VASER® LIPO

Clinical Series

Large Volume Truncal Contouring (LVTC) without Abdominoplasty

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Objective

Effective large volume circumferential contouring of the trunk with significant skin retraction and NO skin excision required.

Patient Selection

Large-volume truncal contouring (LVTC) is appropriate for healthy individuals with truncal lipodystrophy, regardless of body mass index (BMI), who have attempted correction with traditional diet and exercise regimens with limited or no success. Patients presenting with general obesity are unlikely to achieve desired results and should be considered for other procedures.

Because skin retraction is ubiquitous, patients with all grades of skin tone and elasticity are eligible. However, candidates for LVTC should be free of abdominal hernia and severe diastasis recti. The ideal candidate should also have reasonable expectations for postoperative results following an initial consultation that covers projection of contouring outcomes in light of preexisting skin irregularities, asymmetry, and laxity[1].

To qualify for LVTC, patients should undergo a thorough medical history and exam to detect any serious underlying contraindications for the procedure, including cardiovascular, renal, hepatic, and thyroid disease, all of which may lead to serious or fatal complications[1]. Heavy smokers are generally contraindicated for this procedure.

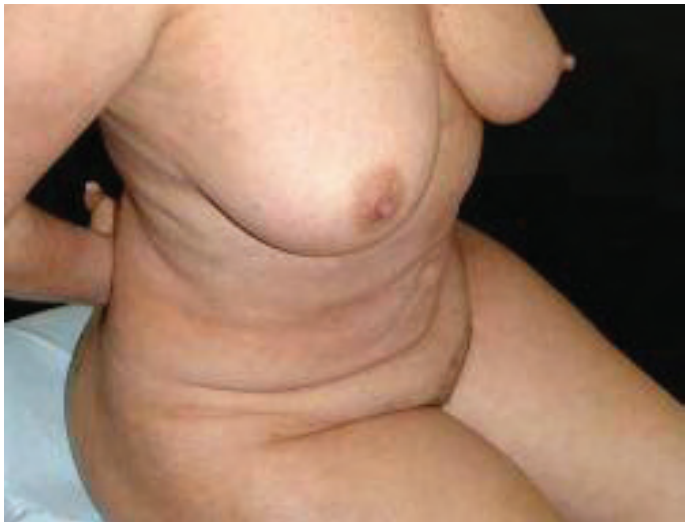
Preoperative Preparation

LVTC with the VASER® System should be performed under general anesthesia. As a general rule, procedures expected to take less than 3.5 hours may be performed in an accredited ambulatory surgical facility, and procedures expected to take longer than 3.5 hours should be performed in a hospital.

The patient should be prescribed Vitamin K for 5 days prior to surgery and Arnica tablets for 2 days prior to surgery, and should be advised not to use aspirin products for 2 weeks prior to surgery. Patients prone to bruising may also require IV desmopressin acetate immediately prior to surgery.

The targeted treatment areas should be marked the day before or the day of surgery while the patient is in a standing position. A 3-color marking system should be used, as follows:

Pre



Post

49 year old, white female; VASER Lipo of the abdomen, back, flanks, thighs and anterior axillary areas; IV Fluid - 6,500cc; Wetting solution - 2,950cc (abdomen) and 2,950cc (back); Fragmentation time - 21 min (abdomen) and 12 min (back); Aspirate - 3,550cc (abdomen) and 3,050cc (back).

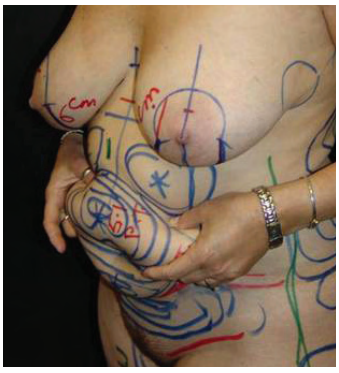
- Blue circles designate areas of lipodystrophy to be suctioned, with a star to indicate the peak of the fatty deposit.
- Blue lines are placed around areas to be tapered.
- Red markings designate depressions, creases, lines between rolls, and other areas NOT to be suctioned.
- Green markings designate areas to be fat grafted, previous scars, and the outline of the projected final contour.

