ISSN: **2764-4006** | www.revistacientificaipedss.com

RHINOMODELING WITH PERMANENT THREADS: AN INNOVATIVE METHOD AND THE NEW PARADIGMS OF ADVANCED FACIAL HARMONIZATION

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Publication date: January 30, 2026
DOI: doi.org/10.55703/276440060601012

ABSTRACT

The rhinoplasty with permanent threads with frontal anchoring represents an innovation within minimally invasive techniques for nasal remodeling. This original study describes the clinical application of the technique and analyzes its immediate results in two patients, emphasizing its effectiveness in elevating the nasal tip, increasing projection, and harmonizing the facial profile. The approach is based on creating a superior traction vector that repositions the nasal structure without the need for surgery, minimizing risks and offering greater stability compared to traditional techniques, such as the use of hyaluronic acid and absorbable threads. The results showed consistent morphological improvement, absence of immediate complications, and reproducibility of the technique. The discussion compares the findings with current literature, highlighting biomechanical and safety advantages. It is concluded that the technique has the potential to establish new paradigms in advanced facial harmonization, although further studies with larger samples and prolonged follow-up are necessary to validate its durability and standardization.

Keywords: Non-surgical rhinoplasty; Permanent threads; Nasal aesthetics; Nasal remodeling; Facial harmonization.

INTRODUCTION

The demand for minimally invasive techniques for nasal remodeling has increased significantly in recent decades, driven by the search for safe, reproducible aesthetic procedures with quick recovery compared to conventional surgical rhinoplasty. In this scenario, rhinomodelling has become a relevant alternative, initially based on the use of fillers dermal and,

subsequently, on the incorporation of threads for support and nasal projection. Although popular, these approaches have important limitations related to durability,

predictability, and safety profile, which keeps the need for more effective and physiologically coherent solutions open (1–3).

Hyaluronic acid-based fillers are widely used due to their ability to correct irregularities and promote immediate aesthetic changes. However, their use is associated with potentially serious complications, such as ischemia, skin necrosis, and even visual loss resulting from arterial embolization. These adverse events are directly related to the complexity of nasal vascularization and the multiple anastomoses with the ophthalmic system, constituting an inherent risk to the technique (9,10,16,17). The occurrence of such complications, although rare, motivates the search for alternatives that do not depend on the injection of intravascular substances.

The use of absorbable threads, such as polydioxanone (PDO), poly-L-lactic (PLLA), and polycaprolactone (PCL), has enabled new strategies for nasal elevation and alignment, offering results considered satisfactory in the short term. Studies show improvement in projection, definition of the nasal tip, and alignment of the dorsum, especially in the first months after the procedure (1,2). However, the most evident limitation of these techniques is their short duration, as the results are directly proportional to the degradation time of the material, resulting in progressive loss of support and the need for periodic reapplication (1,4).

Techniques employing non-absorbable threads have been explored as an alternative for greater stability, but the literature highlights significant risks, such as migration, extrusion, chronic infection, contour irregularities, and the need for surgical removal. In many cases, this removal results in significant anatomical or aesthetic sequelae, highlighting the

lack of established protocols for the safe use of these materials in the nasal region (3,4,7).

Another critical factor in the development of nasal reshaping techniques is the biomechanical complexity of the nasal tip. This region depends on the interaction between cartilage, structural ligaments, fibroelastic tissue, muscles, and the nasal SMAS system, which determine parameters such as rotation, projection, and resistance over time (11–14, 18–21). Any intervention that aims to raise or project the nasal tip must respect these elements, acting on safe vectors and anatomical fixation points that guarantee stability without compromising the integrity of adjacent structures.

Furthermore, the vascular architecture of the nose, particularly the tip and dorsoglobial region, is highly susceptible to ischemic events. The use of cannulas and careful intervention in the correct planes are essential measures to reduce the risk of vascular injury, justifying the adoption of approaches that avoid any intravascular manipulation or compressive (16,17). Thus, interventions that preserve the microvasculature and act on safe anatomical planes These represent significant advancements in advanced facial harmonization.

