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Male Nonsurgical Gluteoplasty by 3D Isovolumetric Chemical Myoplasty (Endopeel Techniques): A Personal Experience

41

Alain Tenenbaum and Mauro Tiziani

41.1 Introduction

In the 21st century, increasing numbers of men—particularly among the millennial generation—are concerned with physical appearance and body aesthetics. Regular gym attendance, attention to fashion, and the desire for well-contoured buttocks that complement fitted jeans, swimwear, and underwear have become key components of male self-image and lifestyle. Endopeel techniques offer a medical approach to gluteal enhancement that integrates elements of customization and aesthetic precision. The trained practitioner assumes multiple roles: not only as a physician, but also as a sculptor, an artist, and, in a metaphorical sense, a fashion tailor—shaping the gluteal region to meet evolving aesthetic standards. This technique allows for three-dimensional reshaping of the buttocks without surgery, and may be repeated periodically—typically every six months—in parallel with seasonal fashion trends and changes in body styling preferences. This article aims to present the principles, technical approach, and clinical outcomes of Endopeel gluteoplasty for males, highlighting its role in modern aesthetic medicine as a customizable, repeatable, and nonsurgical procedure.

41.2 Historical Background of the Procedure

This section outlines the historical development, guiding principles, and clinical rationale behind the Endopeel technique, with a focus on its application in male gluteal aesthetics.

The Endopeel techniques were first developed by the authors in the year 2000 and have since undergone continuous refinement and optimization. The core concept is to reshape muscles in three dimensions by modulating projection, width, and tissue tension—without adding volume and without compromising adjacent anatomical structures. A fundamental principle of this approach is three-dimensional isovolumetric remodeling: the gluteal shape is modified without increasing mass or weight. This sets Endopeel apart from traditional techniques such as implants, fillers, or lipofilling, which rely on volume augmentation to simulate projection. These volumizing methods typically increase all dimensions simultaneously—length, width, and depth—resulting in additional weight and often leading to a disproportionate or unnatural appearance. In contrast, Endopeel enhances true projection by acting on tissue tone and muscle dynamics, producing a harmonious and athletic contour without added volume. This precise modulation avoids the characteristic "surgical look" or "filler look" often observed in other techniques. The results are immediate, natural, and remain aesthetically consistent both at rest and during muscular contraction, while preserving full functional integrity. Endopeel may also be applied in patients with gluteal implants, provided the prosthesis is placed deeply and not in a superficial plane. In such cases, the technique can reduce the visibility of the implant and soften the surgical appearance. However, a preliminary ultrasound or MRI evaluation is mandatory to assess implant positioning and rule out potential complications. Conversely, Endopeel is contraindicated in patients with recent lipofilling or dermal fillers that

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have not yet been fully resorbed, due to the risk of unpredictable tissue behavior or interaction with residual material.

41.3 How Do the Various Components of Endopeel Work?

Endopeel treatment relies on the interplay between three fundamental elements: chemical agents (injected substances), mechanical outcomes (such as myoplasty, myopexy, and myotension), and the target tissues—skeletal muscles considered as viscoelastic elastomers. These muscles undergo three-dimensional isovolumetric deformation, meaning their shape is altered without changing their mass or volume.

Endopeel treatment is based on the interaction between three core elements: a specific injectable substance with reversible biochemical properties, mechanical outcomes (such as myoplasty, myopexy, and myotension), and the muscle tissue itself—considered as a viscoelastic structure capable of controlled, three-dimensional isovolumetric deformation. The active agent used in Endopeel has been designed to act safely at the subdermal and muscular levels. It is fully eliminated from the body within 24 hours for one variant, and over 21 days for another. The compound does not induce necrosis, infection, or atrophy, as confirmed by histological studies. Its biochemical action is temporary, targeted, and respects the structural integrity of the tissues involved.

Of particular importance is the role of the connective tissue network surrounding muscle fibers. The endomysium surrounds individual myofibers, the perimysium organizes bundles of fibers, and the epimysium envelops the entire muscle. These collagen-based layers form a hierarchical, interconnected system that transmits force and allows for effective reshaping and tension modulation. By acting on this architecture, the Endopeel method achieves functional and aesthetic improvements without adding weight or mass.

The reshaping effect specifically targets muscle tonus, leading to an immediate improvement in contour and firmness. This action respects the dynamic nature of muscle tissue, with results that remain natural both at rest and during contraction. Factors influencing muscular stiffness and tonicity include:

- Intrinsic biomechanical components:
  1. Viscoelastic properties of connective tissues (endo-, peri-, and epimysium)
  2. Contractile behavior of actin-myosin interactions
- Neurophysiological factors: the myotatic reflex or stretching.
- Key Scientific Distinction: The Active Compound Used in Endopeel Although the chemical structure of the active compound used in Endopeel procedures may resemble certain aromatic molecules, it is in fact a chiral enantiomer with fundamentally different physicochemical, histological, and biological properties. Unlike classical aromatic compounds with known cytotoxic or necrotic effects, this stereochemically defined molecule has been specifically selected for its safety profile and biocompatibility with muscular and connective tissues. It induces no necrosis, no infection, and no tissue atrophy, as confirmed by independent histological studies. These findings have been validated by:
- The Laboratory of Pathology, Department of Medicine, School of Ribeirão Preto – University of São Paulo (USP), in a study conducted by M. Kim, R. Mené, A. Tenenbaum, and M. Tiziani.
- The Department of Organ and System Research, Akita University School of Medicine (Japan), under the supervision of Prof. Taro Hiro, in collaboration with YMCBiyou Yokohama Minato and Shinjuku Clinics.
- Histological analyses were performed by the Sapporo Pathological Research Institute Ltd.