Induction of general anesthesia is performed while the patient is on a gurney, after which he or she is transferred to the operating

table and placed in the prone position. Horizontal soft rolls are placed under the chest and below the hips so that the flanks and lumbar rolls are accessible for preparation. The neck should be in a natural resting position, avoiding flexion and over-extension. Flowtron® pulsatile anti-embolic compression hose should be placed on the patient's legs, and soft sponges should be applied to pressure points of the arms, legs, and face.

The operating room should be maintained at a relatively warm temperature (between 80°F and 86°F), and the bags of wetting solution should be placed in a warming cabinet and heated to 90°F prior to infusion to bring the fluid closer to body temperature[1,2]. In addition, use a warming blanket to cover portions of the body outside of the operating field.

Infiltration fluid consisting of Ringer's lactate, epinephrine, and an anesthetic agent such as lidocaine is necessary to ensure the effective transmission of ultrasound energy[3]. Infusing adequate amounts of solution at the superficial and deep levels and ensuring even distribution are key to effective emulsification[4]. The operating nurse should record the amount of solution infused at each site.



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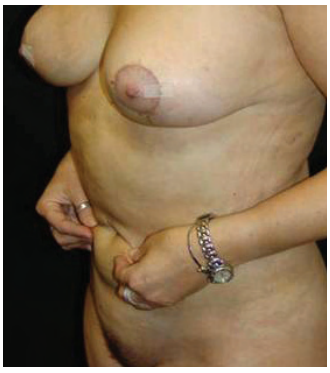
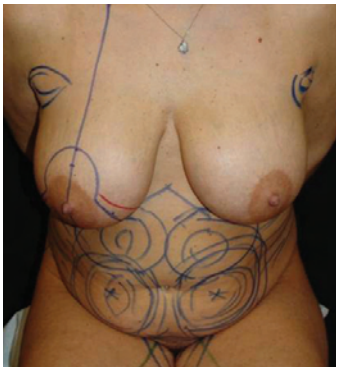


Post

44 year old, white female; breast reduction and VASER Lipo of the abdomen, back, flanks, subscapular area, trochanteric areas, inner thighs and arms; Wetting solution - 2,000cc (abdomen) and 2,300cc (back, flanks); Fragmentation time - 23 min (abdomen) and 21 min (back, flanks); Aspirate - 2,200cc (abdomen) and 2,200cc (back, flanks).



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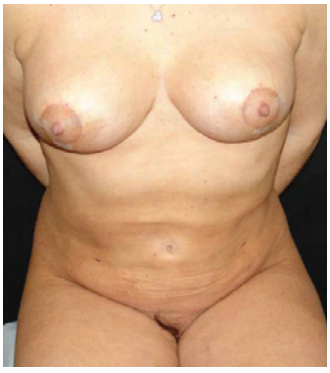


Post

32 year old, white female; breast reduction and VASER Lipo of the abdomen, back, flanks, anterior axillary areas and inner thighs; IV Fluid - 3,600cc; Wetting solution - 1,700cc (abdomen) and 2,300cc (back); Fragmentation time - 17 min (abdomen) and 12 min (back, flanks); Aspirate - 1,675cc (abdomen) and 1,450cc (back).

For areas in which more than 5,000 ml of aspirate will be extracted, limit the infiltration to 5,000 ml of Ringer's lactate with anesthetic agent and epinephrine, and use Ringer's lactate without epinephrine and anesthetic agent for further infiltration. This will help avoid anesthetic toxicity.