Current literature, despite its growth, demonstrates a clear absence of minimally invasive techniques capable of providing permanent results with stable support, a low complication rate, and respect for the biomechanical principles of the nasal structure. No study published to date describes in a standardized way the application of permanent threads anchored to the frontalis muscle, inserted via a minimally invasive approach using cannula transfection at the nasal tip, as a means of achieving stable and reproducible nasal elevation, projection, and remodeling.

Given this scientific gap, I developed an innovative technique in which I perform a controlled transfection with a cannula at the tip of the nose, followed by the passage of permanent threads to the frontal region, where they are anchored to the frontalis muscle at the hairline. This approach seeks to reconcile principles of anatomical safety, biomechanical stability, and the achievement of immediate and permanent results, offering... one alternative

potentially superior to already established techniques. The systematization and scientific presentation of this technique.

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They become fundamental in contributing to the advancement of facial harmonization.

GOALS

General Objective

To describe, analyze, and evaluate the effectiveness and safety of an innovative technique. of rhinoplasty A minimally invasive procedure performed through transfection with a cannula at the nasal tip and anchoring of permanent sutures in the frontalis muscle, aiming to promote elevation, projection, and stable reshaping of the nose.

Specific Objectives

1. **Present the proposed technique in detail.**, including anatomical principles, action planes, entry points, cannula path, and the method of anchoring permanent sutures in the frontal region.

2. **Evaluate the immediate results of the procedure.**based on documentation Standardized photographic analysis, morphological analysis, and aesthetic parameters, including tip projection and angle.

advanced and provide a basis for future clinical research.

nasolabial fold and frontal profile alignment.

3. **Describe the tissue response observed during and after the procedure.**, considering the behavior of the anatomical planes, the stability of the anchor point, and the absence of external marks or irregularities.

4. **Identify the occurrence of immediate adverse events.**symptoms such as pain, edema, hematoma, extrusion, or irregularities are assessed to evaluate the safety of the proposed minimally invasive technique.

5. **Compare the clinical findings with existing data in the literature.**, highlighting the limitations of traditional techniques using absorbable fillers or temporary threads, and contextualizing the potential for permanent results offered by the innovative approach.

6. **To propose parameters for technical standardization,**including

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indications, contraindications, instruments used, depth of action and post-procedure care, contributing to future scientific reproducibility.

METHODOLOGY

Type of Study

This is an observational study descriptive, with detailed presentation of a novel minimally invasive rhinoplasty technique using transfection with a cannula at the nasal tip and anchoring of permanent threads in the frontal muscle. Two consecutive clinical cases were included, documented through standardized photographs taken immediately before and after the procedure.

Ethical Aspects

All participants were informed about the innovative nature of the technique and authorized the use of their images for scientific and publication purposes. The procedure was performed in accordance with the ethical principles applicable to advanced facial harmonization practice.

Inclusion Criteria

- Adults with aesthetic complaints related to the projection, elevation, or definition of the nasal tip.
- Presence of nasal anatomy favorable for frontal anchoring (absence of extensive fibrosis or severe structural deformities).
- Desire for aesthetic improvement without undergoing surgical rhinoplasty.
- Ability to understand and accept the risks of the procedure.

Exclusion Criteria

- Active skin infection on the face or nose.
- Decompensated autoimmune diseases or healing disorders.
- nasal surgery performed in the last 12 months.
- History of necrosis or severe vascular complications in previous rhinoplasties.

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. Previous use of permanent threads in the nasal region.

Materials and Instruments Used

. Sterile fine-caliber cannula (varying according to the thickness of the tissue and the patient's anatomy).

. Sterile nylon permanent threads, suitable for deep tissue anchoring.

. Support needles for passing and securing the threads.

. Sterile skin markers for vector planning.

. Topical antiseptic.

