

External Approach in Rhinoseptoplasty

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Abstract

The authors address the issue of the external approach in rhinoseptoplasty, discuss its main features, indications, surgical technique and the controversies about the columellar scar. They believe that the direct vision of the nasal structures facilitates both diagnosis and treatment of the esthetic-functional deformities of the nose.

Introduction

Among all esthetic surgery, rhinoplasty is considered the most difficult one to perform, the highest stage in the acquisition of skills by the plastic surgeon. This is mainly due to the fact that most of the work is done almost "blindly", with a very limited view of the anatomical structures and it relies mainly on the tactile sensations rather than visual ones. Also, severe functional and esthetic problems may occur when the endonasal incisions are not sufficient for the precise diagnosis and proper treatment of the existing deformities.

Aware of these difficulties, in an attempt to overcome them, we have been performing the external approach to rhinoplasty.

According to the Sushruta Samhita (approx. 600 BC), external incisions for nasal repairs were already performed in India at that time³⁰. In 1920, Gillies described the "elephant trunk" incision as an approach for the

treatment of the nose tip^{1,30}. In 1929 and 1931, Rethi²⁵ presented his classical transcolumellar incision. Sercer, in 1956²⁷, extended Rethi's exposure to work on the dorsum of the nose, calling it "nasal decortication". In this same year, Hauberisser published a modification of Rethi's technique in which the vestibular incision extended lateral and externally, contouring the ala³⁰. In 1966, Padovan^{22,23} recommended the use of the same technique for treating the nasal septum, calling it "open sky rhinoplasty" for the first time.

Since then, there have been many papers defending this approach for different purposes. In Brasil, Ribeiro²⁶ had a paper on "open sky rhinoplasty" on the XXII Brazilian Congress of Plastic Surgery, in 1985, and, more recently, Sperly³¹ has been defending the method, which he named "Exorhinoplasty".

Patient and Methods

The external approach is indicated for those patients with sequelae from trauma and significant deviation of the nasal bridge and septum^{5,6,12,16,17}, prominent, bulbous or bifid nasal tips^{1,2,4,5,14,17}, valvar disfunctions, septal perforations²⁰, negroid and leporino noses^{4,7}, congenital deformities^{1,7,18}, as a route for trans-septal sphenoidectomies^{19,21}, or in secondary rhinoplasties^{1,2,5,11,12,17}.

Currently we have been using the external approach for all our cases of rhinoplasty, both primary and secondary, with rewarding results, not recommend it only when the patient does not accept an external scar, in minor rhinoplasties or when there are scars that could affect the viability of the columellar flap.

Anesthesia and local infiltration - Both general endotracheal or local anesthesia can be used to perform the method. The nose is infiltrated with approximately 7-8 ml of a solution containing: 20 ml of 0,5% Marcaine without vasoconstrictor plus 20 ml of saline solution

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plus 0,5 ml of adrenaline 1/1000. We prefer marcaine due to the prolonged analgesia, giving extra comfort to the patient in the immediate post-operative period. We start infiltrating the dorsum downward, followed by the collumela, nasal spine and vestibulum. If necessary, a subpericondrial infiltration of the septum is done. Immediately before performing the lateral fractures we do the infiltrating of these areas.

External approach - A transverse medio-collumelar incision (Fig. 1) associated to bilateral marginal alar incisions is the way to start this approach. The transverse medio-collumelar incision is broken by an inverted "V" wich prevents future retractions¹⁷ (Fig. 2a).

The marginal incisions should be placed alongside the caudal edge of the lateral crura, domus and medial crura where they meet at right angles with the medio-collumelar incision on either side of the collumela (Fig. 2b). It is important to emphasize that the incision should be marginal to the caudal edge of the alar cartilages and not to the nostrils, avoiding thus retractions of the borders of the nostrils^{1,15,17}.

Through careful dissection, the elevation of the cutaneous flap of the medial crura is started, caring not to damage it. The dissection is continued upward over the lateral crura and the osteo-cartilagineous dorsum. If performed correctly (right above the pericondrium) the dissection plane is, for all practical purposes, avascular. Occasional bleeding can be controlled by bipolar coagulation.

This way, the structures of the dorsum and the tip of the nose are widely exposed (Fig. 3). This should be the moment to assess the different problems and review the surgical plane.

Treatment of the deformities of the dorsum - The treatment of the osteocartilaginous hump is performed under wide direct vision according to the surgeon's preference. One can do it with rasps, scissors or chisel^{17,32}. Bony or cartilagineous grafts can be included and placed over the dorsum to correct depressions, assymetries or saddling.

Treatment of the deformities of the tip - The choice of treatment method will depend on the deformities found and on the surgical plan. The external approach allows a precise assessment of symmetry and harmony, as well as remodelling of the nose tip with the exclusion or inclusion of elements^{3,4,10,13,18,24,28,29} with fixation or repositioning as needed.