VASER Emulsification and Fragmentation

Following infusion, ports are installed at the incision sites, which include a valve to prevent fluid reflux[3]. Ports also protect the edges of the incision during fragmentation and suction phases and enable the use of smaller incisions. The skin adjacent the ports should be covered with a triple-folded wet towel to protect from inadvertent exposure to the vibrating probe[4].

Minimizing ultrasound output provides greater tissue fragmentation while decreasing the probability of complications[3]. In this regard, the VASER System offers a number of advantages over other lipoplasty platforms:

- The VASER solid titanium probes provide more efficient delivery of ultrasound energy, enabling the use of smaller probes and smaller incisions[3].
- VASER probes are available with 1, 2, or 3 tip grooves, providing greater versatility and precision. In general, more grooves provide greater fragmentation efficiency, while fewer grooves are more appropriate for greater penetration in sites with more fibrous tissue[4].
- The VASER System offers a choice of continuous or pulsating ultrasound energy delivery, allowing the surgeon to tailor the approach according to the extent of fibrosis[3]. Continuous mode is appropriate for general use, for more fibrous tissue, and for higher-speed fragmentation. The pulsating VASER mode is appropriate for softer tissue and applications in which finer sculpting is required[4].
- The VASER System uses roughly half of the ultrasound energy of other platforms to emulsify the same amount of fat, thereby reducing the risk of thermal complications such as fibrosis and seroma[3].

For LVTC procedures, deep incisions are made for VASER probe insertion sites. Abdominal incisions are located in the pubic area, bikini area, and above the umbilicus. Pretunneling is performed with a 4.6 mm or 3.7 mm blunt cannula to mix the wetting solution and allow time for the epinephrine to take effect. Pretunneling also facilitates subsequent control and ease of movement of the VASER emulsification probes.

Beginning with a 4.6 mm or 3.7 mm 2-groove probe set to continuous mode, enter the subcutaneous area about 1 cm below the skin. Using a fanning technique and gentle, smooth, long strokes, cover the entire region currently being treated. While the dominant hand moves the VASER probe, the palm of the non-dominant hand should be placed flat on the skin surface to monitor probe position and depth

and help keep the probe within the treatment field. It is important not to allow the probe to linger in one area too long in order to avoid excessive or extended tissue induration following surgery. Applying saline as needed during the procedure is helpful to keep the skin wet and cool.

In each area, the probe should be applied in as many directions as possible at both the superficial and deep levels. Torquing should be avoided as it can lead to excessive heating of the skin protector[4]. The length of probe application depends on tactile resistance of the tissue. During the first pass, the probe should encounter little resistance, as if passing through cheese. Once the fat is adequately emulsified, the resistance should feel more like passing the probe through strands of spaghetti. As a general rule, the probe should be applied 1 minute for each 100 ml of fluid infused. The probe should remain inside the patient at all times – vibration in free air may result in cracking. However, the probe should not be re-applied to areas that have been aspirated[4].

Aspiration

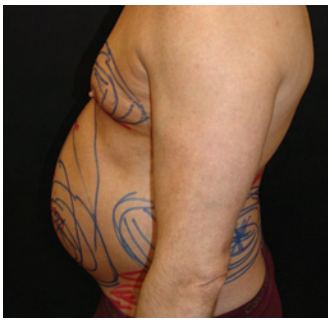
Following fragmentation, the emulsified tissue and fluid must be evacuated. However, more aggressive suction used with other platforms has been associated with trauma to intact tissue. Because the VASER System is more efficient and effective, the fatty tissue is largely liquefied in the fragmentation and emulsification process, thereby obviating the need for higher-speed vacuuming. In light of this, VASER developed the VentX® cannulas, which provide gentler suction and require smaller port sizes than traditional cannulae of the same diameter. The VentX is more efficient – and therefore requires less suction power – as a result of a unique handle vent that continuously clears the suction tube. As a rule of thumb, the VentX cannula diameter should be 1 size larger than the diameter of the traditional cannula appropriate for the specific application[4].