. Basic equipment for minimally invasive procedure.

Anatomical Planning

The planning followed classic anatomical references for nasal support and safe traction points. The following were identified:

1. **Entry point for transfection,** located at the nasal tip.

2. **Safe subcutaneous pathway** for advancing the cannula, avoiding proximity to critical superficial vessels described in the literature.

3. **Elevation vectors**, defined based on the desired projection of the tip and the alignment of the nasal dorsum.

4. **Frontal anchoring point**, located at the hairline, directly over the frontal muscle, an area recognized for its structural resistance and absence of vascularly dangerous protrusions.

Description of the Technique

1. Transfection of the Nasal Tip

After careful antisepsis, the entry point was made at the nasal tip using a fine cannula. The cannula was introduced in a deep subcutaneous plane, respecting the nasal skin envelope and avoiding arterial compression.

2. Advancement of the Cannula and Preparation of the Plan

The cannula was advanced superiorly, creating a continuous linear tunnel to the frontal region. During this trajectory, the planes were observed

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anatomical features related to the nasal SMAS, supporting ligaments, and osteocartilaginous transition.

3. Threading and Positioning of Permanent Threads

Once the path was secured, the permanent nylon suture was introduced through the cannula, guiding it to the planned anchoring point in the frontalis muscle. The suture was positioned to provide controlled traction of the nasal tip.

4. Anchoring in the Frontal Muscle

The end of the thread was firmly fixed to the frontalis muscle, at the hairline, ensuring a strong and stable anchor point. This anchoring was performed in such a way as to maintain sufficient tension to lift the nasal tip without causing visible skin retractions.

5. Vector Adjustment of the Nasal Tip

With the anchor point established, the traction was adjusted until it reached:

- desired tip elevation,
- harmonic projection,
- correction of the nasolabial angle,
- proportional alignment with the nasal dorsum.

6. Finishing and Trimming Excess Hair

After confirming the stability of the traction and the absence of external irregularities, the excess suture was sectioned and buried in a deep subcutaneous plane to avoid palpability or protrusion.

Evaluation of Results

The analysis of the results considered:

1. **Documentation Standardized Photograph (before and After):**

   the front view,

   the right and left profile,the

   Basal and oblique view.

2. **Immediate Morphological Assessment:**

   the tip projection,

   the elevation,

   the nasolabial angle,

   the definition of the nasal contour.

3. **Immediate clinical assessment:**

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the edema,

the hematoma,

the signs of ischemia,

the marks or irregularities.

4. **Stability of traction and anchoring**

right after the procedure.

Primary Outcomes

. Nasal tip elevation and projection.

. Noticeable aesthetic improvement immediately after the procedure.

. Absence of significant immediate complications.

Secondary Outcomes

. Overall facial harmony after remodeling.

. Naturalness of the immediate result.

. Absence of visible marks or irregularities in the frontal region.

RESULTS

General Description of Clinical Findings

The application of the rhinoplasty technique with permanent threads with frontal anchoring demonstrated immediate and consistent results in both evaluated patients. The observed effects include sustained elevation of the nasal tip, improvement of projection, reorganization of structural support, and an increase in the nasolabial angle. In all cases, the procedure showed immediate morphofunctional stability, without superficial marks at the anchoring point and without evidence of ischemia or tissue suffering in the immediate postoperative period.

The standardized photographic records reveal modifications structural compatible with mechanical repositioning of the tip and redefinition of the nasal axis, an effect achieved by the controlled traction of the threads associated with the frontal vector. The individual results are presented below.

Case 1 - Patient 1

The patient presented nasal tip ptosis, reduced nasolabial angle, and limited projection, associated with loss of ligamentous support resulting from the

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aging. After the application of the technique, the following was observed:

- immediate elevation of the nasal tip;
- increase in the nasolabial angle;
- more defined projection;
- symmetrization of the tip in frontal view;
- improvement biomechanics of the support of the columella.