The compound is completely metabolized and excreted, and acts through a transient biophysical remodeling of muscle tone and connective tissue architecture, without irreversible changes to cellular structure or function. Its action reshapes tissue dynamics without inducing volumization, cytolysis, or fibrosis. This distinction is fundamental to understanding the unique safety and efficacy profile of the Endopeel technique and to preventing misconceptions based on superficial chemical resemblance with unrelated compounds.

41.4 Proposed Clinical Classification of Male Gluteal Shapes (Introduced in 2025 by A. Tenenbaum and M. Tiziani)

Classification Criteria

The classification is based on four key parameters observed during clinical assessment:

1. *Projection (P)*: degree of posterior prominence
2. *Width (W)*: horizontal spread of the gluteal region
3. *Length (L)*: vertical span from iliac crest to gluteal fold
4. *Tonicity (T)*: firmness and dynamic muscular tension

Each gluteal type is defined by a typical pattern of these four variables.

Type I: Flat type (P−/W−/L±/T−)

- Minimal projection, reduced width, often hypotonic.
- Seen in sedentary or ectomorphic patients.
- *Goal*: restore 3D volume perception through projection and tonicity, without adding mass.

Type II: Sagging type (P−/W+/L+/T−−)
- Long gluteal region with horizontal spread but lacking support and tone.
- Often seen in aging patients or post-weight loss.
- *Goal*: lifting effect through tonicity restoration and upper pole reinforcement.

Type III: Square type (P±/W++/L±/T±)
- Strong lateral width but reduced central projection.
- Common in mesomorphic or muscular builds with hypertrophied gluteus medius.
- *Goal*: increase posterior projection while refining lateral excess.

Type IV: Athletic type (P+/W+/L±/T+)
- Balanced width and projection, high tone.
- Ideal or near-ideal candidate, usually bodybuilders or active patients.
- *Goal*: subtle reshaping or symmetry correction.

Type V: High-riding type (P+/W−/L−/T++)
- Short vertical length, strong projection, compact aspect.
- Can appear disproportionate in some ethnic profiles.
- *Goal*: adjust balance between height and width for better harmony in fitted clothing.

This classification may serve as a practical tool to guide personalized gluteal enhancement strategies with Endopeel techniques and could be further validated by prospective clinical studies.

Isovolumetric Principle in Gluteal Remodeling

Because Endopeel is an isovolumetric technique, the product of Length × Width × Projection (L × W × P) remains constant throughout the procedure. This fundamental principle allows predictable three-dimensional reshaping without adding mass or increasing the overall volume of the gluteal region.

For example, reducing gluteal length (L) while keeping the width (W) stable will mechanically increase projection (P). In patients with wide and long buttocks—typically associated with a more feminine morphology—achieving strong projection often requires a combined reduction in both length and width to maintain volume equilibrium.

These specific techniques, developed by A. Tenenbaum, make it possible to sculpt virtually any gluteal morphology—customized to the patient's aesthetic goals—while maintaining a constant volume.

In select cases, projection can also be selectively enhanced even when width must be preserved or slightly increased. Such results are achieved through controlled spatial repositioning and tissue reorganization, all within the biomechanical boundaries of isovolumetric modeling.

41.5 Classification

Currently, there is no established classification system for the shape of male buttocks, and no published studies have addressed variations based on ethnicity, cultural background, or other anthropometric parameters.

Nevertheless, most male patients express a desire for well-defined, rounded, and muscular gluteal contours, with a natural and athletic appearance—avoiding excessive projection or exaggerated volume.

41.6 Anatomy of the Area Concerned

Precise anatomical landmarks must be identified on the undressed male patient in the standing position, as they serve as essential reference points for planning and executing Endopeel gluteoplasty. These include: (Fig. 41.1)

- The lateral trochanteric depression (1): the natural lateral indentation near the greater trochanter. In male patients presenting with a marked external concavity, excessive lateral tightening or width reduction should be avoided, as it may result in an overly pinched upper gluteal shape—visually reminiscent of the "Tintin tuft" deformity. Maintaining appropriate lateral volume is essential to preserve a masculine and harmonious gluteal silhouette.
- The infragluteal fold (2): the natural horizontal crease marking the lower boundary of the buttock. It must be clearly distinguished from the infragluteal area, which lies below the fold. In both male and female gluteal aesthetics, lifting the infragluteal fold itself is often desirable to restore firmness and shape. However, the management of the infragluteal area differs significantly by gender: In males, the infragluteal area should not be lifted. Its natural convexity below the fold creates a visual platform that allows the back pocket of jeans to fall beneath the fold, contributing to a masculine, elongated gluteal look. Preserving this convex shape is essential for achieving an anatomically and culturally masculine appearance. In females, by contrast, the infragluteal area should be flattened or lifted, so that the entire back pocket lies above the fold. This adjustment enhances the perception of compactness, roundness, and higher projection, which are considered aesthetically desirable in female gluteal design. Thus, a clear understanding and manipulation of

both the infragluteal fold and infragluteal area are critical in designing gender-specific outcomes during gluteal reshaping procedures.

- The intergluteal cleft (3) the midline groove separating the gluteal regions, contributing to central symmetry and the natural vertical alignment of the buttocks.
- The inferior point of the presacral triangle: this point, located along the midline just above the intergluteal cleft, corresponds to the lowest anatomical landmark of the presacral triangle, whose upper base is defined by the bilateral dimples of Venus. It serves as a fixed central reference point for vertical planning in gluteal reshaping. In Endopeel gluteoplasty, the functional vertical length (L) of the buttock is defined as the distance from this inferior point down to the superior apex of the infragluteal diamond. From a morphological standpoint, no lifting should be performed above a horizontal line passing through this inferior point, as doing so would compromise the structural identity of the gluteal region. Instead, lifting must be confined to the tissue located below this line, which includes the modifiable projection zone.