Fractures - It is the only step in which the structures that are being treated are not visualized directly. The lateral fractures can be done both endonasally or externally depending on the surgeon's experience^{8,17,34}.

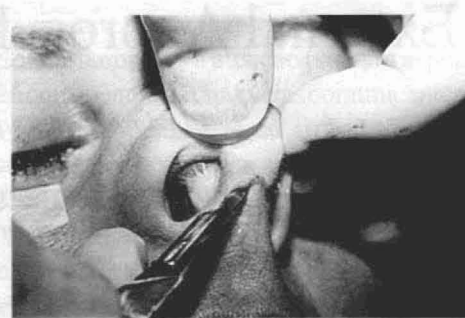


Fig. 1 - Trans-operative view of transverse medio-collumelar incision. It must be broken by an inverted "V" in order to prevent future retractions in this area.

Fig. 1 - Aspecto transoperatório da incisão externa transcolumelar que deve ser "quebrada" por um "V" invertido que previne futuras retrações.

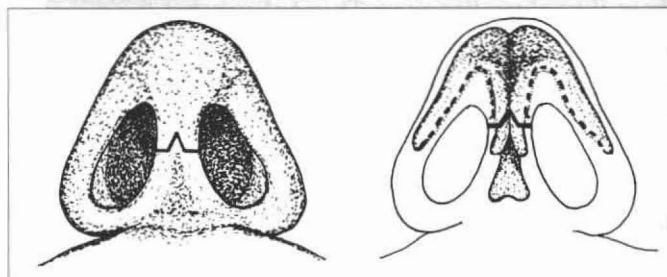


Fig. 2a) - Schematic representation of the transverse medio-collumelar incision. **b)** - The marginal incisions should be placed alongside the caudal edge of the lateral crura, domus and medial crura where they meet with the medio-collumelar incision at right angles.

Fig. 2a) - Representação esquemática da incisão que utilizamos para a abordagem externa. **b)** - As incisões marginais devem ser colocadas ao longo dos bordos caudais das crura lateralis, domus e crura medialis, onde encontram, em ângulo reto, a incisão mediocolumelar.



Fig. 3 - Trans-operative view of the wide exposition of the structures of the dorsum and the tip.

Fig. 3 - Visão transoperatória da ampla exposição obtida das estruturas do dorso e ponta.



Fig. 4 - The external approach allows any correction procedure on the septum.

Fig. 4 - A abordagem externa permite, também, a correção de deformidades do septo nasal.

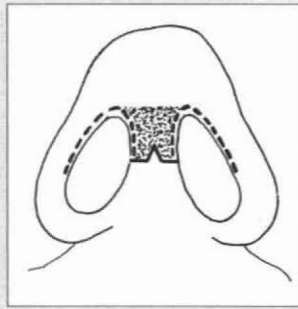


Fig. 5 - Comparing closed and open techniques, the difference in undermined areas is minimal (approx. 0,5 cm²).

Fig. 5 - Se compararmos as técnicas fechadas com a aberta, a diferença entre as áreas descoladas é mínima, envolvendo um segmento de 0,5 cm².

Treatment of the nasal septum deformities - This approach allows the execution of any correction procedure for septal deformities or deviations as well as harvesting septal samples to be used as grafts^{6,16,17}.

Starting by the upper approach, after lowering the dorsum, it is possible to perform a broad submucoperichondrial detachment of the entire septum, exposing existing deviations, fractures or spurs (Fig. 4).

Closure and immobilization - The collumellar incision is meticulously closed with non-absorbable 6-0 sutures and the vestibular one with absorbable 5-0 sutures.

Immobilization is done with surgical tape and cast.

Nasal packing is used when procedures involving the septum are performed.

Discussion

The external approach for rhinoplasty has been the subject of a great deal of controversy, especially in regard to the columellar scar. We have observed, however, that if the technique is well performed and the suture of the columella is carefully done, the scar will become imperceptible with time. Less conspicuous than the ones from the classical and universally accepted perialar incisions.

In respect to the more pronounced edema of the nasal tip, it is our impression that it is related rather to an exaggerated tissue manipulation and prolonged surgery time than to the technique itself. There is no question that it is a technique that takes longer to perform. Would this be a real disadvantage compared to the obtained refinement?

If we compare closed and open techniques, the difference in undermined areas is minimal, involving a segment of approximately 0,5 cm² from the columella¹⁶ (Fig. 5).



Fig. 6a - Preoperative front view of a patient with important rhinoseptal deviation from trauma. **Fig. 6a -** Pré-operatório de paciente com importante rinosseptodesvio pós-traumático. **Fig. 6b -** Post-operative front view after correction by external approach and complete rhinoseptoplasty. **Fig. 6b -** Pós-operatório de rinosseptoplastia por abordagem externa.

