Research Article

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Rhinoplasty with Elastic Suture: Corrects Drooping Noses and Tip Deviations in Multi-Operated Nose (Video 1, Video 2)

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Abstract

Background: A long nose commonly results from a mismatch between tip support and the downward forces of the long septum, the muscles of facial expression and the depressor septi nasi muscle (which pulls the nasal tip downward). Cartilage laxity, an effect of gravity, also plays a role. Correction of a drooping tip varies with the cause; however, the goal of any traditional corrective technique is to reposition the cartilage to achieve a more cephalic orientation. This simple, economical elastic technique allowed, in selected cases, lifting and straightening of the nasal tip.

Objective: To correct a drooping nasal tip for aesthetic and functional reasons. The study presents the operative possibilities of an elastic suture equipped with a two-tipped needle to lift and straighten the nasal tip, even in noses that have been operated on several times. The study describes elastic rhinoplasty and some possible complementary interventions.

Materials and Methods: After local anesthesia, the surgeon implants an elastic suture with a two-tipped needle (Elasticum EP4 Korpo SRL). The surgeon attaches the elastic thread to the nasal bones through a hole made with a manual shaping drill. The elastic thread encircles the nose, permanently lifting and straightening the tip if it is crooked. Elastic rhinoplasty is often combined with anterior shortening of the septum.

Results: Elastic rhinoplasty was published in 2020 on the Medical Video Journal CRPUB.org. The procedure has been refined in terms of technique, indications and results and the twenty-six patients treated from 2023 to 2026 (19 females, 7 males) were satisfied.

Conclusion: Elastic rhinoplasty, a simple, economical and effective procedure, offers a permanent solution for patients with a long nasal tip, even a crooked one. Its long-lasting results make it a promising option for older patients seeking to improve their breathing and for those who have undergone multiple surgeries.

Keywords: Rhinoplasty; Elastic rhinoplasty; Rhinoplasty with threads; Shortening of the tip of the nose; Tip deviation; Elastic thread; Elasticum; Jano needle

Introduction

Correction of a drooping nose tip is important for aesthetic and functional reasons. There are numerous techniques [1-3].

Surgeons and patients have always wanted to correct a drooping nose tip with a minimally invasive procedure under local anesthesia. Today, an elastic thread can shorten a long nose and straighten the tip **(Figure 1)**.

The procedure is particularly suitable for young people with a long, mobile nasal tip, older patients and patients whose noses lengthen after surgery and remain crooked after open rhinoplasty.



Figure 1: Nose with a long, deviated tip. An aesthetic issue common in noses that have undergone open surgery with multiple grafts.

Materials and Methods

Elastic rhinoplasty is made possible by the elastic suture equipped with a two-tipped atraumatic Jano Needle (Elasticum EP4, Korpo srl). The non-absorbable

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elastic suture is made of medical silicone covered with polyester. It is impalpable, does not cut tissue and is characterized by fibrohistiocytic cell colonization, transforming into a "ligament".

The Jano Needle, a key component of elastic rhinoplasty, is crucial for lifting the nasal tip. The elastic thread is fixed through a bone hole made with a manual drill and a 1.5 mm tip. The holes in the nasal bones may be slightly oblique to facilitate rotation of the Jano needle. The two-tipped needle circles the nose and never fully exits the skin; it emerges only at the entry point. The depth notches allow for correct implantation between skin and bone and between skin and cartilage [4-6].

Preoperative design

The preoperative design is drawn along the sides of the nose. The line is drawn between the curved surface of the nose bridge and the plane surface of the ascending processes of the maxilla **(Figure 2)**.

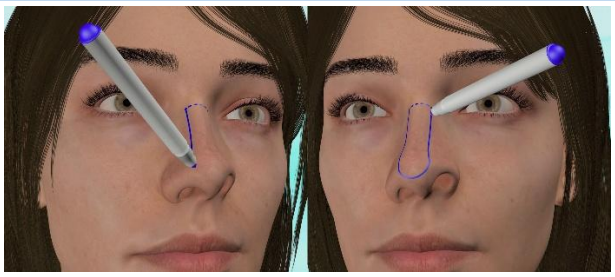


Figure 2: Left: The dashed line marks the bone tunnel. The elastic suture runs between the dorsal curve boundary and the nasal process. Right: The marked line continues between the nostril margin and the nasal tip, leading to the access point.