Figure 1- Right lateral view pre and post immediate procedure, highlighting elevation of the nasal tip, increase in projection, and improvement of the nasolabial angle.

Figure 2- Frontal View Pre and Post procedure. There is a symmetry of the nasal tip and reduction of structural collapse. structural.

Figure 3- Left lateral view pre and post-procedure, demonstrating greater definition of the nasal contour and stability of the thread.

Case 2 - Patient 2

The second patient presented a slight projection of the tip, structural drop, and partial collapse of the superior lateral cartilage, in addition to a slight rotation.

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negative in the pre-procedure. After the application of the technique:

- it was found significant elevation of the tip;
- an improvement in projection and the dorsum-tip relationship was observed;
- there was harmonization of the profile line;
- the anchorage demonstrated immediate stability, without signs of excessive tension or deformity.

Figure 4 -Right lateral view pre and post-procedure, highlighting increased projection and recovery of the structural support vector.

Figure 5 -Left lateral view pre and post-procedure, demonstrating a more balanced nasal contour and stable elevation of the tip.

Integrative Analysis of the Results

The comparison between the cases demonstrates that the technique provides reproducible results, with immediate morphological modifications aligned with the structural principles of advanced rhinoplasty. In both cases:

- there was no significant presence of bruising or signs of vascular compromise;
- the frontal anchoring point remained free of visible marks;
- the projection of the nasal tip was restored without the need for fillers or volumizing stimulation;
- the alignment of the nasal axis showed qualitatively measurable improvement;

. The results support the hypothesis that frontal vector traction represents a new paradigm for non-surgical nasal remodeling.

Furthermore, the immediate behavior of the tissues reinforces the stability conferred by the permanent thread, suggesting potential for superior structural durability compared to procedures with hyaluronic acid, which, in addition to the temporary effect, have a higher incidence of ischemic events described in the literature.

DISCUSSION

The technique of rhinomodelling with permanent threads with frontal anchorage presented in this study introduces a new paradigm in the aesthetic management of the nose without surgery, demonstrating immediate, reproducible, and biomechanically stable results. The findings observed in the two patients reinforce that the vector traction applied to the frontal anchorage point significantly modifies the dorsum–tip relationship, promoting sustained elevation and harmonious projection, an effect rarely achieved with traditional non-surgical procedures.

The results obtained diverge from the mechanisms provided by techniques using hyaluronic acid (HA), widely used in rhinoplasty, but whose effect is primarily structured by volumetric filling, without significant impact on the support vectors. Studies demonstrate that HA is effective for targeted corrections of the dorsum and small projections; however, the alteration of the nasolabial angle and the rotation of the tip are limited and often reversible (1,2). Furthermore, the literature points to substantial risks associated with the use of HA in the nose, including vascular occlusion, tissue necrosis, and ischemic complications resulting from the terminal vascularization of the nasal region (3,4).

In contrast, the technique with permanent threads seems to act through a structural mechanism more akin to ligamentous support, similar to that observed in surgical rhinoplasty, but without the need for dissection or prolonged surgical time. This dynamic is aligned with previously studied biomechanical models, which demonstrate that vector forces applied superiorly can modify the positioning of the nasal tip without invasively altering the bony-cartilaginous components (5,6). In cases

Presented, this vectorial action was evident by the elevation of the tip, improvement of the nasolabial angle, and definition of the nasal contour.

Compared to absorbable threads, widely studied in the literature for facial lifting but with more restricted application to the nose, studies show that temporary threads tend to offer limited results in terms of amplitude and duration (7,8). Furthermore, their ability to alter nasal projection is inferior, as they rely on induced fibrosis rather than direct mechanical anchoring. The use of permanent threads, in turn, can provide more continuous and predictable support, as observed in the immediate results of this study.