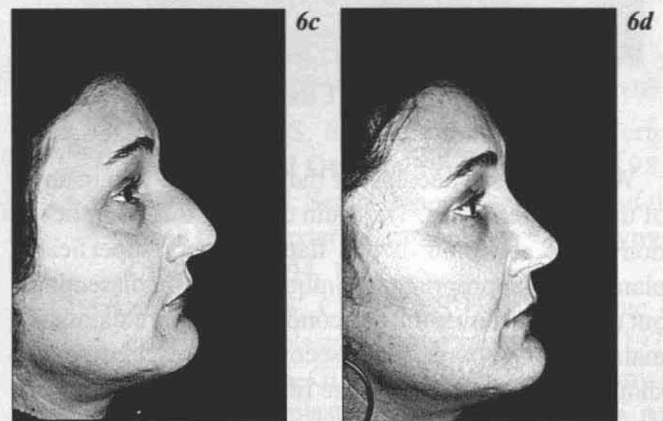


Fig. 6c - Preoperative perfil view of the same case. **Fig. 6c -** Pré-operatório em perfil do mesmo caso. **Fig. 6d -** Post-operative view after correction. **Fig. 6d -** Pós-operatório.



Fig. 7a - Preoperative front view of a patient with sequelae of previous rhinoplasty. Notice misalignment of nasal pyramid and asymmetric bulbous tip. **Fig. 7a** - Aspecto pré-operatório de paciente com seqüela de rinoplastia prévia. Observa-se desvio de pirâmide nasal, além de assimetria e bulbosidade de ponta.



Fig. 7b - Post-operative view after correction through an open approach. **Fig. 7b** - Aspecto pós-operatório de resultado obtido através de rinoplastia por abordagem externa.



Fig. 7c - Basal view. Important asymmetry is noticed. **Fig. 7c** - Pré-operatório. Observe a assimetria e bulbosidade da ponta nasal.



Fig. 7d - Basal post-operative view of the result achieved. Inconspicuous scar in the collumela. **Fig. 7d** - Pós-operatório. Cicatriz imperceptível.



Fig. 7e - Perfil preoperative view of the same case. **Fig. 7e** - Pré-operatório em perfil.



Fig. 7f - Post-operative view. **Fig. 7f** - Pós-operatório.

We did not see necrosis of the columellar flap in any of the operated cases. The main cause of this complication is the elevation of this flap in a very superficial plane. With appropriate technique, carefully dissecting out the flap just over the pericondrium, the circulation is maintained. Of course, in the secondary cases, extra-care should be taken, due to tissue fibrosis.

Conclusions

This approach, aside from the already mentioned

indications and the irrefutable advantage of the direct vision, has brought also new perspectives for the teaching of rhinoplasty^{1,16,17,35}, making all the steps of the procedure clearer to understand. On the other hand, it is not a technique for those with little experience or for "beginners". As reviewed, it facilitates the treatment of the nasal structures, but it does not warrant better results. In order to achieve the proposed preoperative goals, an esthetic perception and knowledge of anatomy and surgical technique along with the surgical refinement of rhinoplasty are required.



Fig. 8a - Preoperative aspect of a patient with discreet dorsal hump, broad tip and septal deviation in zone 2.

Fig. 8a - Pré-operatório de paciente com discreta giba, ponta projetada e desvio septal.



Fig. 8b - Post-operative aspect after rhinoseptoplasty by external approach.

Fig. 8b - Pós-operatório.



Fig. 8c - Perfil preoperative view of the same patient.

Fig. 8c - Vista em perfil pré-operatória da mesma paciente.

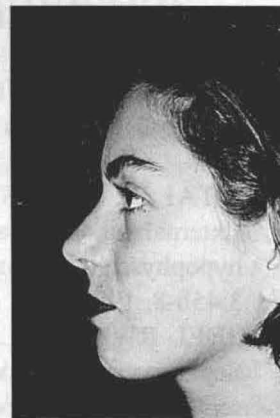


Fig. 8d - Post-operative view.

Fig. 8d - Pós-operatório do resultado obtido.

