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Vectorial Treatment of Infragluteal Fold

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INTRODUCTION

Undoubtedly, the frequency of gluteal fat grafting has increased considerably in the past decade worldwide. In 2020, 84% of procedures performed by American Society of Plastic Surgeons member surgeons consisted of buttock fat infiltration rather than buttock augmentation with implants or buttock lift.[1] Today, autologous fat infiltration is considered the gold standard in the treatment of the gluteal region.[2] Safety considerations for gluteal fat infiltration have made the procedure better with a simple recommendation: always infiltrate in the subcutaneous tissue, never in the muscle.[3,4] Treating the posterior contour requires a complete knowledge of the anatomy of the buttock, not only to achieve the best aesthetic result but also to avoid complications. The infragluteal fold (IGF), often ignored or inadequately treated, is one of the most challenging areas to treat.[5]

THE IGF

Cadaveric dissection reveals that the IGF is a connective fibrous band extending from the ramus of the ischium, the apex of the sacrum, and the coccyx, to the medial third of the cutaneous fold dermis through dense and fibrous insertions forming a mesh, adhering to the dermis without clear limits.[6]

Ideally, the fold develops in a downward slope from middle to lateral but not beyond the union of the semitendinosus muscle to the femoral biceps, which represents a mid-gluteal vertical line.[7] Thus, the line of the IGF should be short. A long line that extends beyond the midline will result in an unaesthetic appearance (ptotic buttock). The inclination is important, as well. Any horizontal line or inverse rising line is not pleasing and should be treated.

The orientation of IGF fibers offers a hammock-like support system.[6] The infragluteal area is a support zone for the buttock, and treatment of this area with liposuction should be avoided.[5,8] A volume deficiency in this zone is much more common and often mistreated by inexperienced surgeons.

TYPES OF IGF DEFECTS

Although the ideal IGF corresponds to a descending line that runs from medial to lateral at a 30–45 degree angle to the vertical midline of the buttock, defects can occur due to a longer length, inverted angulation, inadequate depth, or secondary problems from previous surgery.

TECHNIQUES TO TREAT THE IGF

We present three surgical techniques that treat different aspects of the IGF, correct different problems, and have different aesthetic goals according to the vector in which they are performed. (**See Video [online]**, which displays the three techniques of vector treatment of the IGF.)

The Vertical Technique

This approach is performed vertically from above the IGF. Usually, the access is a midline incision located above the IGF, or it is performed above the buttock. The patient's position is prone or lateral decubitus. The cannula should have one orifice and be thick (4 or 5 mm), long (32 cm), and directed to the IGF and beyond. Around 180 cm^3 of fat should be deposited in a retrograde fashion in several vertical pillars across and perpendicular to the IGF (10 cm below it and 5 cm above it), external to the vertical midline of the buttock. The goal is to have these fat deposits form pillars that not only support the buttock but also help restore the volume of the gluteus maximus muscle when it is inserted into the lateral portion of the greater trochanter and iliotibial tract.[9,10] It is an excellent option to restore volume in the ptotic gluteus, as it provides more support by filling the posterior thigh and avoids the disparity that is observed when there is a large volume of gluteus with a very thin leg.

The Oblique Technique

This technique is performed with an incision 1.5 cm below the anterior iliac spine. It can be performed with the patient in lateral or ventral decubitus. Approximately 120 cc of fat are infiltrated with fan-shaped movement, depositing the fat in a retrograde manner, pulling the buttock obliquely (upward and lateral) to leave the fat

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Received for publication June 23, 2022; accepted November 15, 2022.

Plast Reconstr Surg Glob Open 2023; 11:e4750; doi: 10.1097/GOX.0000000000004750; Published online 11 January 2023.

