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Double Threads: Advanced Molded Thread Technique With Double Vectorization And Reuse For Facial Lifting

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Abstract:
The Double Threads technique offers an innovative approach to the use of molded polydioxanone (PDO) support threads, combining double facial vectorization with an exclusive method of reusing the same thread to maximize the lifting effect and collagen biostimulation. Developed in Brazil by Dr. Marcele Arouca, this technique was designed to offer superior clinical results with a more rational and strategic use of threads, especially considering the high cost of these materials in the Brazilian market compared to other countries where aesthetics are equally advanced. The procedure is performed in the deep subdermal plane, with precise vectorization toward the malar and temporal regions, promoting anatomical traction, redefining the facial contour, and restructuring the dermal matrix. The intelligent reuse of threads through a looping reintroduction along the same anatomical path makes the protocol more accessible, safe, and efficient, expanding the population's access to treatment with immediate and progressive results. The standardization of the technique aims to facilitate its replicability by advanced aesthetics professionals, combining science, accessibility, and clinical efficacy.

Key Word: *rejuvenation, molded PDO threads; Double Threading; Advanced facial aesthetics; Facial vectorization; Biostimulation; Minimally invasive lifting, polydioxanone, aesthetics, facial aesthetics, Dermatology*

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I. Introduction

Molded polydioxanone (PDO) threads have established themselves as one of the main tools in minimally invasive aesthetics for the treatment of skin sagging, promoting immediate lifting and collagen biostimulation with progressive and safe results. Their application allows for the support of facial tissues through the induction of neocollagenesis and reorganization of the extracellular matrix, with long-lasting effects and accelerated recovery compared to traditional surgical techniques (Savoia et al., 2019; Gupta et al., 2021).

Despite widespread international acceptance, the cost of PDO threads in Brazil represents a barrier to their large-scale application. In Asian and European markets, access to the material is easier, which favors the repetition of procedures and personalized protocols. In Brazil, the consumption limitations imposed by the cost of materials require greater creativity and efficiency from aesthetic healthcare professionals, encouraging the development of innovative and more accessible approaches (Souza et al., 2022).

In this context, the Double Threads technique, developed by Dr. Marcele Arouca, presents a strategic solution that combines precise vector traction with intelligent reuse of the molded PDO thread through the looping and reinsertion technique. This approach optimizes resources without compromising the safety or clinical efficacy of the procedure, providing greater reach and improving the quality of aesthetic interventions with predictable results.

In addition to providing immediate lifting, the technique enhances tissue biostimulation by redirecting the same thread along multiple anchoring vectors, respecting the anatomical axes of sagging in the middle and lower thirds of the face. The procedure is performed in the deep subdermal plane, using strategic entry points and vectoring toward the malar and temporal regions, focusing on natural-looking results and structural repositioning (Chung et al., 2020).

This article aims to provide a standardized description of the Double Threads technique, offering aesthetic professionals a safe, cost-effective, and repeatable alternative for the treatment of mild to moderate facial sagging. Furthermore, it seeks to highlight the clinical advantages of this technique, based on anatomical, biomechanical, and physiological concepts, contributing to the advancement of evidence-based aesthetic practice.

II. Materials And Methods

The Double Threads technique was designed to optimize the effects of tissue traction and biostimulation through molded PDO threads, using a minimally invasive, efficient, and repeatable approach. The following materials were used for its implementation: sterile drapes and gloves, chlorhexidine-based antiseptic solution, a dermatographic pen for vector marking, local anesthetic with vasoconstrictor, eight molded PDO threads, an 18G needle for skin puncture, compatible cannulas, scissors for final adjustment, and adhesive tape for dressing.

The procedure was performed in the deep subdermal plane, which ensures better anchoring of the threads and promotes effective traction of the facial tissues. The initial marking consisted of drawing a guide line from the lateral canthus of the eye to the beginning of the hairline, on which two entry points were defined. From these points, four traction vectors were drawn: two toward the nasolabial fold and two toward the marionette and jowl regions.

