of the back and the new vertical collagen framework allow for better retraction and enhance the lifting effect of vertical liposculpture. Skin elasticity, however, seems to suffer with severe weight loss and aging [17]. Liposculpture of the abdomen is necessary to reduce waist circumference and enhance waist definition. This was done in the same stage in 18 patients and in a separate stage in the remaining patients with large fat deposits.

An important observation is that after liposuction of the thigh, postoperative edema of the proximal areas resolves before edema of the distal areas (medial knee) due to the force of gravity over a viscoelastic element. Likewise, hanging a bed sheet or curtain when it is still wet to dry in open-air makes them smell good and decreases their need for ironing. As the bed sheet or curtain begins to

dry from top to bottom, the wet heavy lower part pulls on the sheet producing an ironing effect. This example may help us to understand that the thin flap of the suctioned back will experience an effect of ironing while postoperative edema is resolving because it is suspended from the upper portions.

Naturally light comes from above. Horizontal shadows are more noticeable than vertical ones. With vertical liposculpture, the possible cutaneous waves will be optically less noticeable because of their vertical orientation. This optical effect adds to the effects and merits of vertical liposculpture in treatment of back fat rolls.

In addition to skin quality and fat deposits, treatment of the fat rolls must take into account bone structure [18,19]. The distance between the iliac crest and lower ribs determines the span of "hourglass figure" of the waist. The longer the distance the better the result of fat roll treatment with vertical liposculpture on components of the lazy S: bust, waist curvature and buttocks. A long waist with enhanced curvature combined with well-proportioned breast and buttocks lead to better "hourglass figure" of the feminine body.

A curvaceous body shape with a narrow waist set against full hips appears to be an important component of feminine beauty. Back fat rolls obliterate the waist leading to straight sides. Vertical multiplanar liposculpture of fat rolls achieves a thin flap and enhances waist curvature. The thin flap redrapes over a longer concave waist curvature improving the accordion like skin excess of the fat rolls. Vertical suction also creates a new vertical collagen framework that will support skin against gravity producing a lifting effect of the fat rolls. Preservation of vertical lymph vessels reduces postoperative edema and seroma. Fat injection of the buttocks has to be considered to enhance the "hourglass figure" of the feminine body. Correction of fat rolls and creation of a thinner long female waist has a rejuvenating effect.

## REFERENCES

- 1- Rohrich R.J., Raniere J., Kenkel J.M. and Beran J.: Operative principles for optimizing results in circumferential body contouring with ultrasound-assisted lipoplasty. *Clin. Plast. Surg.*, 26: 305, 1999.
- 2- Santos E. and Muraira J.: The waist and abdominoplasty. *Aesthetic Plast. Surg.*, 22: 225, 1998.
- 3- Chamosa M.: Lipectomy of fat rolls. *Aesthetic Plast. Surg.*, 30: 417, 2006.
- 4- Fisher M.L. and Voracek M.: The shape of beauty: Determinants of female physical attractiveness. *J. Cosmet. Dermatol.*, 5: 190, 2006.
- 5- Hurwitz D.J.: Single staged total body lift after massive weight loss. *Ann. Plast. Surg.*, 52: 435, 2004.
- 6- Morales H.J.: Circular lipectomy with lateral thigh-buttock lift. *Aesthetic Plast. Surg.*, 27: 50, 2003.
- 7- Cannistra C., Rodrigo V. and Marmuse J.P.: Torsoplasty after important weight loss. *Aesthetic Plast. Surg.*, 30: 667, 2006.
- 8- Carwell G.R. and Horton C.E.: Circumferential torsoplasty. *Ann. Plast. Surg.*, 38: 213, 1997.
- 9- Singh D., Renn P. and Singh A.: Did the perils of abdominal obesity affect depiction of feminine beauty in the sixteenth to eighteenth century British literature? Exploring the health and beauty link. *Proc. Biol. Sci.*, 274: 891, 2007.
- 10- Cook W.R.: Three-dimensional tumescent liposculpture of the abdomen, waist and flanks. *Dermatol. Clin.*, 17: 805, 1999.
- 11- Dabb R.W., Hall W.W., Baroody M. and Saba A.A.: Circumferential suction lipectomy of the trunk with anterior rectus fascia plication through a periumbilical incision: An alternative to conventional abdominoplasty. *Plast. Reconstr. Surg.*, 113: 728, 2004.
- 12- Gasparotti M.: Superficial liposuction: A new application of the technique for aged and flaccid skin. *Aesthetic Plast. Surg.*, 16: 141, 1992.
- 13- Frick A., Hoffmann J.N., Baumeister R.G. and Putz R.: Liposuction technique and lymphatic lesions in lower legs: Anatomic study to reduce risks. *Plast. Reconstr. Surg.*, 103: 1868, 1999.
- 14- Hoffmann J.N., Fertmann J.P., Baumeister R.G., Putz R. and Frick A.: Tumescent and dry liposuction of lower extremities: Differences in lymph vessel injury. *Plast. Reconstr. Surg.*, 113: 718, 2004.
- 15- Henry F., Van Look R., Goffin V., Fissette J. and Pierard G.E.: Mechanical properties of skin and liposuction. *Dermatol. Surg.*, 22: 566, 1996.
- 16- Carpaneda C.A.: Postliposuction histologic alterations of adipose tissue. *Aesthetic Plast. Surg.*, 20: 207, 1996.
- 17- Bhattacharyya T.K. and Thomas J.R.: Histomorphologic changes in aging skin. *Arch. Facial Plast. Surg.*, 6: 21, 2004.
- 18- Gonzalez M. and Guerrerosantos J.: Deep planed torso-abdominoplasty combined with buttocks pexy. *Aesthetic Plast. Surg.*, 21: 245, 1997.
- 19- Roberts T.L. 3<sup>rd</sup>, Weinfeld A.B., Brunter T.W. and Nguven K.: Universal and ethnic ideals of beautiful buttocks are best obtained by autologous micro fat grafting and liposuction. *Clin. Plast. Surg.*, 33: 371, 2006.