The line continues along the nose tip, passing halfway between the upper extremity of the nostrils and the apex of the nose. Complete the design by marking the inferior margins of the ascending processes of the maxilla, which delimit the safest area for intervention because of the presence of bone **(Figure 3)**.

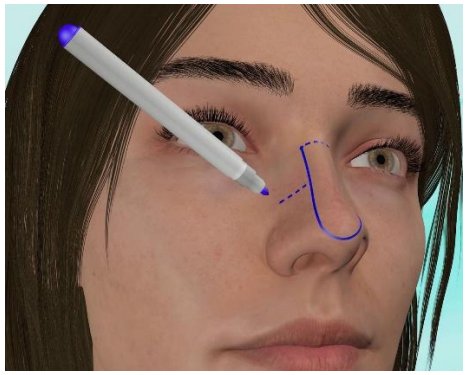


Figure 3: The bony margin of the nasal process is marked; this defines the safe zone for the two-tipped needle path.

Local anaesthesia

One-half milligram of epinephrine is added to 10 ml of 2% lidocaine or 2% mepivacaine. Use a 3 ml syringe and a 4 cm-long 27 G needle.

Perform local anesthesia at the base of the nasal pyramid. After anesthetizing the base, the operator injects the anesthetic along the Jano needle's path and in neighboring areas.

A 1 ml needleless syringe is filled with adrenaline to stop any bleeding from the holes left by the passage of the two-tipped needle.

Technique

The evening before elastic rhinoplasty, the patient begins antibiotic therapy, which continues for a week. Before starting the implant, bathe the elastic thread in a kidney-shaped basin with the contents of a vial of Clindamycin or Rifampin. Apply an anti-staphylococcal antibiotic ointment (Mupirocin) inside the nostrils [7].

The two-tipped Jano needle is slightly curved. The elastic thread (Elasticum EP4, Korpo) is fixed to the nasal bones through the skin hole of a 16 G needle and through perforations in the nasal bones **(Figure 4)**.

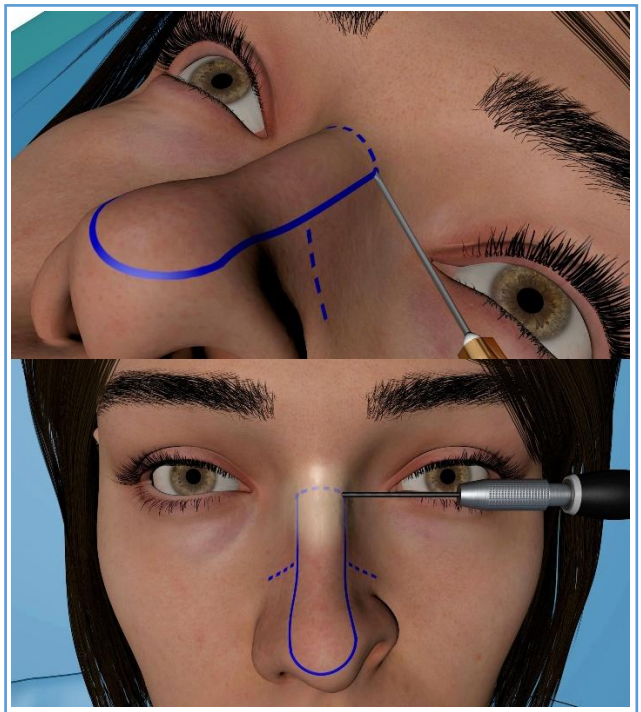


Figure 4: Above: A 16G needle pierces the skin. Below: A manual drill with a 1.5 mm bit drills through the nasal bones.

