A shaped and tight, round buttocks is a widely recognized symbol of attractiveness. That is why, over the course of time, there have been numerous surgical procedures proposed to hinder the physiological breakdown of this region. Our surgical technique for gluteopexy applies suspension sutures with absorbable polylactic cones (Silhouette Lift, Irvine, California) to achieve aesthetic improvement in anteroposterior projection of the gluteal region (Figure 1).

Biodynamic evaluation of the movement of the lower legs reflected in the gluteal tissues previously has been carried out to evaluate the best position for the sutures. The result of a histological study of the reaction of adipose tissue surrounding the cones previously has shown that, 3 months after insertion of the sutures, fibrous scar tissue is sufficiently developed to resist the weight of the tissues. On the basis of this finding, the authors decided to perform the gluteopexy with sutures, in 2 surgical steps. During the first step, the sutures are inserted in the adipose tissue without any proximal fixation. In the second step, performed 3 months after the first procedure when the fibrous reaction is more solid, the sutures are tightened to obtain the gluteopexy. Among the advantages of this technique are its simplicity, the fact that it produces no traumatic effects, and the fact that it can be performed with local anesthetic, reducing surgical time. It is also possible to combine this procedure with lipofilling or liposuction techniques.

### Patient Selection

Gluteal defects previously have been described and classified by González. The classification of the gluteal skin ptosis according to González starts by marking the vertical M line passing through the middle of the thigh, seen from the back. The vertical T line passes through the ischial tuber, and it will be more medial in relation to the M line. Zero degree ptosis is when the crease does not reach the T line. In degree 1, the crease passes over the T line. In degree 2, there is moderate preptosis and the crease reaches the M line. Degree 3 goes beyond the M line.

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**Dr de Benito** is a plastic surgeon in private practice in Barcelona, Spain. **Dr Pizzamiglio** is a cosmetic surgeon in private practice in Marbella, Spain.

**Corresponding Author:**

Dr Javier de Benito, Instituto Javier de Benito, Gran Vía de Carles III, 71-75, 08028–Barcelona, Spain.

E-mail: drdebenito@gmail.com
line, but there is no ptotic tissue at the M line. In degree 4, there is ptotic tissue at the M line. Applying this classification system, patients presenting degree 0 to 3 can be considered appropriate candidates for gluteopexy. Patients with degree 4 ptosis due to massive weight loss (MWL), those with excessive buttocks volume, and those with unrealistic expectations should not be selected for this procedure. The ideal patient for a buttocks suspension with Silhouette has a body mass index (BMI) of 22 to 30, ptotic buttocks as described above, good muscular tonicity, and a minimum pinch test of 3 cm in the center of the gluteal area. Patients with insufficient results after a surgical buttocks lift or those dissatisfied with previously placed gluteal implants may also be candidates. Our patient selection has proceeded according to the above indications rather than by age, sex, tissue quality, or other parameters, even though some patients may require augmentation in addition to elevation and projection.

**OPERATIVE TECHNIQUE**

**First Procedure**

In the first-step procedure, preoperative marking is completed with the patient in a standing position. The site for a 2-cm incision is marked at the apex of the intergluteal fold. The exit-point line runs parallel to the subgluteal fold, 3 cm above the entry incision. The medial exit point is marked 3 cm from the intergluteal fold. The lateral point is marked at the border of the lateral buttock hollow. The 4 intermediate exit points are marked equidistant between the medial and lateral points. Twelve suture paths are traced from the incision line to the corresponding exit point (Figure 2).

The operation is performed on an outpatient basis under local anesthesia (5 mL of 1% lidocaine with 1:100 000 adrenaline injected in the incision site [Figure 3] and 1 mL injected in every exit point [Figures 3 and 4]). Infiltration in the subcutaneous tissue is unnecessary along the suture line, since suture insertion is not painful.

