Buttocks Lifting:
The Dermo-Tuberal Anchorage Technique

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Learning Objectives:
The reader is presumed to have a broad understanding of plastic surgical procedures and concepts. After studying this article, the participant should be able to:

1. Describe the etiology of gluteal ptosis.
2. Analyze the different techniques described concerning the gluteal-trochanteric region.
3. Describe the basic principles of the dermo-tuberal anchorage technique and its indications.

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Background:
Few techniques for the correction of buttock ptosis have been described in the literature.

Objective:
A technique for treating buttock ptosis, as well as long or asymmetrical buttocks, by making an incision in the gluteal crease is described.

Methods:
With the patient standing, the redundant skin was delineated and marked by pushing the skin towards the ischial tuberosity with two fingers, and tucking in the redundant skin, creating a new crease. The hanging skin, previously marked, was de-epithelialized. A longitudinal cut was made through the dermis and subcutaneous fatty layer until the ischial tuberosity was exposed, to which the edges of the dermal flaps were anchored.

Results:
This technique was performed in 39 patients. The results were satisfactory, generally producing good quality scars and long-term lifting of the buttocks. The few complications were limited to immediate scarring problems; 3 cases required scar touch-up.

Conclusions:
The dermo-tuberal anchorage technique for treatment of buttock ptosis is simple to perform and produces good long-term results. It can be used in conjunction with lipoplasty, lipografting, and/or gluteal augmentation. (Aesthetic Surg J 2005;25:15-23.)

Currently, there is no generally accepted technique for the correction of buttock ptosis. Pitanguy1 was the first to propose a solution; according to his first report in 1964, his technique addressed both buttock ptosis and the trochanter adipose tissue, which produced a long scar along the gluteal crease that extended nearly to the anterior superior iliac spine (ASIS). Delerm,2 Regnault and Daniel,3 Planas,4 Villain,5 Hoffman and Simon,6 and Ribeiro et al7 made significant changes to that technique in the 1970s, when high-rise swimsuits that exposed more of the buttocks came into fashion. Agris8 and Vilain9 used the dermis to achieve improved fixation and anchorage of the ascending flap, while avoiding wide scars and subsequent secondary ptosis. They always treated the gluteal-trochanteric adipose tissue concomitantly with the buttock ptosis, a technique that resulted in lengthy scars extending beyond the gluteal crease.

With the advent of lipoplasty, this type of surgery was largely abandoned, since lipoplasty can correct most of the trochanteric lipodystrophies without a long incision. Recently, however, interest in techniques to treat trochanteric-buttock ptosis has revived, this time as a means to treat laxity caused by significant weight loss, undesirable lipoplasty sequelae, and severe local deformities. Baroudi,10 Lockwood,11, 12 and Pascal13 have made excellent contributions to the development of this approach. However, their techniques all produce long scars, which may be acceptable when there is a large amount of hanging skin and trochanteric-buttock ptosis, but which are unacceptable in less severe cases in which...
the patient’s major or single complaint is excess ptotic skin at the gluteal crease level. Furthermore, such surgeries fail to adequately correct buttock ptosis.

Pitanguy was also the first to describe a treatment for cases in which the ptotic skin and laxity occurred only at the lower gluteal area. His recommendation was to remove the skin and minimal subcutaneous tissue exclusively, although he did not clarify why removal of subcutaneous tissue should be minimized. This technique never achieved widespread use, in part because a patient who complains of ptosis usually wishes to shape the whole buttock. It was useful only for the removal of redundant skin found in the gluteal crease area. Since the whole buttock sags before the skin becomes loose at the crease, the crease itself moves to a more unaesthetic caudal position; therefore, most patients request the concomitant lifting of the gluteal crease and removal of redundant skin, which cannot be achieved by the Pitanguy technique or similar procedures, such as the recent non-dissection method described by Toledo.