Using 4.6 mm, 3.7 mm, and 3.0 mm cannulas, evacuation should be performed until the underlying skin is smooth and free of lumps. To confirm this, place the cannula under the skin, lift up, and look for lumps or uneven sites within the treatment area. A simple pinch test is also effective to ensure that the treated area has a uniform thickness.

Following conclusion of the procedure and closure of the incisions, the compression hose and warming blanket should remain in place, and the patient should be fitted with a compression girdle while still under general anesthesia.

Special Considerations

Male patients with thick, fibrous abdominal fat and thick skin may require more fluid infiltration and more VASER time using the continuous mode to prevent excessive postoperative induration and waviness. Female patients with sharp, well-defined lower hypogastric borders also may require more fluid infiltration (2:1 ratio), as well as extended VASER application in the continuous mode and superficial emulsification.



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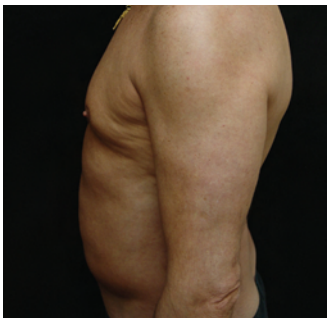
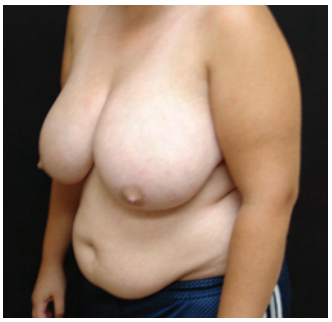


3 weeks Post

49 year old, white male; VASER Lipo of the abdomen, flanks and breasts; Wetting Solution - 2,600cc; Fragmentation time - 25 min; Aspirate - 2,200cc.



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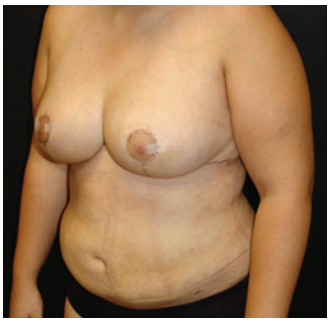
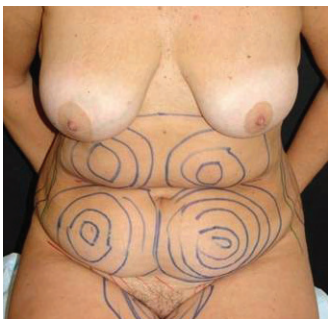


2 weeks Post

18 year old, white female; breast reduction and VASER Lipo of the abdomen, back, flanks, lateral chest walls and pubic area; IV Fluid - 4,200cc; Wetting solution - 5,500cc; Aspirate - 5,550cc.



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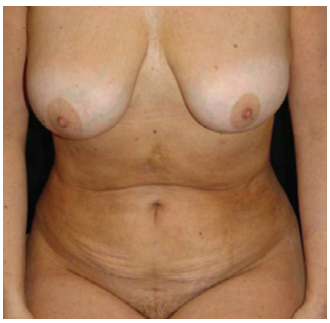

Post

39 year old, white female; VASER Lipo of the abdomen, back, flanks and inner thighs; Wetting solution - 2,700cc (abdomen) and 3,600cc (back, flanks); Aspirate 2,650cc (abdomen) and 2,500cc (back, flanks).

To be safe, any patient who has undergone lipo-extraction of more than 5,000 ml should be admitted to the hospital overnight for observation and fluid and electrolyte management.

