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Modified Avelar
abdominoplasty **34**

Flap resection for
inner thigh lifting **36**

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TURNING BACK THE CLOCK

Anti-aging treatments that harness
the hands of time

Facelifting
in the elderly

› Page 7

Advancements in
blepharoplasty techniques

› Page 24



Thigh high

*Inner thigh lift uses novel flap resection
and anchor for improved outcomes*

Cheryl Guttman Krader

SENIOR STAFF CORRESPONDENT

PHOENIX — A minimally invasive technique for inner thigh lifting incorporating a novel design for the dermoadipose flap resection and using the adductor major tendon to anchor the inferior flap is safe, effective and offers decreased morbidity with better and more durable cosmetic results compared to other thighplasty procedures, according to its innovator, Guillermo Blugerman, M.D.

Speaking at The International Society of Cosmetogynecology Workshop held prior to the annual scientific meeting of the American Academy of Cosmetic Surgery earlier this year, Dr. Blugerman discussed the surgical technique and advantages of his “deep-anchor thigh lift.”

“Most other medial thigh lifts are based on Lockwood’s concept of supporting the thigh tissues by fixation to the fascia with sutures. However, these approaches are prone to recurrence of inner thigh ptosis and can still be associated with distortion of the vulvar tissues and scar migration,” says Dr. Blugerman, a private practitioner specializing in aesthetic and reconstructive plastic surgery in Buenos Aires, Argentina.

“The deep-anchor thigh lift avoids these problems. Use of the adductor muscle tendon provides a strong anchor for the inner thigh flap to result in an excellent, long-lasting lift. In addition, the incisions are placed on the sides of the pubis instead of the inguinal sulcus and with care to leave enough skin on the labia side. Therefore, the scars remain hidden by underwear or beach garments, and vulvar flattening is avoided.”

Dr. Blugerman says that as with any procedure, success also depends on proper patient selection, careful surgical planning and establishing realistic patient expectations.



Dr. Blugerman

“We counsel patients that the cosmetic appearance of the inner thigh will be improved, but they should not expect total tightening,” he says.

PREPARING FOR THE THIGH LIFT

Dr. Blugerman uses the Mathes and Kenkel classification method (*Clin Plast Surg.* 2008;35:151-163) to identify patients who are good candidates for inner thigh lifting.

The procedure is usually restricted to female patients, however, because the presence of hair in the inner thigh skin of men makes it difficult to create a dermal flap free of hair follicles.

Patients seeking a thigh lift are assessed for skin laxity, excess fat, lipodystrophy and the need for other body-contouring procedures, with particular attention to the lower abdomen and mons pubis.

“In about half of patients, a conservative approach to liposuction in the inner thigh using an energy-assisted technique (ultrasound, radiofrequency or laser) results in sufficient improvement to obviate the need for excisional surgery. Patients

Thigh *continued*

needing abdominoplasty or surgery to address a ptotic and fat pubic area should have those procedures done prior to the inner thigh lift," Dr. Blugerman says.

SURGICAL TECHNIQUE The amount of fat that needs to be removed by liposuction and redundant skin to be excised are



The dermo adipose flap. (Photos credit: Guillermo Blugerman, M.D.)



The flaps placed in the tunnel.

determined by a "pinch test." Marking of the area to be excised is done while the patient is standing with the knees apart, because marking in the supine position may result in over-resection of the inner thigh lower flap, Dr. Blugerman explains.

The medial incisions are marked in a vertical direction in the lateral borders of the mons pubis and advanced to the adductor tendon projection on the skin. From the adductor tendon projection to the ischion projection, the skin incision is placed in the sulcus between the labia majora lateral aspect and the inner thigh, stopping at the point of projection of the ischion at the buttock's fold.

"The extent of the ellipsoid skin excision ranges from to 2 cm to 5 cm at the central area of the ellipse to be excised," Dr. Blugerman says.

Marking of the dermal-adipose fixation flap is done with the patient in a prone position. The flap measures 1 cm wide at the ends by 8 to 10 cm long, with a central area that is 2 cm

wide at the projection of the vector that will be created during the flap elevation.