The observed data also aligns with recent anatomical evidence. Works such as those by Louvrier et al. and Boscainos et al. highlight the importance of the integrity of the interdomal ligaments and the superior lateral cartilage for maintaining nasal shape, stating that interventions capable of replicating this support tend to generate more natural and durable results (9,10). In both cases evaluated, the frontal anchoring technique seems to partially replace this ligamentous function, repositioning the tip in a stable manner.

Another relevant point refers to safety. The procedure does not involve intravascular injections or products with a risk of embolization, a problem widely documented in studies on nasal filling (3,4). The absence of areas of necrosis, perfusion changes, or vascular complications in the reported cases is consistent with the lower inherent risk of mechanical traction procedures compared to injectable methods.

The immediate stability observed in the post-procedure images also suggests that the permanent thread offers sufficient resistance to maintain the initial result without relying solely on tissue edema or inflammatory reaction, phenomena that can mask results in other types of techniques. This characteristic is cited in research on permanent biomaterials used in structural lifting and tissue support, which indicate that the mechanical resistance of the material is a critical factor for the predictability of results (11,12).

Furthermore, recent literature on hybrid techniques for rhinoplasty reinforces that there is a growing demand for non-surgical procedures that provide effects similar to

rhinoplasty, but with shorter recovery time and fewer complications (13). The results obtained in this study outline a promising alternative in this scenario, especially for patients seeking correction of the nasal tip, one of the greatest challenges of non-surgical rhinomodelling.

Although the findings are consistent, there is a recognized need to expand the sample and conduct medium- and long-term evaluations to determine the definitive stability of the results, the biocompatibility of the permanent thread, and the rate of possible late complications. Multicenter trials and comparative studies between different techniques could reinforce the external validity of the proposed approach.

In summary, when comparing the clinical results of this study with current evidence, it is observed that the technique presented positions itself as a disruptive innovation, offering:

- greater structural predictability than techniques with HA;
- lower vascular risk;
- the possibility of real modification of the traction vectors of the tip;
- immediate effect without the need for compensatory edema;
- absence of a visible mark at the anchoring point;
- potential for durability superior to absorbable threads.

These characteristics indicate that frontal anchoring with permanent threads may represent a new chapter in advanced facial harmonization, offering a safe, functional, and aesthetically consistent alternative for non-surgical nasal remodeling.

CONCLUSION

The technique of rhinomodelling with permanent threads and frontal anchoring has proven to be an innovative, safe, and effective method for the immediate repositioning of the nasal tip, providing significant improvement in projection, elevation of the nasolabial angle, and overall harmonization of the facial profile. The results obtained in the two clinical cases demonstrate that the vector traction applied to the frontal point is capable of replicating, in a minimally invasive manner, structural effects traditionally achieved only in surgical procedures.

The comparative analysis with the literature shows that the technique overcomes limitations observed in non-

conventional surgical procedures, especially those based on hyaluronic acid fillers, which present biomechanical limitations and a higher risk of vascular complications. Similarly, the approach with permanent threads offers superior stability compared to that reported for absorbable threads, as it provides continuous and predictable support without relying solely on the formation of fibrosis.

The findings of this study suggest that frontal anchoring represents a new paradigm in advanced facial harmonization, especially for correcting the nasal tip, one of the greatest challenges in non-surgical techniques. The absence of immediate complications, the naturalness of the results, and the reproducibility of the method reinforce its potential as a viable alternative for patients seeking interventions without surgical time or prolonged recovery.

Despite the promising results, it is recommended to conduct studies with larger samples, longitudinal follow-up, and quantitative analysis of angular and projection measurements to assess the durability of the results and establish standardized protocols. Multicenter and comparative evaluations could contribute to enhance the external validity of the method and consolidate its position as an innovative technique within advanced rhinomodelling.

In summary, rhinoplasty with permanent threads and frontal anchoring presents itself as a minimally invasive strategy of high efficacy, offering structural predictability, safety, and immediate aesthetic results, configuring itself as a relevant and disruptive contribution to the practice of contemporary facial harmonization.

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