Disclosure: *The authors have no financial interest to declare in relation to the content of this article.*

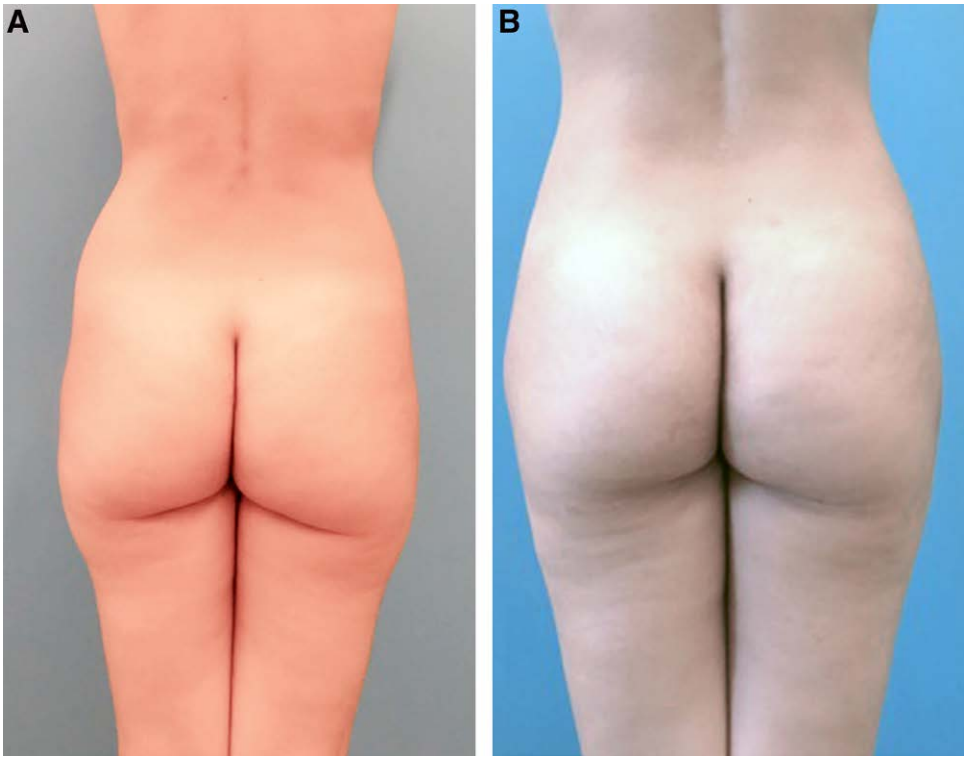

Fig. 1. A 32-year-old woman before (A) and after (B) vector treatment of the IGF with the three techniques together, 6 months after surgery. Reduction and improvement of the IGF is observed.

threads as a suspended bridge, with the objective of forcing this fat to fill spaces and tighten them, preventing the buttock from returning to its previous position. In this way, buttock sagging is limited, and the IGF is improved. The cannula used is usually 4 mm in diameter and 27 cm long with four orifices. The infiltration starts 3–4 cm below the IGF and ends 4 cm above it.

The Horizontal Technique

This technique is aimed at treating the superficial aspect of the IGF. This direct fat graft to the infragluteal crease is performed through an incision placed in the lateral infragluteal area; the IGF is grafted from lateral to medial. Care should be taken to avoid grafting cephalic to the infragluteal crease and not too medial (to the perineal area) to avoid volume perception in this thin area. This technique allows us to camouflage or conceal this area. A thinner 3-mm cannula is used, and the fold is marked to deposit the fat as superficially as possible.

All approaches can be used separately or in combination because each one focuses on different goals to improve the IGF. The vertical approach is aimed at shaping the transition between the buttock, the hip, and the thigh, restoring volume to the thigh and the inferolateral buttock area. The oblique one is directed to restore support and to lift the buttock, whereas the horizontal superficial one tries to conceal, far more, the superficial IGF (Fig. 1).

To date, the three authors have treated 223 cases with a combination of the three vectors. The techniques are reliable and suitable for the indicated purposes.

CONCLUSIONS

The buttock is a social and sexual keystone. Knowing the anatomical elements that form it is vital to improving it aesthetically. The IGF is an area that is frequently left untreated. We propose three fat infiltration approaches focused on improving the relationship between the gluteus and the leg, decreasing the length and depth of the IGF, and providing more vertical support to the gluteus by means of fat infiltration in different vectors and approaches. We hope that with this contribution, the plastic surgeon can achieve better aesthetic outcomes with the opportunity to fix more detailed and specific elements of the buttock.

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