With the patient in a prone position, the skin is incised and the sacral cutaneous ligament identified. The 2-0 suspension sutures, with 10 empty absorbable polylactic cones at the end, are inserted (usually 6 per gluteus) with the aid of a sharp metal guide (Figure 1). The distal end of the suture is connected to an 8-inch straight guide; the proximal end is connected to a 26-mm curved needle. The guide is introduced through the incision and follows the line drawn on the skin at a medium depth within the adipose tissue. It is important to introduce the suture inside the adipose layer, keeping it far from both the superficial muscle fascia and the deep derma (Figure 5). Pinching the gluteal muscle can provoke pain, while pinching the derma can cause skin depression.
Once the sutures are inserted, the sacral ligament is pricked with the proximal curved needle. The first exit point of the sutures is in the lower buttock area, 3 cm from the intergluteal line and 3 mm above the subgluteal fold. The other 6 exit points are 2 or 3 cm apart along a line parallel to the subgluteal fold. To help differentiate the right-hand sutures from the left, we recommend attaching the proximal end of the sutures with numbered Klemmer forceps (Figure 6) while waiting to introduce each one to the corresponding suture on the other side. In this way, for example, the first pair of right and left sutures is attached to the sacral cutaneous ligament without the risk of confusion with the other sutures. Next, the proximal ends of the sutures are rolled in pairs and then all are buried underneath the incision without creating any traction on the tissue. The sutures are not tightened and the distal ends remain free; they are simply hidden within the sacral cutaneous ligament pocket while waiting for the second intervention after 3 months (Figure 7). The surgical incision is sutured with Monocryl or Vicryl 4-0. Once the operation is finished, the wound is covered with a sterile dressing. The patient is instructed to wear a “shorts”-like sheath for 2 weeks and to follow an antibiotic and anti-inflammatory regimen for 5 days.

**Second Procedure**

After 3 months, with the patient again under local anesthesia, the incision is opened. The proximal ends of the sutures are identified and separated, pulled through a network of 1 × 2-cm polypropylene mesh to further stabilize the anchorage system, and then tied, in contralateral pairs, with 6 knots (Figure 8). To anchor the sutures in pairs without creating too much traction on them, the assistant uses his or her hands to pull up both gluteal sides until all knots are tied. The final buttocks elevation is achieved by adipose tissue compression.
The surgical incision is sutured with Monocryl or Vicryl 4-0 (Figure 9A,B). The wound is covered with a sterile dressing, and each side of the buttocks is stabilized with 3 elastic sticking plasters (10 cm wide, 25 cm long) to reduce movement of the area during the first postoperative week. The patient is instructed to follow an antibiotic regimen and take painkillers as needed for 5 days. A sheath is worn for 2 weeks. The patient is advised to avoid flexion movements during recovery.

**CLINICAL NOTES**

The advantages of this no-trauma technique are its simplicity and the possibility of being performed under local anesthesia with rapid, relatively pain-free recovery. In our experience, patients confirm that the first surgical step does not produce any discomfort. The second surgical step may result in a feeling of tension or pain when sitting, which can be controlled with painkillers. During the first 2 weeks after the second-stage surgery, patients are most comfortable when standing or lying down. It is advisable to avoid long car trips or sitting for hours at a time. We recommend 15-minute walking breaks during every hour if the patient must be seated for work or other reasons. There is no specific recommendation for sleeping position. Normally, after the first 2 weeks, all positions will feel natural, without any discomfort. Sports activities must be suspended for a month after both operations.

After the second surgery, the buttock surface might not appear homogeneous due to the traction on the vertical septa in the subcutaneous tissue. This gradually resolves during the first few weeks. At the same time, the buttocks shape is stabilized.

We treated a series of 34 patients ranging in age from 25 to 60 years, with an average age of 48.6 years. All patients signed a specific informed consent. Most in that...
series (75%) were Western European, and the remainder were of Russian descent. Among the 34 patients treated with this technique between June 2008 and December 2010, 1 patient developed a hematoma, 3 patients complained of pain or discomfort when sitting and moving, 1 patient had 2 small skin depressions due to tissue fibrosis, and we replaced 2 sutures in 1 patient due to rupture during tractioning.