The hole in the bones is made with a manual modeling drill, with a 1.5 mm metal drill bit. The holes in the nasal bones may be slightly oblique to facilitate rotation of the Jano needle. The needle enters the bone holes and partially emerges along the pattern's

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horizontal line **(Figure 5)**. The elastic thread is pulled through. As always, fix a Klemmer to the end of the thread. Withdraw the needle until 5 mm or less of the posterior tip remains in the tissues. Rotate it and continue along its path, partially emerging along the lower border of the ascending process of the maxilla **(Figure 6)**. The elastic thread is pulled through.

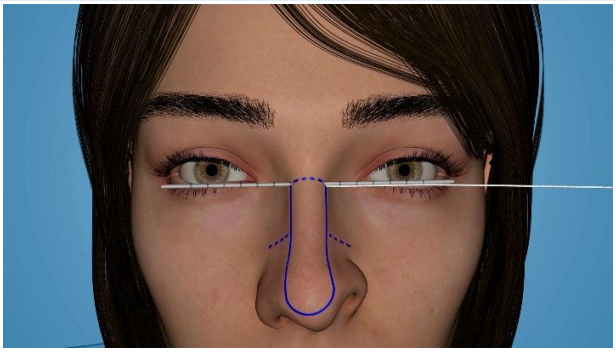


Figure 5: The Jano needle passes through the bone holes and partially exits along the marked line.

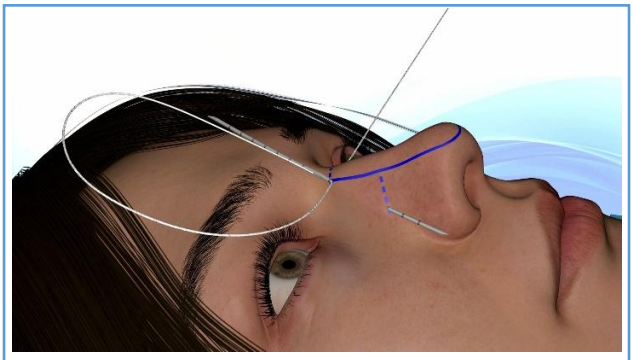


Figure 6: When 5 mm of the tip remains in the tissue, rotate the two-tipped needle toward the nasal tip.

Withdraw the needle until 5 mm of the posterior tip remains in the tissues. Then rotate it in the direction of the pattern. Once the ascending process of the maxilla, no bony plane prevents the needle from accidentally piercing the entire wall of the nasal cavity. The assistant uses a 3 ml syringe to inject an aesthetic solution immediately beneath the skin, increasing the distance between the skin and the underlying cartilage using a 4 mm needle to facilitate passage of the needle between them **(Figure 7)**. The maneuver allows the two-tipped needle to pass through correctly. Withdraw the Jano needle again and rotate it to follow the preoperative design **(Figure 8)**. When 5 mm of the tip remains in the tissue, rotate the needle and exit completely through the skin hole **(Figure 9)**.

Pull the two ends of the elastic thread. If the nose tip is deviated, pull one end of the elastic thread tighter (Video 1). If there are no corrections to be made to the bridge of the nose, the two ends of the elastic thread are knotted.



Figure 7: Retreat the elastic suture and rotate the Jano needle toward the tip, passing between the skin and the cartilages. An assistant can facilitate this passage by injecting local anesthetic subcutaneously.



Figure 8: Once the elastic thread is withdrawn, the two-tipped needle continues along the established path between the skin and the cartilage.

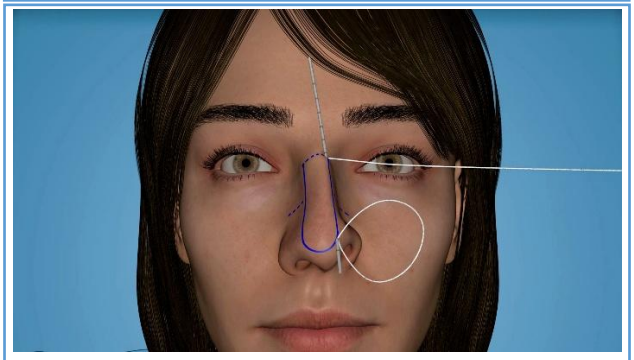


Figure 9: The Jano needle exits completely through the skin access hole. Pull the two ends of the elastic suture taut to shorten the nasal tip.