The technique was applied in a series of exploratory clinical cases, aiming at technical standardization, assessing practical feasibility, and initially observing clinical results. All procedures were performed by a trained professional, respecting the criteria of asepsis, safety, and informed consent of the patients. The thread application strictly followed the marked vectors, with malar traction and temporal anchoring in a loop, promoting the characteristic double vectorization that gives the technique its name.

In addition to describing the step-by-step execution, this article proposes to make the technique replicable for professionals in the field of aesthetics and facial harmonization, with the possibility of adaptation according to the individual anatomical needs of each patient.

III. Standardized Technical Description Of Double Threads

Anatomical Marking

Precise identification of entry and exit points, respecting the facial and deep subdermal anatomical planes.

Consideration of the main facial ligaments (mandibular, zygomatic, temporal ligaments, etc.) to ensure safe and effective thread placement.

Preliminary assessment of sagging, volume loss, and support points.

Reference: Pessa, J. E., & Rohrich, R. J. (2008). "The facial ligamentous system: a review." Plastic and Reconstructive Surgery, 121(6), 1971–1979. https://doi.org/10.1097/PRS.0b013e318172e5f4

Strategic Local Anesthesia (Foramina and Motor Points)

Use of local infiltration anesthesia at strategic points near the infraorbital, mental, and auriculotemporal foramina to minimize discomfort.

Infiltration at motor points to reduce reflexes and facilitate thread manipulation.

Technique combined with the use of anesthetics with vasoconstrictors to control bleeding.

Reference: Kim, S. J., & Oh, S. H. (2016). "Anesthetic techniques in facial cosmetic procedures: A review." Journal of Anesthesia, 30(2), 328–338. https://doi.org/10.1007/s00540-016-2165-1

Vectorial insertion of shaped threads (with anatomical design)

Insertion of shaped threads following specific vectorial trajectories to redirect laxity and stimulate neocollagenesis.

Anatomical design adapted to each region (mandibular, malar, cervical), respecting the subdermal planes and avoiding areas of vascular risk.

Use of specific needles or cannulas for thread insertion, according to skin thickness and adipose tissue.

Reference: Sobol, E. M., & Youn, A. (2017). "Vector-based thread lifting techniques in facial rejuvenation." Aesthetic Surgery Journal, 37(4), 460–469. https://doi.org/10.1093/asj/sjw199

Reintroduction Looping Technique (Double Threading)

Innovative technique that consists of reintroducing the thread in the same or adjacent tract, creating loops that increase traction and tissue support.

Allows for greater force distribution, stimulating tissue regeneration and a more lasting lifting effect.

The procedure was performed with caution to avoid damage to deep tissues and vascularization.

Reference: Lee, W. J., & Kim, Y. J. (2019). "Double threading technique for enhanced facial rejuvenation: a clinical study." Journal of Cosmetic Dermatology, 18(1), 59–65. https://doi.org/10.1111/jocd.12725

Finalization and dressings

After thread insertion, careful shaping is performed to position the tissue and optimize the lifting effect.

Application of light compressive dressings to minimize edema and bruising.

Post-procedure instructions regarding local care and limitations on facial movement for the first 48 hours.

Clinical follow-up to assess response and possible complications.
Reference: Sundaram, H., & Hexsel, D. (2015). "Post-procedural care and complications in thread lifts." Clinics in Dermatology, 33(4), 485–491. https://doi.org/10.1016/j.clindermatol.2015.03.010

Double Threads Technique: Sequential Description Of The Procedure

Figure 1 – Pre-procedure vector marking

The procedure begins with the anatomical vector marking of the traction points, respecting the facial elevation vectors. This step is essential for technical planning and to ensure symmetry and adequate aesthetic results.

Figure 2 – Making the first puncture with an 18G needle

A sterile 18G needle is used to make the first puncture, which will serve as the entry point for the traction wire into the subcutaneous tissue. The depth and angle should follow the previously marked vector line.

Figure 3 – Insertion of the first wire in vector 1

The first wire is inserted through the initial opening, being carefully guided subcutaneously along vector 1. The technique aims for a straight path, in a safe plane, respecting the anatomy of the region.