The surgery is done with the patient in a frog-leg position using local tumescent anesthesia. Liposuction of the inner thigh is performed using the Avelar approach. Then the epidermis is removed from the skin of the dermal-fat flap, preserving as much dermis as possible.



The tunnel dissection.



The deep fixation of inferior flap.

"Particular care must be taken in performing this step because the small dermal-fat flap anchors the lower inner thigh flap and holds it in place under tension after the surgery," Dr. Blugerman says.

“Avoiding deep dissection of the femoral triangle area at the time of the skin resection prevents serious bleeding and lymphatic trauma. A single IV dose of cefazolin is given intraoperatively for infection prophylaxis.”

Guillermo Blugerman, M.D.
Buenos Aires, Argentina

After removing the rest of the skin ellipsoid area, the dermal-adipose flap is divided into two lateral strips (1 cm wide by ~4 cm long) with a central pedicle. A tunnel is created under the adductor major tendon by blunt dissection using a Halsted forceps,

and with the same forceps, the ends of the dermo adipose strip flaps are grasped one after the other and passed under the tendon. The flaps are wrapped around the tendon and fixed by suturing them together and to the tendon with 2-0 permanent multifilament sutures.

The amount of fat that needs to be removed by liposuction and redundant skin to be excised are determined by a "pinch test."

Excess flap tissue is resected, and 2-0 Vicryl (Ethicon) anchoring sutures are placed to approximate the superficial Colles' fascia, which overlies the tendon, with the subdermal layer of both the superior and inferior skin flaps. Final closure is done with superficial subcutaneous 3-0 Monocryl (Ethicon) sutures and sterile Micropore tape (3M) on the skin to reduce the tension on the inner thigh lift suture line.

"Avoiding deep dissection of the femoral triangle area at the time of the skin resection prevents serious bleeding and lymphatic trauma. A single IV dose of cefazolin is given intraoperatively for infection prophylaxis," Dr. Blugerman says.

Compression garments are used for three weeks, but there is no need for drain placement because there is no flap undermining and no dead space. Most patients can be discharged the same day, and ambulation as early as the night of surgery is encouraged to reduce the risk of deep vein thrombosis (DVT).

"Oral contraceptives are routinely discontinued, and if patients are considered at high risk for DVT based on the preoperative evaluation, active preventive maneuvers are used at surgery, such as sequential compression and use of compression socks," Dr. Blugerman says. ◀

Disclosures:
Dr. Blugerman reports no relevant financial interests.

AVELAR ADVANCES

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*Large series demonstrates safety, satisfaction
with modified abdominoplasty*

KLAGENFURT, AUSTRIA — Analyses of data from 243 consecutive cases support the conclusion that modified Avelar abdominoplasty is a superior approach for removing excess abdominal skin and fat. It can be performed as an ambulatory procedure and results in high patient satisfaction — all while avoiding the serious complications associated with conventional abdominoplasty, according to Peter Lisborg, M.D.

The modified Avelar technique is performed using tumescent local anesthesia and incorporates liposuction of the upper and lower abdomen to allow skin advancement without wide undermining.

STUDY DETAILS Dr. Lisborg, a private practitioner in Klagenfurt, Austria, reported the outcomes from his large series of surgeries performed between April 2002 and September 2010. The patients ranged in age from 20 to 82 years, and more than 90 percent were women. Only 26 patients had rectus diastasis repair, which is performed only when needed.

Overall, 85 percent of patients were satisfied with the outcome. The safety review showed no intraoperative complications and minor postoperative complications that were easily managed. Hematomas requiring evacuation were not observed. A suture fistula developed in 13 patients (5.5 percent) and one patient was admitted to the hospital for management of a minor wound infection, although inpatient care was not absolutely necessary, Dr. Lisborg says.

There were no other infections and no cases of seroma or necrosis. Only two

patients experienced postoperative pain for more than one week, and all patients but one returned to normal activity within one week.

“With its extensive undermining, conventional abdominoplasty creates a huge wound surface and profound devascularization, and it is associated with a prolonged hospital stay and high rate of complications,” Dr. Lisborg says. “These events ... are eliminated or minimized using the technique introduced by Juarez Avelar, M.D., that avoids wide undermining to preserve the perforating vessels and maintain flap perfusion.