The anatomical boundaries of the lateral depression (1 in Fig. 41.1) include:

- Superiorly insertion of the belly of the gluteus medius muscle
- Inferiorly by the insertion of the vastus lateralis muscle
- Posteriorly by the insertion of the muscle quadratus femoris together with the belly of the gluteus maximus muscle.

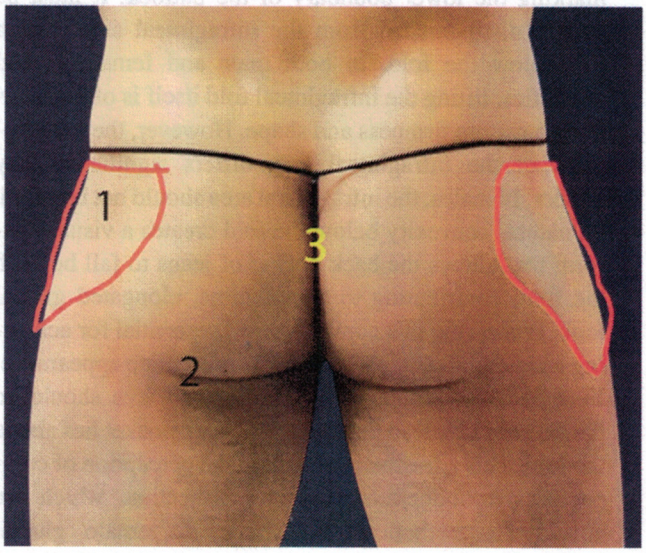

Fig. 41.1 The anatomical landmarks for the Endopeel procedure of the buttocks. 1—Trochanteric depression, 2—Infragluteal fold, 3—Intergluteal cleft

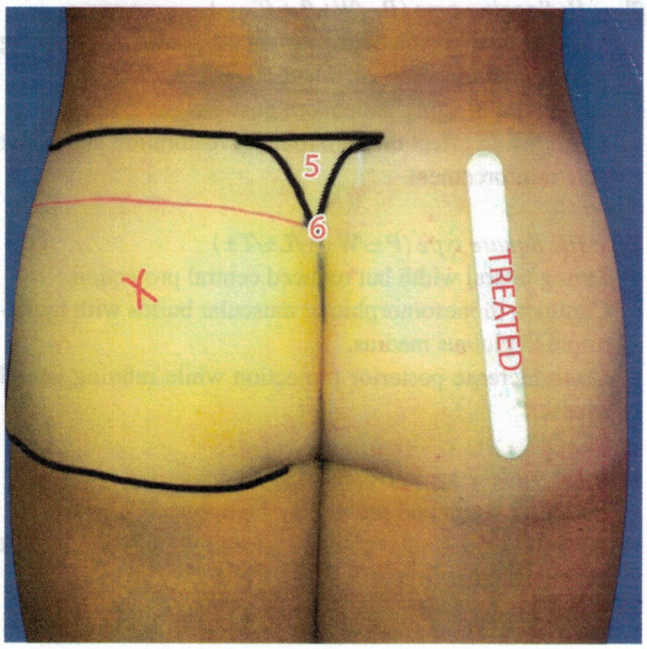

Fig. 41.2 The presacral triangle (5) with the inferior point (6). The red "X" on the untreated side marks the point of maximum gluteal projection, corresponding to the superomedial corner of the back pocket of standard jeans. A red horizontal line passes through the inferior point of the presacral triangle, establishing a clinical reference that separates the non-liftable upper gluteal zone from the treatable lower zone. On the treated side, improved contour and projection are visible below this line, consistent with Endopeel outcomes. Maximal projection below this reference line is considered a hallmark of gluteal harmony, especially in athletic patients or those with repeated Endopeel sessions

The infragluteal fold (2 in Fig. 41.1) also called a "banana fold" by many surgeons is created by the

- The horizontal crease under the ischial tuberosity
- The upper limit corresponds to the lower border of the gluteus maximus muscle
- The inferior limit is formed by the insertions of the semitendinosus muscle together with the long belly of the biceps femoris in the ischial tuberosity.

The intergluteal groove or intergluteal cleft (3 in the Fig. 41.1) is the groove between the two buttocks. It forms the visual border between the external rounded protrusions of the gluteus maximus muscles.

The inferior point of the presacral triangle. (marked as 6 on the Fig. 41.2)

41.7 Examination and Clinical Features

The specific contra indications to the procedure include the following:

- High-positioned buttocks (rare).
- Presence of gluteal implants placed too close to the skin surface. In such cases, ultrasonography is recommended to measure the distance between the implant and the gluteal skin. If this distance is insufficient, Endopeel is contraindicated.
- Fatty buttocks (uncommon in males)
- Use of anabolic steroids, which alters muscular responsiveness. Treatment must be postponed until at least 6 months after the last usage.
- Previous injections of spurious hydroxybenzene (e.g. counterfeit phenolic agents), often produced by unauthorized manufacturers. These substances are associated with severe complications: necrosis, infection, septicemia, cell death, migration, and permanent tissue damage.
- Use of peptides, particularly in off-label mesotherapy (common in Latin America and Spain), is linked to irreversible complications. Such usage contraindicates the procedure.
- History of injectable fillers leading to migration, granulomas, or pyogranulomas—these areas must be excluded from treatment or considered a strict contraindication depending on severity.
- Presence of fistulas or dermal sinuses caused by illicit or defective gluteal threads, especially black-market copies used outside of approved protocols.

41.8 Investigations if Indicated

Additional investigations may be recommended based on the patient's medical history and clinical examination, with the primary objective of minimizing procedural risks and avoiding complications.

