Uncommon Cases on Nose Surgery

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ABSTRACT

Three cases of nasal surgery requiring less used procedures in daily clinical practice are presented. In the first case, a tibial graft early carried out was reused and associated to cartilaginous graft and inclusion of porous polyethylene. Converse flap was used for the second case and nasal dorsum tissue expansion was the resource adopted for the third case. The results obtained are shown and conduct in each case is discussed.

INTRODUCTION

Treatment of rhinoplasty sequelae and nose reconstruction have arisen the plastic surgeon interest and allowed for a rich production of scientific papers.

Nasal reconstruction seemingly originated in India, in 3,000 B.C., using frontal region skin and, in other times and places, flaps for nasal reconstruction came from arm (Tagliacozzi, 1597), neck, abdomen and shoulder. More modern methods evolved to three basic lines: (1) Indian method, with the use of frontal median flap; (2) French method, using side flaps at nasolabial and face region, and (3) Italian method, involving brachial flap. Nowadays we also rely on microsurgical flaps and the use of dermoeexpanders(1).

Converse proposed the performance of an axial cutaneous flap ("scalp flap") based on superficial temporal artery that uses frontal region tegument advancing to nasal region. This flap pedicle includes a scalp segment which, after integration period, is returned to its original position and the remaining bloody zone is repaired with skin free graft(2, 3).

One of the difficulties found in clinical practice is the choice of the ideal organic or inorganic material to replace tissues and correct nasal defects. Sheen(4) presented...
extensive rationale for the use of nasal septum and auricular concha autogenous cartilage in secondary rhinoplasty and reported this one as the ideal material for reparation of substance and support structure loss with good results.

CASE STUDY

Three clinical cases of patients victims of accident with nasal traumatism and submitted to previous treatment in other services are presented.

CASE # 1

Female patient victim of automobile accident with multiple nose fractures and submitted to several surgical interventions performed by different surgeons aiming at repairing trauma lesions (Figs. 1 and 2). Among the previously carried out procedures, an

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**Fig. 1 -** Preoperative photograph of case #1 patient, showing limits of glabella bone graft down to nasal tip.

**Fig. 1 -** Fotografia pré-operatória da paciente do caso n° 1, demonstrando os limites do enxerto ósseo da glabella até a ponta nasal.

**Fig. 2 -** Preoperative photograph of case #1 patient, side view.

**Fig. 2 -** Fotografia pré-operatória da paciente do caso n° 1, em perfil.

**Fig. 3 -** Case #1 intraoperative showing tibial bone graft reaching nasal tip region.

**Fig. 3 -** Intra-operatório do caso n° 1 mostrando o enxerto ósseo tibial atingindo a região da ponta nasal.

**Fig. 4 -** 3D-computerized tomography showing tibial bone graft surgically observed in Fig. 3.

**Fig. 4 -** Tomografia computadorizada em 3D mostrando o enxerto ósseo tibial observado cirurgicamente na Fig. 3.

**Fig. 5 -** Photograph of case #1 patient presenting nasal dorsum irregularities seven months after last surgery.

**Fig. 5 -** Fotografia da paciente do caso n° 1, apresentando irregularidades do dorso nasal no período de sete meses após a última cirurgia.
autogenous bone grafting from a tibial segment for repairing nasal dorsum was carried out. The bone graft was introduced under pressure ("fastened with pegs") at glabella region and its lower end was situated at nasal tip (Figs. 3 and 4).

The patient complained of non-esthetic aspect and nasal tip hardness. She was submitted to open sky treatment (open rhinoplasty) with graft section at its median portion, and distal fragment was transferred to right side of proximal fragment (fixed) in close contact to this and fixed by steel thread. Nose median third and tip regions were repaired with auricular cartilage autogenous graft, in such a way to achieve a esthetically better mobile tip. Despite the whole nasal dorsum being covered by temporal fascia graft, the patient presented nasal dorsum irregularities by the seven-month postoperative (Fig. 5). It has been finally selected to use gutter-shape porous polyethylene (Medpor®) and, at the same surgical procedure, partially absorbed cartilaginous grafts were drawn achieving uniformity to the region (Fig. 6). Figures 7 and 8 present postoperative result 12 months after inclusion of porous polyethylene.