Postoperative Care

The patient should continue wearing the compression girdle, with foam padding placed directly over the treatment sites, during recovery. This dressing helps ensure a smooth skin surface, minimizes ecchymosis, and provides greater patient comfort[5]. The patient should be encouraged to begin walking and practicing extremity muscle-contraction exercises as soon as possible following surgery to reduce the risk of deep vein thrombosis and pulmonary embolism[1]. However, patients and caretakers alike should remain vigilant for episodes of orthotic hypotension. Rehydration should also be encouraged,

including electrolytic fluids such as Gatorade. Oral antibiotics should be prescribed for 4 days following surgery. Percocet or Tylenol®, with or without Codeine, is used for pain.

In some cases, such as the presence of underlying medical conditions or after extended surgery, patients should be admitted to the hospital overnight following the LVTC procedure. If patients are discharged the day of surgery, they should have someone at home to monitor them for the first 24 hours following surgery. After the initial 24-hour recovery period, the compression girdle should remain in use, except while bathing, for 2 weeks, after which it should be worn in the evening for at least 1 additional week[2]. The patient may resume normal activities, including returning to work, at their own discretion.

The patient should be seen in the office the day following surgery, and then again in 2 to 3 days. Sutures are removed in 4 to 5 days. Two to 3 weeks after surgery, massaging of treatment sites should be initiated 3 times a day with the palm of the hand or a smooth, round electric massager. Arnica montana tablets and cream and Traumeel® cream may be used to treat postoperative bruising, if necessary. Between 3 weeks and 16 weeks post-surgery, the patient may experience some induration that should improve with massaging[2].

Summary

LVTC is appropriate for healthy individuals regardless of their age, BMI, or skin elasticity. The procedure is capable of correcting "problematic areas" in patients who have tried diet and exercise, but still cannot get rid of genetically disposed fat in the abdomen, flanks, back and, occasionally, the pubic area. As long as the patient is well informed and has realistic expectations, a high degree of satisfaction is likely, with a very low risk of complications.

References

1. Vistnes MD. Liposuction, large volume: safety and indications. Available at: http://www.emedicine.com/plastic/topic532.htm. Accessed July 11, 2008.

2. Giese S. Safety considerations in large volume lipoplasty. Aesthetic Surg J. 2001;21:545-548.

3. Giuseppe AD. Ultrasound-assisted liposuction for gynecomastia. In: Shiffman MA, Giuseppe AD, eds. Liposuction: Principles and Practice. New York, NY: Springer Berlin Heidelberg; 2006:474-480.

4. Cimino WW. VASER-assisted lipoplasty: technology and technique. In: Shiffman MA, Giuseppe AD, eds. Liposuction: Principles and Practice. New York, NY: Springer Berlin Heidelberg; 2006:239-244.

5. Schlesinger SL, Kaczynski AJ. Use of Reston foam in liposuction. Aesthetic Plast Surg. 1993;17(1):49-51.

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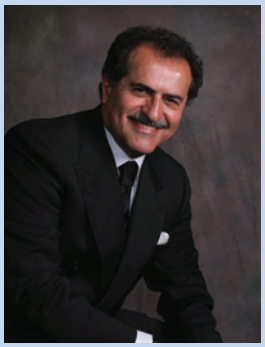

Dr. Asaadi received his medical degree from the Pahlavi University Medical School. He completed his post-doctoral training at Manhattan Eye, Ear, and Throat Hospital, N.Y.; Southern Illinois University, Ill.; and Saint Barnabas Medical Center, N.J. He is certified by the American Board of Surgery and the American Board of Plastic Surgery. He is the past chairman of the plastic surgery department of St. Barnabas Medical Center. He is also a member of the American Society of Plastic Surgeons, the American Society for Aesthetic Plastic Surgery, the American College of Surgeons, the American Medical Association, the Lipolysis Society of North America, the New York Regional Society of Plastic Surgeons, and the New Jersey Society of Plastic Surgeons. He is the recipient of the Heyer Schulte Award for Excellence in Surgery. His more than 25 years in practice have allowed him to integrate and innovate the latest techniques in the field of plastic surgery. Presently, his practice is concentrated on cosmetic plastic surgery of the face and body.

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