Ultrasonography or, in select cases, MRI may be proposed to assess the structural integrity of the gluteal region. These imaging modalities are useful to: Confirm the presence and positioning of gluteal implants; Measure the distance between the implant and the overlying skin, as insufficient depth may contraindicate treatment; Detect migrated fillers, encapsulated granulomas, or fibrotic scarring, particularly in patients with a history of previous gluteal interventions. Such evaluations help tailor the treatment plan to ensure both safety and optimal aesthetic outcomes.

41.9 Breaf Discussion on Treatment Modalities

Treatment strategies are primarily guided by the anatomical markings, which are themselves determined according to the patient's aesthetic goals and body type. These markings define the step-by-step approach of the procedure and must be tailored with precision.In all cases, the objective remains to achieve a harmonious, natural-looking result adapted to both the patient's anatomy and their personal or professional expectations.

- For male models or adult entertainers posing nude for calendars, photography, or visual media, the emphasis is on enhancing gluteal projection and sharpening the lateral trochanteric depressions to achieve a visually sculpted appearance.
- For underwear, swimwear, or fitness-wear models, similarly, a defined lateral profile and strong projection are prioritized to complement form-fitting garments.
- For male patients involved in receptive roles in same-sex sexual activity, particularly in adult entertainment, the intergluteal cleft may be shaped to appear more open or wider, particularly in its middle and lower third, to meet the aesthetic preferences typical in that context.
- For other patients, treatment is customized according to the fit and style of jeans they wear, with specific attention to the position and form of the back pockets, which influence how projection and contour are perceived in daily clothing.

41.10 Treatment Modality in Detail

Step 1: The patient must arrive wearing the jeans he prefers, specifically a pair that includes rear pockets (Fig. 41.3), Underneath, the patient should wear minimal underwear—preferably a string or thong-style —to avoid compression or distortion of gluteal anatomy during marking and assessment. This clothing combination allows for accurate marking of projection points in relation to pocket placement and garment fit, which is essential for tailoring the treatment to real-life aesthetic outcomes. (Fig. 41.1).

Step 2: Photographs

All photographs must be taken as standardized medical images, both before and after treatment, ensuring consistent lighting, patient positioning, and camera angles for accurate comparison. (Fig. 41.4).

For all photographs, the patient must place both hands on his head to ensure standardized posture.

For beginners, it is recommended that the patient wears a well-fitted pair of Levi's 501 jeans, which features a red label that serves as a useful visual reference to assess gluteal projection both at rest and during muscular contraction when dressed.

Step 3: Marking the maximal projection point (Figs. 41.5 and 41.6)

This step must be performed with the patient standing upright, looking straight ahead, and with both hands on the head. It is the only marking done while the patient is clothed, wearing his best-fitting jeans.

Fig. 41.3 Patient arriving in the clinic wearing his preferred jeans with rear pockets. This choice of garment allows for realistic marking of gluteal projection and pocket alignment, ensuring the treatment is customized to the patient's clothing habits and aesthetic expectations

In fact, the maximal projection point corresponds precisely to the superomedial (superointernal) angle of the back pocket of the jeans.

These points are often not symmetrical, as many patients present with differences in leg length or circumference—frequently observed in cases with prior lipoplasty.

A red cross is then drawn with a marker pen to indicate the exact point of maximum projection.

Step 4: (Figs. 41.7 and 41.8)

- Marking the anatomical limits of the gluteal area to be treated in a 22-year-old Latin American male patient.
- The reference borders include (Fig. 41.2) the infragluteal fold, the intergluteal groove, and the inferior edge of the string underwear (Figs. 41.6 and 41.7).
- The inferior point of the presacral triangle is identified and marked.
- From this point, a horizontal red line is drawn laterally toward the outer boundary of the buttock (red line in Fig. 41.7). This line separates the upper gluteal zone, which should never be lifted, from the lower zone, which may be treated.

It is particularly informative to compare the position of the maximal gluteal projection point in the patient shown in Fig. 41.7 with that of the patient in Fig. 41.8.

- When the projection point lies above the red line, it typically indicates that the patient is not athletic
- When the point lies below the red line, it usually indicates that the patient is athletic.

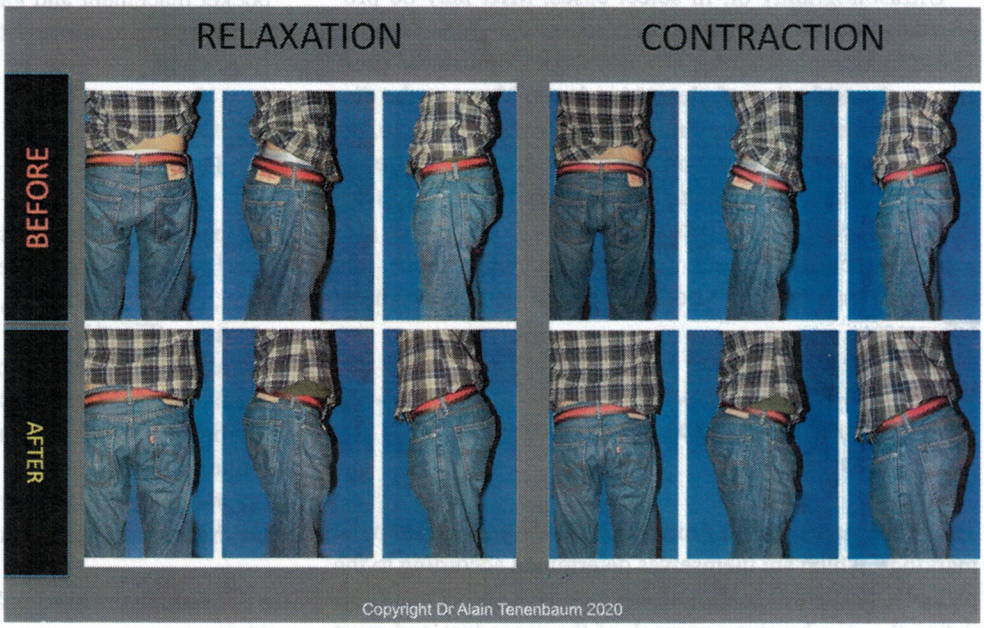

Fig. 41.4 Pre- and post-treatment gluteal position in a 18-year-old Southeast Asian (Vietnamese) male patient with no history of gluteal implants or fillers. Images were taken under standardized clinical conditions, with identical lighting, posture, and camera settings. Post-treatment improvements in projection and contour are visible and aligned with the patient's aesthetic goals