**CASE # 2**

Patient victim of automobile accident with multiple facial wounds, including loss of the whole cutaneous coverage and nasal tip cartilages. At first care we carried out removal of all devitalized tissues and proceed to partial skin grafting for bloody area coverage and prevention of infection (Fig. 9).

Emergency room surgeon report described a de-gloving at frontal region. This fact, associated to clinical examination of patient, showed vascular pedicle lesion and contraindicated execution of frontal median flap ("Indian flap"). For this reason, we chose to use Converse flap based on right superficial temporal artery with migration of frontal region medial portion to coat dorsum, tip and columna, carried out two month after skin graft. The cartilaginous losses were repaired with auricular cartilage autogenous grafts (Fig. 10). Figures 11, 12, 13 and 14 show the patient at 24-month postoperative period, waiting for orbitopalpebral reconstruction surgery.
Fig. 9 - Case #2 patient presenting multiple face wounds and total loss of nasal coverage 10 days after trauma.

Fig. 10 - Photograph of case #2 patient at postoperative twenty-first day after reconstruction with Converse flap upon pedicle release.

Fig. 11, 12 & 13 - Side, oblique and front view photographs of case #2 patient, at 24 month postoperative.

Fig. 14 - Photograph of case #2 patient wearing sun glasses for social life while awaiting for orbitopalpebral reconstruction surgery.
Fig. 15 - Photograph of case #3 patient showing frontal region and scalp anterior third tegumentary lesion.

Fig. 15 - Fotografia da paciente do caso n° 3 demonstrando lesão tegumentar da região frontal e do terço anterior do couro cabeludo.

Fig. 16 - Photograph of case #3 patient, with skin graft integrated to frontal region. Nose presents nasal tip lesion with skin, cartilage and pad loss.

Fig. 16 - Fotografia da paciente do caso n° 3, com enxerto de pele integrado na região frontal. O nariz apresenta lesão da ponta nasal, com perda de pele, cartilagens e forro.

Fig. 17 - Photograph of case #3 patient in the cutaneous expansion period of nasal dorsum region, with frontal pileous region already reconstructed after great scalp expansion.

Fig. 17 - Fotografia da paciente do caso n° 3 no período de expansão cutânea da região do dorso nasal, com região pileosa frontal já reconstruída após grande expansão do couro cabeludo.

Fig. 18 - Photograph of case #3 patient showing expansion obtained, at 30-day postoperative period, awaiting for supplementary surgery.

Fig. 18 - Fotografia da paciente do caso n° 3 demonstrando a expansão obtida, no período pós-operatório de 30 dias, aguardando etapa cirúrgica complementar.

Figs. 19 & 20 - Photographs of case #3 patient at 20 day early postoperative period after last procedure.

Figs. 19 e 20 - Fotografias da paciente do caso n° 3 no período pós-operatório precoce de 20 dias após o último procedimento.
Nasal tip reparation should not be carried out with rigid material and so auricular cartilage constitutes the ideal material to replace losses at this region. Peer4, Jovanovic & Berghaus10 et al. emphasized the long survival of cartilaginous autogenous draft, its availability and its possibility of being sculptured.

The use of cutaneous flaps to substitute nasal tegument losses must always give priority to the neighboring tissues that have proper coloration and thickness to cover nose. Execution of flaps with axial pedicles requires anatomical knowledge and technical skills of the surgeon as the failures in these surgeries lead to hard resolution sequelae.

In case #2, the impossibility of performing frontal median flap ("Indian") led us to indicate Converse flap. The advantage of this flap is that it has sufficient tissue to reconstruct the nose lobule portion and columella and in addition, its length provides attainment of proper size and projection of nasal tip. The ideal cutaneous coverage should respect the nose esthetic unit.

The use of expanders of nasal dorsum tissue has a very limited indication but, in case #3, seemed to be the best option as the other alternatives would add scars to nasolabial regions or would imply the use of flaps at distance with less favorable esthetic results.

**REFERENCES**