While we did not formally evaluate patient satisfaction, follow-up was frequent. After 6 months, we estimated that about 80% of patients had a stable and satisfactory result; 20% said they had noticed a slight decrease in volume after 6 months but were otherwise happy with the buttock lift. After 1 year, patients generally were still happy with

Figure 11. After 3 months, the scar tissue has grown inside the knots and around the polypropylene sutures.

Figure 12. After 11 months, fibrofatty tissue with reduced chronic granulomatous inflammatory reaction, with the presence of giant cell-type “foreign body”; deposition of extracellular matrix collagen type. Presence of residual cones.

Figure 13. (A) Preoperative view of a 46-year-old woman desiring improvement in her buttocks contour. (B) Six months after gluteopexy combined with liposuction of the hips and thighs.
the elevation but complained of some volume loss. Future studies should include a more accurate measure of patient satisfaction, the lack of which is a limitation of the present study.

**DISCUSSION**

The cornerstone of the development of the gluteopexy surgical technique in 2 steps was the biodynamic evaluation

**Figure 14.** (A, C, E) Preoperative views of a 42-year-old woman desiring improvement in her buttocks contour. She also underwent liposuction of the love handles. (B, D, F) Seven months after gluteopexy.
of the great buttock muscle related to the skin traction of different movements. In particular, we analyzed and quantified the buttock muscle skin excursion by measuring how much predrawn squares were elongated in each square on the buttocks skin with the patient standing up, as well as during the half-seated position and the crouched position. This showed that areas 11, 12, 13, 14, and 15 are those with more skin elongation (Figure 10). Suspension sutures must therefore be placed in the aforementioned areas for vertical traction; this is why the procedure is divided into 2 surgical steps, in order to guarantee a strong enough fibrous tissue to resist the traction in these areas during movements. After the first 3 months, the production of fibrous tissue is strong enough to maintain the suspension of the buttocks tissues. During these early months, the cones guarantee a temporary fixation of the tissues, grasping the fibrous septum of the adipose tissue. Once the fibrous tissue has been fixed around the sutures and inside the knots (Figure 11), the cones are unnecessary. In fact, approximately 12 months after their insertion, they will be almost completely reabsorbed (Figure 12).

Figure 15. (A, C, E) Preoperative views of a 43-year-old woman desiring improvement in her buttocks contour. She also underwent liposuction of the love handles. (B, D, F) One year after gluteopexy.
The longest patient follow-up for buttock suspension with Silhouette Sutures is 2.5 years. Patient and surgeon satisfaction has been adequate. However, it is still early to judge long-term results. A future “resuspension” of the sutures after several years might be necessary, as is sometimes the case with the facial Silhouette Lift technique.

This technique is not a substitute for a buttock prosthesis but rather an additional option for the cosmetic surgeon. Because the surgery is atraumatic, the potential for complications is minimal. Recovery is swift and without major discomfort for the patient. However, it should be noted that if the proximal ends of the suture are not carefully buried, the patient may experience pain in the incision area; just a couple of subcutaneous stitches can avoid any contact of the sutures with the derma.

It is important to emphasize that careful patient selection and evaluation, together with the correct positioning of the threads, are all essential to achieving a good result. Clinical results are shown in Figures 13 through 15.

**CONCLUSIONS**

The goal of gluteopexy is to improve the anteroposterior projection of the gluteal region. The advantages of the 2-step suture technique are its simplicity, that it produces no traumatic effects, and that it is performed with local anesthetic, reducing surgical time. Recovery is rapid and usually produces only mild discomfort. It is possible to combine this procedure with lipofilling or liposuction techniques. The limit of this procedure is that it requires the patient to undergo 2 separate surgeries.

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