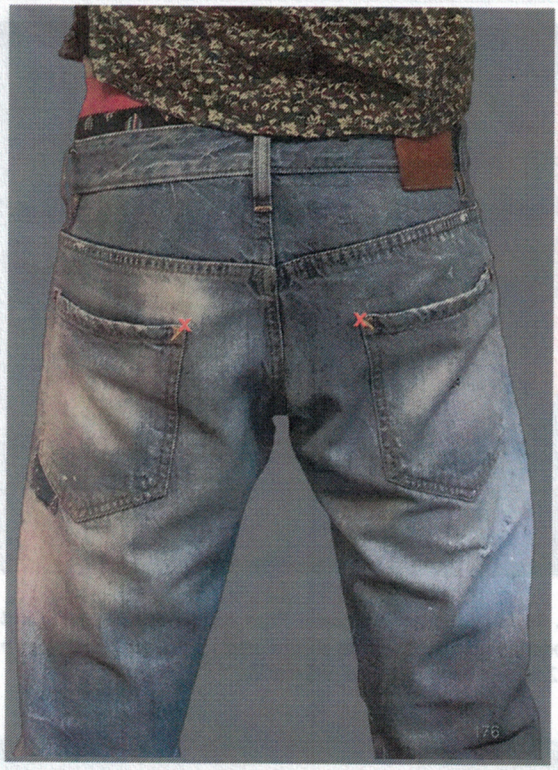

Fig. 41.5 The maximal gluteal projection point is identified by placing one finger on the superomedial angle of the back pocket of the jeans, and the other on the skin directly underneath. A cross is drawn on the skin to mark this anatomical landmark, which will guide the injection planning.In this figure, a red cross is also placed visibly on the superomedial angles of both jean pockets to illustrate the external reference points used during marking

Fig. 41.6 Maximum projection point being transferred onto the buttock skin by aligning one finger with the superomedial angle of the jean pocket and placing the other directly on the patient's skin to mark the corresponding location. (Different patient from the one shown in Fig. 41.5)

Fig. 41.7 A horizontal line being drawn across the buttock. This step is performed on a 22-year-old Latin American male patient to define the anatomical treatment limits. The line originates from the inferior point of the presacral triangle and extends laterally toward the outer edge of the buttock. It separates the upper zone, which should not be lifted, from the lower zone, which may be treated. Reference borders also include the infragluteal fold, the intergluteal groove, and the inferior edge of the string underwear. A red cross, indicating the maximum point of gluteal projection, is also marked. In this case, the projection point lies above the horizontal line, suggesting that the patient is not athletic and has not undergone prior Endopeel sessions

Fig. 41.8 The projection point marked in red is below the horizontal line suggesting that the patient is athletic

This dynamic serves as a valuable index to monitor the progress and efficacy of successive Endopeel sessions.

Step 5: Dividing the gluteal area into 2 × 2 cm squares using wooden spatulas (1 cm in width) and a black marker pen.

- Draw vertical lines from the intergluteal cleft toward the lateral border, using two wooden spatulas between each line (Fig. 41.9)
- Draw horizontal lines from the infragluteal fold upward, again maintaining two spatulas between each line (Fig. 41.10)

Step 6: Identifying and Marking the 'Forbidden Squares'

The 'forbidden squares' do not correspond to anatomical danger zones and pose no medical risk.

Rather, they are areas to avoid treating in order to preserve a gluteal contour aligned with male aesthetics, fashion standards, and sexual identity.

Once the full 2 × 2 cm grid has been drawn (Fig. 41.11), each forbidden square is marked with a red cross (Fig. 41.12), based on design and proportion rules specific to masculine buttock shaping.

Likewise, the external column of squares—illustrated in (Fig. 41.13)—is also commonly excluded in male patients. Tightening these lateral zones produces an unnatural appearance often likened to the "Tintin crest effect," characterized by a sharp, vertical ridge and a visible absence of gluteal volume. On the other hand, filling these external areas eliminates the masculine V-contour, resulting in an overtly convex shape that is typically desired by many Latina and millennial female patients, including those from Zürich's Gen Z demographic.

Fig. 41.9 Marking vertical lines on the buttock using a double wooden tongue depressor to ensure a uniform and precise alignment of the treatment boundaries

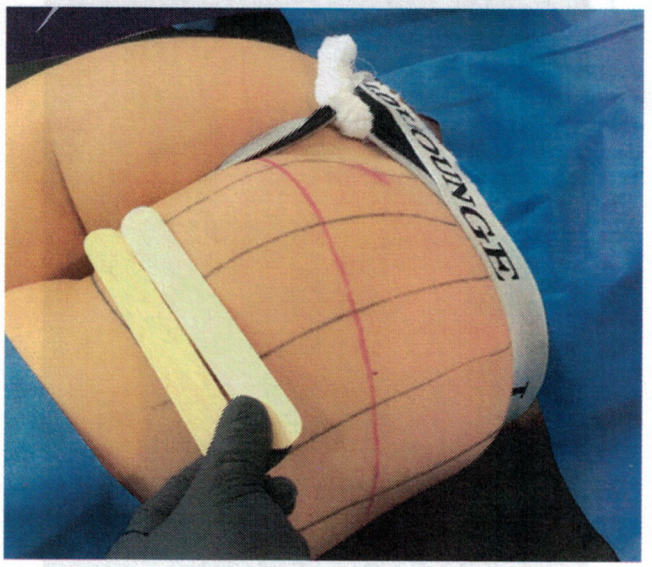

Fig. 41.10 Marking horizontal lines on the buttock using a double wooden tongue depressor to ensure precise, uniform spacing as part of the 2 × 2 cm treatment grid preparation