The knot is inserted into the hole in the bone using fine tweezers. Do not suture the skin hole. If there is bleeding, adrenaline is injected into the skin holes without the needle. You can also inject Clindamycin or Rifampin into skin holes with a 1 ml syringe without a needle. Apply an antibiotic ointment until it heals completely. Sterile plasters immobilize the nose without blocking the Jano needle passage holes. The nasal tip is lifted and straightened **(Figure 10)**.

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Figure 10: Correct a crooked nose tip by applying more tension to one suture strand than the other. The suture is knotted and the knot is pushed deep into the bone hole using fine forceps (See Video 2).

In noses that have undergone multiple operations, perform pre-tunneling with a two-tipped needle without the elastic thread to help the elastic suture pass through scar tissue **(Figure 11)**. When the Jano needle encounters resistance, a 180° rotation or forward/backward movement helps it pass.



Figure 11: Nose that has undergone multiple surgeries. Pre-tunneling; tip elevation.

Complementary interventions, such as reducing the length of the septum **(Figure 12)**, supra tip and nasal alae and small reductions of the nasal hump, often accompany elastic rhinoplasty **(Figure13)**. We also performed an external greenwood fracture using a 2 mm chisel. We performed any procedures that did not interfere with the path of the elastic thread.



Figure 12: Resection of the cartilaginous hump. Tip elevation and anterior septal reduction.

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Figure 13: Tip elevation. Resection of the cartilaginous hump. Anterior septal reduction and excision at the base of the nasal wings.

Results

No complications, such as loss of thread traction and infection, occurred in the eighteen patients who underwent this recent elastic rhinoplasty with bone fixation and immersion of the elastic thread in Clindamycin or Rifampin (30% of people carry staphylococcus in nose [8]).

Elastic rhinoplasty efficaciously reduces the length of the nose, even if the nose has already undergone several operations. It has also proved able to correct tip deviations.

Discussion

Many people want to correct the most common nasal defect, a long or drooping nose, with a minimally invasive procedure: Implanting a thread with a two-tipped needle. Elastic rhinoplasty can correct noses that have never been operated on **(Figure 14 and Figure 15)** and those that have already undergone rhinoplasty.



Figure 14: Tip elevation. Anterior septal reduction.



Figure 15: Previously unoperated nose. Supratip reduction, mechanical rasping of the bony hump. Anterior septal reduction and tip elevation with elastic thread (See Video 2).

The procedure is particularly indicated for young patients and for elderly patients with a drooping nasal tip to improve respiratory function as well as for patients with visible deformities whose correction does not interfere with the implant's path once the elastic thread is inserted but not yet knotted, the surgeon performs the necessary corrections: Removal of the cartilaginous hump, rasping of the bony hump, reduction of the anterior septum (Video 2). Elastic rhinoplasty can be a satisfactory solution for patients who have already undergone multiple open procedures and want to shorten their nose or correct a crooked tip.

If the nasal tip is bulbous or there is a very pronounced hump, the correction must be performed using a traditional procedure either open or closed. Anyone beginning to practice elastic rhinoplasty should also be familiar with traditional techniques.

Conclusion

Elastic rhinoplasty is a simple, effective, permanent and outpatient procedure. It is indicated for patients with a long, mobile nasal tip and for correcting surgically altered noses. In these patients, elastic rhinoplasty eliminates elongation and deviation of the nasal tip while minimizing surgical trauma. The low cost makes it particularly suitable for elderly patients seeking to improve their breathing. In young patients who have never undergone surgery, elastic rhinoplasty allows effective, stable tip elevation without the undesirable "operated nose" look.

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