Intramuscular Gluteal Augmentation
The XYZ Method

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KEYWORDS

• Buttocks implants • Gluteoplasty • XYZ method • Intramuscular implants • Complications

KEY POINTS

- Visibility of the gluteal implants is a sequela that is not well accepted by patients as it causes a change in their lifestyle and body image issues.
- Superficial augmentation planes such as the subcutaneous or subfascial plane are more likely to result in implant visibility than the intramuscular plane.
- Pocket dissections with thin segments of muscle covering the implant can lead to implant visibility.
- The intramuscular dissection for buttocks implants should split the muscle entirely at its midthickness, avoiding thin segments of muscle that atrophy over time.
- The sandwich plane as described in the XYZ method splits the muscle at its midthickness and places the implant inside the muscle as a burger in a bun, avoiding thin segments on the muscle.

BUTTOCKS IMPLANTS AS AN OPTION FOR REMODELING BUTTOCKS

Buttocks implantation was one of the first procedures used to remodel buttocks. This technique began to be used in the 1980s, mainly in Latin America before the popularization of fat grafting.[1–6] Nevertheless, from the beginning, buttocks implants have been associated with high complication rates, and surgeons have not been encouraged to recommend this procedure.[7,8] Even so, it is important to note that complications generally result from 2 factors: the anatomic plane used or poor technique. The subcutaneous, subfascial, and submuscular planes may lead to less aesthetic results and to complications inherent to those locations.[9–11] When performed correctly, the intramuscular implant technique can offer outcomes that are not always achieved through other methods. Low complication rates when compared with the other planes, or even with breast implants, are achievable.[12–17]

Roundness and good projection of the buttocks are easily obtained with implants. Even if an implant cannot lift ptotic buttocks, it can provide a lift effect because of the visual improvement of the projection of the upper pole.

RESHAPING IS MORE IMPORTANT THAN AUGMENTATION

When reshaping buttocks, the surgeon has several options including fat grafting and implants. Some physicians who are not familiar with buttocks reshaping may have doubts about recommending 1 procedure over another. In most cases, the correct option is not a question of preference but rather indication, and it is important to understand the patient's wishes clearly.

Unlike fat grafting, implants achieve the desired round shape through a concentrated projection, whereas the volume of fat grafted can spread, thereby reducing focal augmentation. This concentration of the volume is desirable in many

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cases, because it helps project the buttocks in a posterior direction instead of laterally. This projection results in a perky shape rather than large buttocks. This outcome meets the needs of some patients who do not want large buttocks and prefer medium-sized yet round buttocks with posterior projection.

Patients who request reshaping do not necessarily have flat buttocks, and grafting large amounts of fat is not what every patient is looking for. The authors have observed that most patients have properly sized buttocks and only require filling in specific areas such as the trochanteric depression, the upper pole of the buttocks, or the sciatic depression in order to obtain the roundness and projection desired. These areas can present impressive changes when they are filled with just 200 to 300 cc on each side.

FAT GRAFTING OR IMPLANTS?

A large amount of fat must be harvested for fat grafting on the buttocks. This is not possible in thin people, in whom implants are the only option. In most patients seeking major liposuction, one may easily utilize a procedure that uses the liposuctioned fat to reshape the buttocks.

Consequently, even surgeons with vast experience in buttocks implants often use fat grafting more frequently than buttocks implants. In the authors' practice, more fat grafting is performed than gluteal implants. More than 70% of the authors' cases of buttocks implants occur in conjunction with some amount of fat grafting (a common association of procedures) in selected areas to help reshape the buttocks and improve the outcome.

WHY CHOOSE THE INTRAMUSCULAR PLANE OVER SUPERFICIAL PLANES?

Buttocks implant may be placed in deeply, such as in the submuscular and intramuscular planes, or superficial as in the subcutaneous and subfascial planes. Each of these planes have attributes that can provide different long-term outcomes. The intramuscular plane is least likely to present implant visibility problems and complications of any kind.

The use of superficial planes is contraindicated in thin patients because of the visibility of the implant.[12,14] When used in patients with good adipose coverture, the subfascial plane can look good initially, but after some years the fascia can loosen, and the implant may become visible. The more superficial an implant, the more visible it is. In some cases, the implant can only be seen when the patient is moving, bending forward, or contracting the gluteal muscles. Postoperative pictures of patients showing good recent results standing up may not always represent the actual outcome. Another issue that is frequently associated with the subfascial plane is late seroma formation. Although the rate of late seroma is high, no data have been published about the frequency of this outcome.

One disadvantage of the retromuscular plane is the restricted space available for implant placement. Only the area above the piriformis muscle can be used, because the sciatic nerve below the muscle is unprotected, and contact with the implant can cause nerve pain. When this plane is used, the upper pole is filled more than the caudal pole, and a double-bubble effect can result.

All the problems that stem from use of the subcutaneous, subfascial, and retromuscular planes (such as seromas, visibility, or double-bubble) can be avoided by changing to the intramuscular plane. Consequently this plane is generally preferred for buttocks implants.

THE GLUTEUS MAXIMUS MUSCLE AND PRINCIPLES FOR CREATING THE POCKET

The lower gluteal nerve diverges into several branches entering the gluteus maximus muscle (GM) through the anterior aspect and one through the posterior aspect. Because most of these branches are not encountered during undermining, they are largely preserved with minimal damage to a few branches. Nevertheless, in order to preserve adequate muscular function and obtain good aesthetic results, some principles must be followed when creating an intramuscular space:

1. Undermining should be restricted to the GM.
2. Undermining should split the GM muscle in the middle, leaving the same amount of muscle in front of and behind the implant.

THE SANDWICH PLANE WITHIN THE GLUTEUS MAXIMUS MUSCLE

The authors call this plane created by splitting the GM in the middle the sandwich plane. This plane allows the implant to maintain its position during muscle contraction. When 1 area in the plane is more superficial than another, the balance of the muscular force is broken. The deeper area has more muscle fibers and is stronger than the superficial area. When the muscle contracts, the contraction pushes the implant against the thinner wall of the pocket. Continued pressure on the thin muscular wall eventually causes muscular atrophy.

Furthermore, thin layers of muscle can also lead to muscle fiber atrophy caused by ischemia, or by