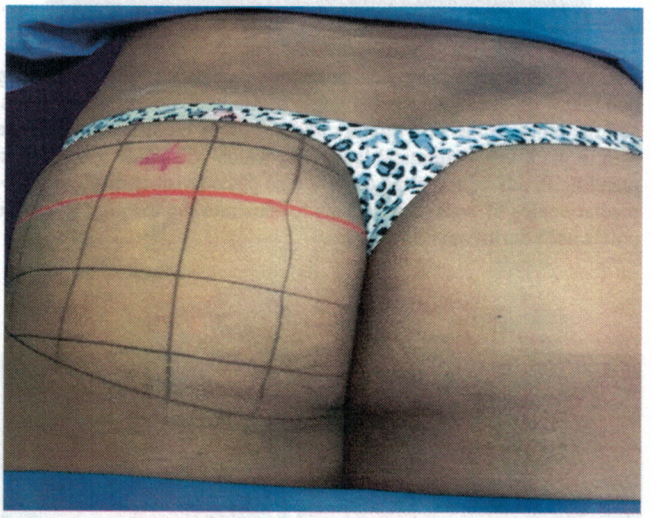

Fig. 41.11 Completion of the full gluteal grid marking, with all squares delineated for precise and systematic treatment application

Step 7: Finalizing the Markings and Injection Strategy

The second injection is administered at a tangential angle, with the needle aligned along the skin surface. This tangential injection works against gravitational and upward biomechanical forces (analogous to Archimedes' principles), allowing controlled displacement and structural rein-

Fig. 41.12 The medial "forbidden squares" are marked with red crosses. These areas are excluded from treatment to preserve a typically masculine intergluteal design, as most male patients prefer not to widen the intergluteal groove. This contrasts with the aesthetic goals of some female patients—such as Mexican, North African, and Zürich-based Millennial or Generation Z women—as well as passive gay males, who often seek a broader or more open intergluteal region for stylistic or sexual reasons

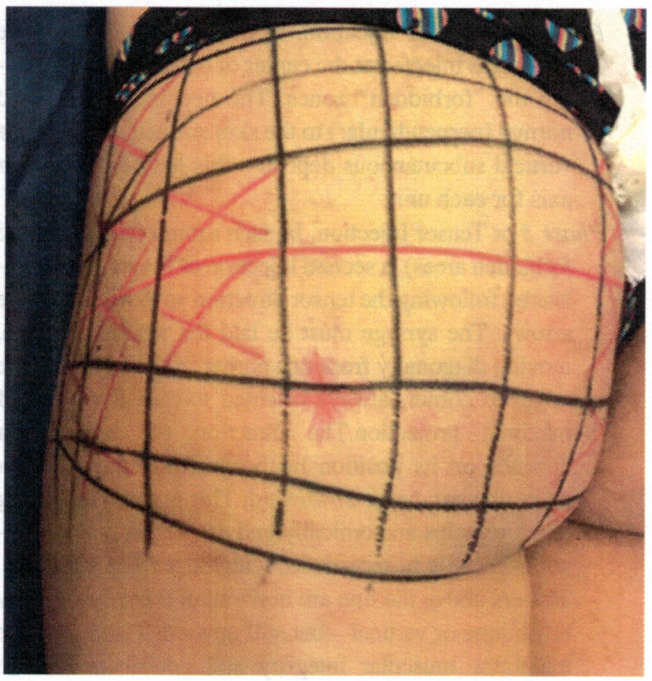

Fig. 41.13 Marking of both internal and external columns of "forbidden squares" on the buttock. The internal column, located along the intergluteal cleft, is typically left untreated in males to avoid exposing the anus. The external column is also usually excluded to preserve the natural external concavity and masculine V-contour. Tightening this zone risks producing the undesirable "Tintin crest" effect, while filling it results in a rounded convexity often preferred by Latina and fashion-conscious Zürich Gen Z females

forcement. The direction and angle of this injection are marked with arrows, representing the tensors, as shown in (Fig. 41.14). This dual-vector and tensor strategy allows customized reshaping of the gluteal muscle while maintaining volume consistency, achieving immediate, visible results without creating filler-like or surgical-looking outcomes.

All the white arrows—referred to as tensors—are oriented toward the point of maximal gluteal projection, but their direction is strictly determined by their position relative to the red horizontal reference line:

- Above the red line, tensors are always strictly horizontal, never upward or downward. This is essential because no lifting should ever be applied to the gluteal area above the red line, regardless of the patient's gender. This preserves the natural upper contour and avoids deformities.
- Below the red line, tensors may be oblique or vertical, but must always point upward.