References

- ADAMSON PA. Open rhinoplasty. **Otolaryngol Clin N Am** 20: 837-52, 1987.
- ANDERSON JR, JOHNSON CM Jr, ADAMSON PA. Open rhinoplasty: an assessment. **Otolaryngol Head Neck Surg** 90: 272-4, 1982.
- BRENNAN HG. Dome splitting technique in rhinoplasty with overlay of lateral crura. **Arch Otolaryngol** 109: 586-92, 1983.
- BRIANT TDR. Management of the nasal tip in the external approach rhinoplasty. **J Otolaryngol** 7:18-23, 1978.
- BURGESS LP, QUILLIGAN JJ, VAN SANT TE Jr. The external (combination) rhinoplasty approach for the problem nose. **J Otolaryngol** 14: 113-119, 1985.
- CONRAD K. Correction of the crooked noses by external rhinoplasty. **J Otolaryngol** 7:32-42, 1978.
- ECKER H A. A direct approach to the more severely deformed cleft lip nose. **Plast Reconstr Surg** 67: 369-374, 1981.
- FARRIOR RT. The osteotomy in rhinoplasty. **Laryngoscope** 88: 1449-59, 1978.
- FENTON RS. External septorhinoplasty - Why the fuss? **J Otolaryngol** 7:3-5, 1978.
- GOLDMAN IB. New technique for corrective surgery of nasal tip. **Arch Otolaryngol** 70: 183-213, 1963.
- GOODMAN WS. The external approach to rhinoplasty. **Can J Otolaryngol** 2: 207-10, 1973.
- GOODMAN WS. Recent advances in external rhinoplasty. **J Otolaryngol** 10: 433-9, 1981.
- GOODMAN WS. Septo-rhinoplasty: surgery of the nasal tip by external rhinoplasty. **J Laryngol Otol** 94: 485-94, 1980.
- GOODMAN WS, CHARLES DA. Technique of external rhinoplasty. **J Otolaryngol** 7:13-17, 1978.
- GOODMAN WS, GILBERT RW. The anatomy of external rhinoplasty. **Otolaryngol Clin N Am** 20: 641-52, 1987.
- GRUBER RP. Open rhinoplasty. **Clin Plast Surg** 15: 95-114, 1988.

17. JOHNSON CM Jr & TORIUMI DM: **Open Structure Rhinoplasty**, Philadelphia, W.B. Saunders, 1990.
18. KAMER FM, CHURUKIAN MM: Shield graft for the nasal tip. **Arch Otolaryngol** 110:608-10, 1984.
19. KOLTAI PJ, GOLDSTEIN JC, PARNES SM: External rhinoplasty approach to trans-sphenoidal hypophysectomy. **Arch Otolaryngol (Stockh)** 3:456-8, 1985.
20. KRIDEL RWH, APPLING WD, WRIGHT WK: Septal perforation closure utilizing the external septorhinoplasty approach. **Arch Otolaryngol (Stockh)** 112:168-72, 1986.
21. McCURDY JA, VANSANTTE, YIMDWS: Trans-septal, trans-sphenoidal hypophysectomy via the external rhinoplasty approach **J. Otolaryngol** 7:29-31, 1978.
22. PADOVAN T. External approach in rhinoplasty (decortication). **Symp ORL** 3/4: 354-360, 1966.
23. PADOVAN IV: External approach in rhinoplasty (decortication). In CONLEY J & DICKINSON JT (Eds): **Plastic and Reconstructive Surgery of the Face and Neck**. New York, Grune & Stratton, 1972, p. 143-6.
24. PECK G C: The onlay graft for nasal tip projection. **Plast Reconstr Surg**. 71:27-39, 1983.
25. RETHI A: Operation to shorten an excessively long nose. **Rev Chir Plast** 2:85, 1934.
26. RIBEIRO L: Rinoplastia a céu aberto. In: **Anais do XXII Congresso Brasileiro de Cirurgia Plástica**. Porto Alegre, Aplub, 1985. p. 255-7.
27. SERCERA: Dekortication der nose. **Chir Maxillofac Plast (Zagreb)** 1:49, 1958.
28. SHEEN JH: **Aesthetic Rhinoplasty**. ST Louis, CV Mosby Co, 1978.
29. SIMONS RL: Vertical dome division in rhinoplasty. **Otolaryngol Clin N Am** 20: 785-96, 1987.
30. SNELL GED: History of external rhynoplasty. **J Otolaryngol** 7:6-8, 1978.
31. SPERLI A: Exo-rinoplastia. **Rev Soc Bras Cir Plast** 3:126-137, 1988.
32. SULLIVAN M J & KRAUSE C J: Surgery of the bony and cartilaginous dorsum. **Otolaryngol Clin N Am** 20:825-35, 1987.
33. VOGT T : Tip rhinoplastic operations using a transverse collumelar incision. **Aest Plast Surg** 7:13-19, 1983.
34. WEBSTER RC, DAVIDSON TM, SMITH R C: Curved lateral osteotomy for airway protection in rhinoplasty. **Arch Otolaryngol** 103: 454-8, 1977.
35. WRIGHT WK & DRIDEL RWH: External septorhinoplasty: a tool for teaching. **Laryngoscope** 91:945, 1981.