We have observed that an ideal technique to treat buttock ptosis should not only enable the removal of the excess ptotic skin, leaving the scar inside the gluteal crease, but also provide a lifting effect on the crease at the same time. We conceived a technique for buttock ptosis correction that can also shorten long buttocks, since it enables a true lifting of the gluteal crease. The technique consists of fixation of the local dermal tissue on the ischial tuberosity to form a new crease, correcting excess ptotic skin and, if necessary, lifting the crease.

**Etiology and Anatomy of the Gluteal Crease**

The gluteal crease marks the lower limit of the gluteal area. Interestingly, the gluteal crease has no relation with the gluteus maximus muscle; although it caudally delimits the gluteal region and defines the beginning of the thigh,
it has no relationship to the origin site of the thigh’s internal and posterior muscles, such as the gracilis, the vastus, etc. The gluteal crease is part of the supporting system that maintains soft tissue structures in place in the gluteal and thigh area as first described by Morestin in 1894. This supporting system extends from the ischial tuberosity to the lateral portion of the pubis. In the thigh, it advances up to the surroundings of the inguinal ligament and extends to the ASIS. The system is composed of dense connective tissue and connects osseoligamental structures to the derma to secure the skin and subcutaneous tissue over this whole area. It is also responsible for the crease that begins at the inguinal region, advances through the crural region, and extends to the gluteal region, where it splits in 2 parts and finally forms the intergluteal crease where it joins the coccyx and the sacrum (we described this as the sacro-cutaneous ligament in 1992) as well as the infragluteal crease at the expanding portion over the ischial tuberosity.

In young and thin people, the gluteal crease is usually absent or, if present, usually does not extend beyond the sagittal line that crosses at the middle of the posterior

Figure 2. A, The epidermis on the marked area is removed. B, An incision into the derma is made until the muscle fascia and the tissue adjacent to the ischial tuber are reached. C, The finger palpates and finds the ischial tuber. D, Anchor sutures gather the tissue adjacent to the ischial tuber, and the borders of the upper and lower dermal incision. E, To complete anchoring, 5 to 6 sutures are made. F, It may be necessary to medially rotate buttock or thigh tissue for modeling, using manual pressure.
part of thigh. The crease becomes longer as the buttock sags, because of volume gain or laxity and the sagging of gluteal tissue over the thigh. Such gluteal sagging is not encompassed by the gluteal crease because of the strong connective tissue that supports it. Consequently, as the heavy gluteal tissues sag, the folds become increasingly visible, and the gluteal tissues begin to fall over the thigh, crossing over the infragluteal crease. Thus, buttock ptosis is simply gluteal tissue below the skin fold, or infragluteal crease. Buttock ptosis is acceptable and fairly common when located at the inner part of the thigh close to the pubis, but is considered unaesthetic when located at the posterior and lateral parts of the buttock. We define unaesthetic buttock ptosis as sagging that exceeds 90 degrees at the angle where the buttock joins the midline of the posterior thigh.

In certain cases, when the supporting system is not sufficiently strong, the whole buttock slides caudally, spreading out, losing projection, and becoming elongated and flat. Such sagging of the supporting system may occur after significant weight gain followed by weight loss. The development of long buttocks in younger patients who experienced no weight changes can be explained by a supporting system that is congenitally long at the ischial tuber and that barely tractions the crease.

A good understanding of ptosis etiology and knowledge of the gluteal crease anatomy enabled us to develop a technique that focuses on creating a new crease and reproducing the lifting and support mechanisms of the natural gluteal crease by using the derma of the redundant tissue.
to secure the new crease in a more cephalic position, similar to the original connective ligamental system.

Recently, the use of gluteal fascia at the area of the lower gluteal crease or to create a new lower crease at a higher position was emphasized by Coban et al.\textsuperscript{20} and Kirwan.\textsuperscript{21} In our first cases, we operated on several patients using the fascia as anchoring, but we learned that superior results with respect to maintenance of the crease and the rotation achieved to mold the buttocks were obtained by anchoring around the tuberosity, because the original anatomic principle that forms the crease was thus reconstituted; that is, the local tissues adhere to the ischial tuberosity and not to the muscles.