“Furthermore, using IV sedation with tumescent local anesthesia in a modification introduced by Guillermo Blugerman, M.D., allows the surgery to be performed as an ambulatory procedure and further enhances safety by avoiding risks associated with general anesthesia,” he says.



Superficial resection of the skin only, preserving subcutaneous structures (arrow). (Photos credit: Peter Lisborg, M.D.)



Three months postoperative (same patient as top right photo).

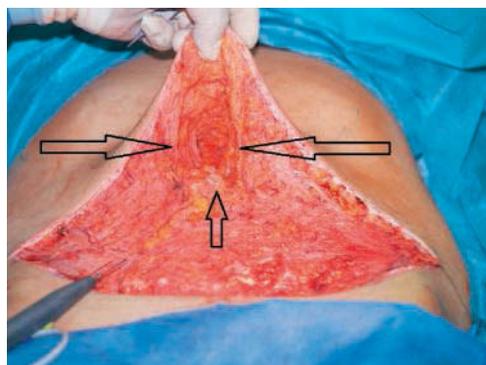
“Considering operative morbidity, I believe the Avelar technique is the biggest breakthrough that has occurred in abdominoplasty.”

Dr. Lisborg says the greater safety of the modified Avelar technique allows for more liberal criteria in selecting patients for abdominoplasty. He discusses a patient with a history of open cholecystectomy who safely underwent the modified Avelar procedure: “In this case, there would be a relative contraindication to performing conventional abdominoplasty due to the risk of skin

necrosis after extensive undermining,” he says. “However, the danger is avoided with the Avelar technique because it maintains blood supply in the flap.”

When performing the modified Avelar procedure, Dr. Lisborg’s tumescent anesthetic solution contains lidocaine, epinephrine and sodium bicarbonate, and the total infiltrated volume ranges from 4 to 7 liters (mean 4.5 L). He also performs liposuction of the hips for body contouring in addition to the abdominal liposuction (moderate in the upper abdomen and radical under the skin to be resected), done as part of the Avelar procedure.

After the liposuction, superficial skin resection is performed only through the dermis, with attention to preserving the subcutaneous structures, including the arteries, lymph vessels and nerves. “I perform full-thickness skin excision without



Limited undermining with preservation of the paramedian neurovascular bundles (large arrows), in preparation for umbilicus transposition (small arrow).



Preoperative patient after Kocher incision.

de-epidermization, which saves time, while preservation of the lymph system in addition to the arteries eliminates the need for drain placement and the risk of seroma,” Dr. Lisborg says.

When performing full abdominoplasty with umbilicus transposition, undermining is carried out only to the medial plane. If rectus diastasis repair is needed, undermining of the median plane is continued superiorly to the xiphoid. A V- or U-shaped incision is made for umbilicus transposition because there is a risk of stenosis when making a round cut into the abdominal flap.

After umbilicus transposition, direct wound closure is carried out by folding over the subcutaneous structures. Sutures to the deep fascia are used if a lifting effect or the pubic region is not desired.

PROVING THE PRINCIPLE In order to obtain objective evidence that the Avelar technique preserves perfusion, Dr. Lisborg has been measuring skin circulation before and after surgery using laser Doppler flowmetry. Results show a hyperemic response at 24 hours post-op in all regions undergoing tumescent anesthesia, with a return to preoperative levels in two to three days.

“The hyperemia represents a vasodilatory reaction to ischemia that is induced by the epinephrine in the tumescent anesthetic solution, but importantly, we have not seen any evidence of significant reduced perfusion after the Avelar technique,” Dr. Lisborg says.



Preoperative patient with abdominal adiposity and flaccid skin.



One day post-op, no drain (same patient as immediate left).

To establish a benefit for maintaining circulation using the modified Avelar technique versus conventional abdominoplasty, Dr. Lisborg hopes to obtain ethics committee approval for conducting a comparative study. “Although I no longer perform conventional abdominoplasty with wide undermining of the flap because I consider it unethical, we would need to enroll just 10 patients in each group to achieve sufficient power to demonstrate a statistically significant difference,” he says. ◀