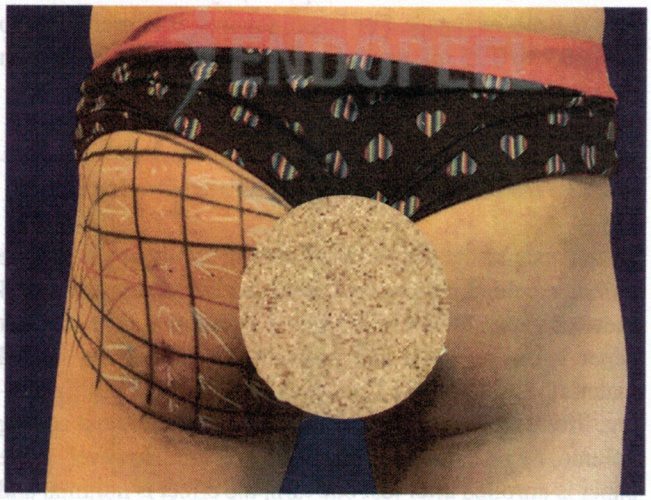

Fig. 41.14 The direction of injection are marked by arrows

Step 8: Injection Protocol in Three Phases

Phase 1 or Infragluteal Fold Injection. Each portion of the infragluteal fold is injected with 0.1 mL of the product. The syringe must be laid flat against the skin, aligned parallel to the operating table, and directed upward—from bottom to top—into the fold itself. As with tensor injections, the practitioner must overcome Archimedes' upward force, which tends to displace the syringe away from the injection plane. This injection technique ensures effective remodeling of the fold while preserving the natural architecture of the upper and lower gluteal zones, avoiding undesired lifting of the superior region

Phase 2 or Vector Injection. In this step, 0.1 mL of the product is injected at the center of each square, excluding the "forbidden" zones. The needle is positioned normal (perpendicular) to the skin surface, delivering a vertical subcutaneous deposit—this defines the vector axis for each unit.

Phase 3 or Tensor Injection. In each square (excluding the forbidden areas), a second injection of 0.1 mL is administered following the tensor direction as indicated by the arrows. The syringe must be laid flat against the skin, moving diagonally from one corner of the square to the opposite corner, always oriented toward the point of maximal projection.The direction of each tensor depends on its position in the grid and must always point upward, never downward. This ensures the lifting effect remains anatomically and aesthetically appropriate, especially in accordance with the red line guideline. Tensors above the line are horizontal; those below may be oblique or vertical—but still upward. This technique maintains muscular integrity and contributes to the desired reshaping with maximal control.

All injections are performed in the subcutaneous plane using 27-gauge, ½-inch (0.4 × 13 mm) flexible needles. The standard spacing between two injection points is 2 cm. Each point typically receives between 0.1 mL and 0.25 mL of the preparation, depending on the area and clinical indication.

In cases where the squares are not exactly 2 × 2 cm, adaptations are made: For smaller squares, inject 0.1 mL as vector plus 0.1 mL as tensor. For larger squares, it is preferable to inject 0.1 to 0.25 mL per vector and/or tensor, depending on the required intensity of reshaping.

41.11 Duration of the Effects and Protocols

To understand the longevity of treatment outcomes and the rationale behind the protocol, consider the analogy of an A4 sheet of paper. When rolled into a cylindrical tube, the flat paper gains structure and projection—without any added material. Similarly, the Endopeel method produces tightening, lifting, and projection of the gluteal area without adding volume, by reshaping muscular architecture.However, if the paper is unrolled after just one turn, the effect is minimal and short-lived. Repeated rolling results in a more stable and lasting shape. The same concept applies to gluteal remodeling: repetition consolidates the effect.

The duration of the effects depends on multiple parameters:

First-time patients typically experience visible results lasting 1 to 3 months.

After the second session, effects generally last 3 to 6 months.

From the third session onward, results may extend to 6 to 12 months or longer, with enhanced tissue response and improved muscular memory.

From the third session, the volume of product required usually decreases by 30–50%, while the aesthetic result continues to improve. Athletic or well-toned patients tend to maintain results longer due to superior muscle integrity and skin quality. Patients with hypotonic, atrophic, or post-traumatic gluteal areas (e.g., post-decubitus or spinal cord injury) may need more frequent sessions or modified protocols to achieve and sustain optimal outcomes.This progressive, cumulative approach allows the reshaped gluteal area to hold its form more effectively over time and with effects that evolve naturally session after session.

41.12 Complications

Over the past 25 years of clinical use, the original Endopeel technique, when performed using the authentic patented formulation, has not been associated with any irreversible complications worldwide.

No Irreversible Complications with the Original Product
When properly administered by trained professionals using genuine Endopeel material, the procedure is non-necrotic, non-infectious, and subcutaneous, posing no risk of tissue atrophy, granulomas, fibrosis, or migration.

Irreversible Complications Linked to Counterfeit Copies
Severe and life-threatening complications such as necrosis, septicemia, or death have been reported only in cases involving counterfeit or unauthorized copies of Endopeel. These are often produced in unregulated settings and lack quality control. Countries known for producing such copies include:

- Argentina
- Spain
- Turkey

Regions where these copies are frequently used illegally include:

- Latin America
- The Middle East and Near East
- Turkish communities living in Europe

These unregulated substances carry serious health risks and must be explicitly avoided.

Transient and Manageable Side Effects (Original Product)

When the authentic Endopeel formulation is used, only mild and temporary side effects may occur:

- *Ecchymosis* (bruising)—typically resolves in 8 days without intervention.
- *Very mild swelling*—rare and self-limited.
- *Occasional erythema* or localized sensitivity—usually disappears within 24–72 h.

Important Warning: Avoid Alcohol-Based Disinfection

During the COVID-19 pandemic, rare erythematous dermatologic reactions with pseudo-blistering were observed in some patients. These reactions were not due to the product itself but were triggered by contact between treated gluteal skin and alcohol disinfectants (e.g., used to clean toilet seats).

Conclusion: Alcohol-based disinfectants must be strictly avoided in the pre-, per-, and post-operative phases of the treatment.