\textbf{Surgical Technique}

\textbf{Preoperative marking}

Preoperative marking is extremely important. With the patient standing, pressure was applied with the tip of the index and medium fingers at 2 points just above the original gluteal crease, on the medial line of the thigh, pushing the redundant tissue towards the ischial tuberosity so as to tuck in the ptotic tissue (Figure 1, A). The fingers were kept about 4 cm apart from each other, with their tips aligned parallel with the gluteal crease. The tucking-in created an imaginary line by bringing together the borders of the tissues immediately cephalic and caudal to the tucked-in tissue and creating a new crease. Those borders delimited our incision. By marking them with a dermographic pen, we obtained a fusiform shape (Figure 1, B). As we applied pressure over the ischial tuberosity, the fingers were pushed from outside in, forcing the gluteal tissue to rotate towards the median line to shorten the length of the scar. More than 1 attempt was necessary, changing the position of the fingers and reducing and increasing the pressure to achieve the ideal shape that will result in creation of as short a scar as possible and the best aesthetic result (Figure 1, C). The digital pressure points were then marked. To prevent marks from being removed during surgery, they were also marked outside the fusiform area (Figure 1, D).

\textbf{Figure 5.} A, C, Preoperative views of a 31-year-old woman who previously underwent an unsuccessful high-tension buttocks lift performed by another surgeon and complained of long buttocks. B, D, Postoperative views 1 year after buttocks lift.
Dermo-tuberal anchoring

Surgery was performed using general or epidural anesthesia. The previously marked area was infiltrated in a tumescent fashion, but reaching the deep layers as well, with a combination of saline solution and adrenalin 1:400,000 for a hemostatic effect and for easy epidermis removal. The epidermis was removed in the whole delimited area (Figure 2, A). As soon as the dermis was exposed, a line was drawn along the fusiform areas, exactly across the area from which the skin was peeled off, parallel to the original crease. After incising the dermis, a scalpel was used to dissect along the linear mark, starting at the lateral portion, until the fascia of the gluteus maximus was reached. The dissection was then continued along the ischial tuberosity until the white connective tissue very close to the ischial tuberosity was reached (Figures 2, B and 3, A). The ischial tuberosity itself was not exposed, since the suture would be anchored on the adjacent tissue which is sufficiently strong to support it, rather than on the ischial tuberosity or its periosteum (Figure 2, C).

The first anchor suture was placed at the lateral digital pressure point, to be anchored at the lateral portion of the ischial tuberosity (Figures 2, D and 3, B). The ischial tuberosity is about 5 cm wide, enabling about 5 or 6 anchoring sutures to be placed from the first most lateral point to the last most medial point. We placed successive 2-0 nylon sutures, gathering the cephalic and caudal edges of the dermal incision and the tissue that covers the ischial tuberosity. No knots were tied at first, in order to gather the deep tissues with the other sutures (Figure 2, E). Extra sutures on the lateral area, gathering some gluteal fascia and the ischial-pubic ligament medially, were sometimes necessary. The knots were tied in the same sequence as the repair and, after completing this series of sutures (which are anchored on the ischial tuberosity adjacent tissue), a second series of sutures was made to approximate the caudal and cephalic dermal tissues, finishing the tucking-in (Figure 4). A third series of sutures united the skin borders and meticulously closed the surgical wound to avoid leaving any dead space that could lead to dehiscence of the wound. The procedure
was completed with simple or intradermal subcutaneous sutures.

**Postoperative care**

On the first postoperative day, patients were permitted to ambulate and sit, placing the weight of the body on the posterior thigh. To avoid tension at the surgical wound site, they were strongly advised not to flex the chest over the thigh. No special belts were required, but we did place a wide adhesive tape (Micropore or similar) over the wound, from buttock to thigh, to avoid local tension. Patients were required to use surgical tape until 4 months postoperatively. Non-opioid analgesics were prescribed for postoperative pain. The sutures are removed between 7 to 10 days postoperatively. Patients were permitted to drive at 20 days postoperatively.