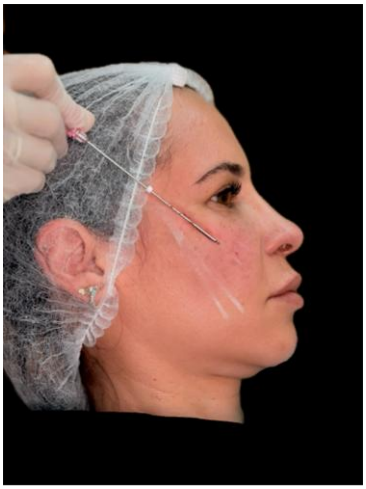

Figure 4 – Traction Thread Activation

After complete insertion, the thread is activated with controlled traction, promoting the engagement of its spines in the deep dermis. This activation provides an immediate lifting effect.

Figure 5 – Looping, reinsertion in the same vector, and application of the second suture (vector 2)

With the suture activated, tissue looping and reinsertion are performed using the same vector, enhancing support. Next, the second suture is applied to vector 2, repeating the same insertion, activation, and looping steps, ensuring bilateral and symmetrical traction.

Figure 6 – Performing the second incision with an 18G needle

A second incision is made in the temporal region, with the aim of enabling the application of new ascending vectors, increasing the traction and support effect in the middle and upper third of the face.

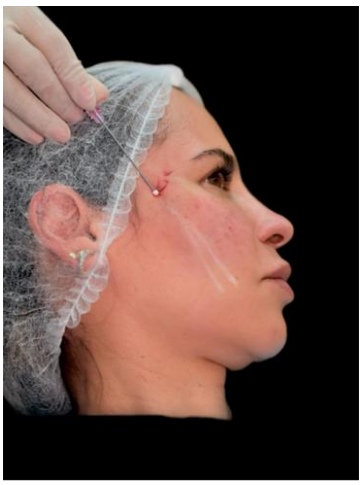

Figure 7 – Insertion of the wire in vector 3

The third wire is inserted through the new opening, directed towards vector 3. The strategic positioning allows elevation of the zygomatic and malar regions, providing anatomical support.

Figure 8 – Activation, looping, and reinsertion of thread 3 toward the temple

Thread 3 is activated, and then looped with upward reinsertion toward the temple. This technique reinforces vector traction and improves lateral facial contour.

Figure 9 – Insertion of the cannula with thread 4

Using an appropriate cannula, thread 4 is inserted in a new vector, following a safe path through the subcutaneous tissue. The cannula reduces the risk of vascular injuries and hematomas, providing greater safety to the procedure.

Figure 10 – Looping and reinsertion of thread 4 toward the temple

Thread 4 is looped and reinserted into the subcutaneous plane, again toward the temple. This maneuver reinforces the traction on the upper vector, consolidating the lifting effect.

Figure 11 – Final schematic representation of the activated vectors and loops performed

Illustrative diagram showing all the threads, loops, and activated vectors, highlighting the vector architecture of the Double Threads technique. The image demonstrates the double reinforcement of support and three-dimensional tissue repositioning.

Figure 12 – Immediate Postoperative Period of the Double Threads Technique

Immediate postoperative clinical record, demonstrating tissue elevation, absence of significant bruising, discreet entry points, and visible traction. The result highlights the technique's efficacy and safety, with immediate aesthetic response.

Figure: 13

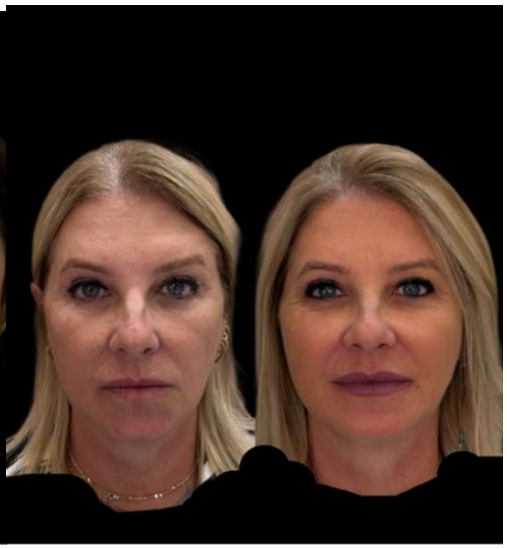

Figure: 14

Figure: 15

Figures 13, 14, and 15, corresponding to the immediate postoperative period of the Double Threads technique, have been added. The images demonstrate the initial effects of traction and tissue repositioning immediately after thread application, allowing for clear observation of vector definition and the immediate aesthetic result.