Rare Allergic Reactions (Arachidonic Acid Sensitivity)

A few rare cases of allergic-type skin reactions have been reported, mainly among female patients from Brazil, Iran, Algeria, and Spain. These reactions presented as:

- Redness, itching, and local irritation at injection sites. These were successfully managed with:
- Topical corticosteroid creams
- Oral corticosteroids
- Antihistamines and oral antibiotic prophylaxis

Symptoms typically resolved within 3 days after initiating treatment.

While these reactions are exceptional, they may be linked to arachidonic acid sensitivity, although no systemic diffusion of the product occurs during gluteal injections.

41.13 Pre- and Post-operative Pictures of the Procedure (Figs. 41.15 and 41.16)

To fully appreciate the efficacy and precision of the Endopeel technique, standardized before-and-after photographs are crucial. These images not only document gluteal contour improvements, but also provide an objective basis for evaluating projection, lift, and lateral reshaping. Such results can already be observed in Fig 41.4., and are further illustrated with greater anatomical detail in Figs. 41.15 and 41.16.

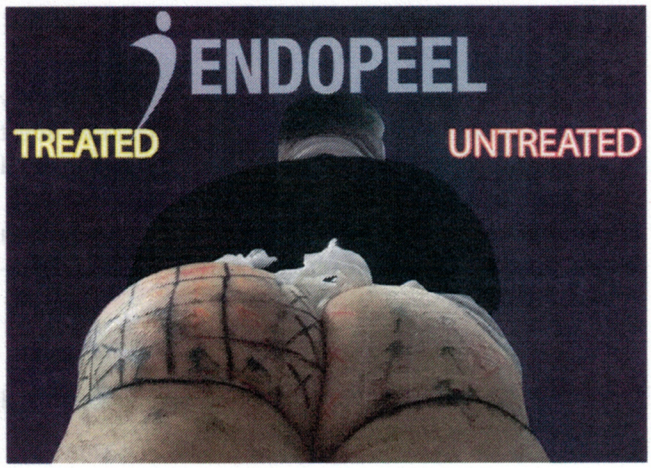

Fig. 41.15 This 45-year-old male patient presented with bilateral gluteal atrophy following a car accident that left him bedridden for over 9 months. Only the left buttock was treated with Endopeel to demonstrate the difference. Despite the age-related hypotonia, the patient desired a more youthful and less asymmetrical gluteal contour. Endopeel was used exclusively for 3D reshaping, without adding volume—highlighting that Endopeel is not a filler, but a tool for muscular repositioning. The treatment restored shape and projection while improving the patient's self-confidence

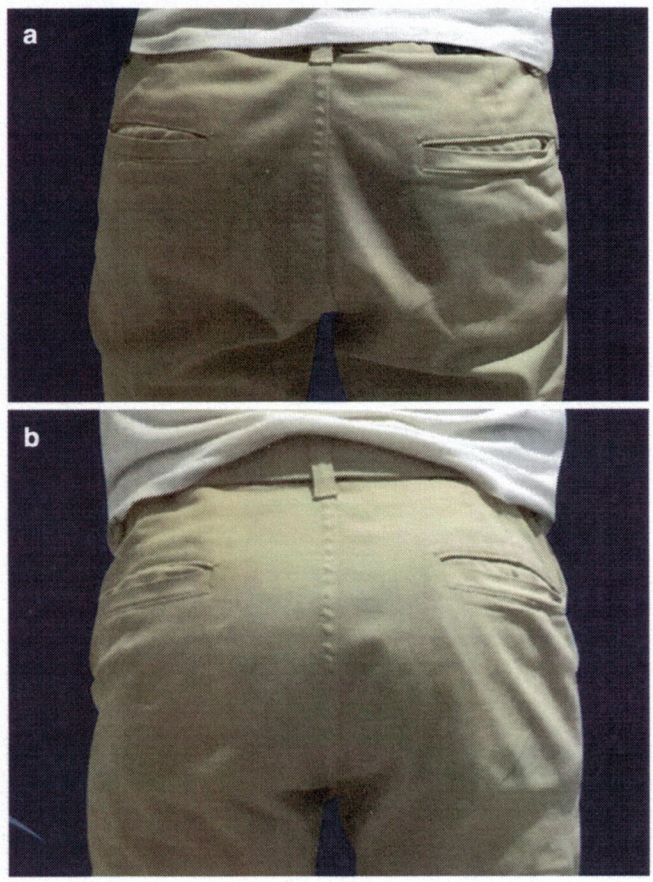

Fig. 41.16 A 25-year-old Cambodian male patient seeking gluteal enhancement for fashion and aesthetic reasons, particularly to address naturally flattened buttocks—a common morphology in Southeast Asian populations. Upper photo: before treatment (**a**) Lower photo: after a single session of Endopeel reshaping. (**b**) This result was obtained without adding volume, using only isovolumetric remodeling techniques to enhance projection and contour in line with Western aesthetic trends

41.14 Pearls of Wisdom

Hands-on workshops with the original inventors are highly recommended. Mastery of the technique requires direct mentorship; it cannot be reliably acquired through social media or unofficial demonstrations.

Theoretical training must precede any practical application and should be sourced exclusively from validated references such as:

- https://endopeel.com
- https://gluteoplasty.com
- The ENDOPEEL App, available via Apple Store and Google Play for mobile devices and tablets.

All official trainers, certified institutions, authorized resellers, and the exclusive e-commerce platform are clearly listed within the ENDOPEEL App. These are the only sources recognized and approved by the originators of the technique.

Unauthorized training programs, uncertified practitioners, or use of unapproved products have been associated with unsatisfactory outcomes and complications in various regions. Practitioners are urged to consult official channels for up-to-date protocols and safety information.

Ongoing education is encouraged, as the Endopeel method continues to evolve through clinical feedback and scientific advancement.