**Results**

Thirty-nine patients underwent the described technique. In 21 patients, we also placed buttock implants to correct hypoplasia, with or without lipoplasty of adjacent areas for buttock reshaping. In 14 cases, the buttock lift was not associated with buttock implants but was combined with adjuvant procedures to reshape the buttocks, such as lipoplasty to correct fat deposits on the buttocks or trochanter adiposity, or lipoinjection in the trochanter depression for buttock augmentation. The technique alone was used in only 4 cases, showing that most patients wish to have full buttock or posterior contour reshaping. Patient satisfaction rate was high. No cases of

*Figure 7. A, C, Preoperative views of a 52-year-old man who complained of flat and sagging buttocks. B, D, Postoperative views 6 months after buttocks lift and placement of gluteal implants.*
ptosis relapse occurred, since the tucking-in procedure eliminates local redundancy. Among the 17 cases in which the buttock lifting was done exclusively to shorten the buttock, and no significant ptosis was present, 2 patients noted a discreet partial loss of the lifting effect but were nevertheless satisfied with the result. The quality of the scar was usually very good, especially laterally (Figures 5 to 8).

The technique was used in 6 patients to correct buttock asymmetry or an infragluteal crease at different heights, which is fairly common among the general population. In order to avoid unrealistic expectations, patients were informed in advance that it is not always possible to completely correct this problem. In one of these cases, touch-up was required 6 months postoperatively to improve the minor asymmetry that still remained. Complications were rare, the most frequent of them being small wound dehiscence. We have had no such complications during the past 16 years, thanks to more meticulous procedures for plane closure.

Discussion

Attempts to correct gluteal ptosis by simply removing the redundant tissue and uniting the wound’s borders often result in wide, unaesthetic scars and an unaesthetic appearance. The removal of only skin and minimal local tissue, as suggested by Pitanguy, improves results because the supporting tissues are thus preserved (a very important consideration). I have found Pitanguy’s method to be a good technique, but one that is useful only in cases of mild laxity or in which lifting and shaping of the buttocks is not a consideration.

The technique described in this article reproduces the local anatomy, securing the skin and ischial tuberosity, and respecting the anatomic principle of the original gluteal crease. When anchored on the ischial tuberosity, the dermal tissue is strong enough to create a lifting effect in the area and may be used to shorten overly long buttocks and to correct asymmetries or a double crease. Another advantage of using dermal tissue is that a wide scar can be avoided by simply taking care to approximate the tucked-in dermal leaflets. The dermis provides resistant closure of surgical planes, thus avoiding poor quality scars.

Since the anchoring traction may be adjusted to provide more or less tension, the lifting effect also may be controlled. If the goal of surgery is not to lift the buttock crease but only to remove redundant tissue that sags over the thigh, this technique is also useful because, with the support of the tuber, the surgical wound is better immobilized and the sutures in the deep planes are stronger,
thanks to the firmness of the dermis. By anchoring the
caudal dermis medially, the redundant tissue is “reefed
up,” which allows for tightening of the envelope, provid-
ing firmness to this area and correcting the laxity. When
the dermal leaflets are anchored medially, a medial but-
tock rotation results, which helps not only to shorten the
scar on the lateral portion but also to round the buttock,
correcting the redundant lateral volume that is often
associated with ptosis.

**Conclusion**

The described buttock lifting technique has been
shown to be useful for correcting not only buttock prosis
but also buttocks that are too long, have a double crease,
or are asymmetrical. The technique can be used alone or
in conjunction with lipoplasty, lipografting, or gluteal
implant placement for buttocks augmentation and re-
shaping. It has proven to be a useful technique that
results in good scar quality, long-term results, and high
patient satisfaction.

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