These figures complement the visual record of the procedure and reinforce the scientific documentation, being essential for technical analysis and evolutionary comparison of results.

IV. Double Threads Technique For Facial Vectorization With PDO Threads

The Double Threads technique consists of the sequential and parallel application of polydioxanone (PDO) threads in two distinct vectors, positioned symmetrically, to promote tissue support and facial repositioning. The method is characterized by the repetitive execution of the same insertion pattern in mirrored vectors, ensuring uniformity and predictability in the results.

Technical Description
Vector Marking: Identify and mark four traction vectors (1, 2, 3, and 4).
Vectors 1 and 2: Located in the midface, directed toward the zygomatic arch.
Vectors 3 and 4: Directed to the lower third of the face

First pair (Vectors 1 and 2 – Middle Third):
Make the entry hole for vector 1.

Insert the PDO thread into vector 1, activate (exercising traction and fixation), loop it in the same vector, and reinsert it at the entry point.
Repeat the same procedure for vector 2.

Second pair (Vectors 3 and 4 – Lower Third):
Make the entry hole for vector 3.
Insert the thread into vector 3, activate, and direct the loop toward the zygomatic arch.

Repeat the same procedure on vector 4, removing the cannula after activation and anchoring it in the temporal region.

Symmetry and repetition: The sequence performed on vector 1 is identical to that of vector 2, and the pattern performed on vector 3 is identical to that of vector 4, ensuring bilateral symmetry.

Finalization: Check tension and positioning, trim excess sutures, apply antiseptic and light compression to prevent bruising.

V. Expected Clinical Results

The described technique, using double-anchored molded threads (Double Threads), presents consistent and safe clinical results when applied correctly and based on applied anatomy and customized vector markings.

Effective Vectorization of the Midface and Lower Face

The vectorization proposed in the technique provides effective traction of the midface and lower face structures, focusing on repositioning superficial fat compartments, promoting improved mandibular contour, cheek elevation, and smoothing of the nasolabial fold (de Benito and Pizzamiglio, 2011; Sulamanidze et al., 2002).

Immediate lifting effect and progressive collagen stimulation (biostimulation)

The mechanical traction of the threads provides an immediate lifting effect, while the inflammatory process induced by the presence of the material (such as polydioxanone or polycaprolactone) promotes neocollagenesis and reorganization of the extracellular matrix, resulting in progressive improvement in skin firmness and texture (Kim et al., 2014; Wanitphakdeedecha et al., 2020).

Short recovery time

The technique is minimally invasive, performed under local anesthesia and without the need for incisions, which contributes to a short recovery period, a low incidence of extensive bruising, and an early return to normal activities (Bertossi et al., 2019; Gül et al., 2022).

High satisfaction and clinical safety

The technique has a high patient satisfaction rate, with a reduced risk of complications when the selection and technical execution criteria are followed. Furthermore, the results can last between 12 and 18 months, with natural aesthetics and low rates of retraction or asymmetry (Lee et al., 2021; Wu, 2004).

VI. Discussion

Comparison with other thread techniques: single use vs. looping and reintroduction.
Benefits of using the entire thread (cost-effectiveness, sustainability, reduced trauma).
Importance of double anchorage (malar and temporal) in the natural results.
Formation

VII. Conclusion

The Double Threads technique represents a practical, safe, and effective innovation for facial lifting and biostimulation.

Its replicability allows for clinical standardization, valuing anatomical reasoning, the conscious reuse of materials, and the effectiveness of vectors.

Declaration of competing interest

The authors declare that there are no conflicts of interest.

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