

species and their environmental status.<sup>4</sup>

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#### References

- 1 Nonomura H, Kato N, Ohno Y, et al. Indigenous bacterial flora of medicinal leeches and their susceptibilities to 15 antimicrobial agents. *J Med Microbiol* 1996;45:490-493
- 2 Thearle MJ. Leeches in medicine. Surgical history. *Aust N Z J Surg* 1998;68:292-295
- 3 Bickel KD, Lineaweaver WC, Follansbee S, et al. Intestinal flora of the medicinal leech *Hirudinaria manillensis*. *J Reconstr Microsurg* 1994;10:83-85
- 4 de Chalaïn TMB. Exploring the use of the medicinal leech: a clinical risk-benefit analysis. *J Reconstr Microsurg* 1996;12:165-172

#### Re: Increased Axonal Regeneration Through a Biodegradable Amnionic Tube Nerve Conduit: Effect of Local Delivery and Incorporation of Nerve Growth Factor/Hyaluronic Acid Media

We read the recent article by Mohammad and colleagues (*Ann Plast Surg* 2000;44:59-64) with great interest and would like to comment on it. In their paper Mohammad and colleagues emphasized the possible enhancement of axonal regeneration using nerve growth factor (NGF) and hyaluronic acid (HA) inside a biodegradable nerve guide manufactured from a human amnionic membrane.

The concept of incorporating an additive in a conduit to promote the nerve regeneration process is not new. It is important for the reconstruction of longer defects, because in

long gaps nerve regeneration is compromised substantially.<sup>1</sup> Both the effects of NGF<sup>2,3</sup> and the use of HA<sup>4,5</sup> on nerve regeneration have been documented separately in the literature. Also, the use of a subcutaneously placed reservoir connected to the proximal end of a nerve conduit for the local, slow administration of neurotrophic growth factor, such as NGF, has already been described.<sup>6</sup> Based on the available literature, the results as described in the study of Mohammad and colleagues were, therefore, predictable.

Full restoration of sensory and motor nerve function after peripheral nerve repair often fails.<sup>7</sup> Lesions in the sciatic nerve result in denervation of a complex of muscles (e.g., soleus, gastrocnemius, anterior tibial muscles). Often, axonal misdirection within the peripheral target regions (which leads to so-called *cross-innervation*) will cause incomplete return of function.<sup>8</sup> As a result, between 30% and 75% of receptors will not be reinnervated. The mislocation of axons within the peripheral target regions may have a negative effect on the proprioceptive feedback in movement control. Therefore, microscopic observations just distal to the coaptation site do not necessarily have to correlate with functional nerve recovery. The authors' end statement—"additional studies are necessary to determine the functional outcome"—is therefore certainly justified, and we look forward to their results.

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#### References

- 1 Francel PC, Francel TJ, Mackinnon SE, Hertl C. Enhancing nerve regeneration across a silicone tube conduit by using interposed short-segment nerve grafts. *J Neurosurg* 1997;87:887-892
- 2 Hollowell JP, Villadiego A, Rich KM. Sciatic nerve regeneration across gaps within silicone chambers: long-term

effects of NGF and consideration of axonal branching. *Exp Neurol* 1990;110:45-51

- 3 Ahmed Z, Brown RA, Ljungberg C, et al. Nerve growth factor enhances peripheral nerve regeneration in non-human primates. *Scand J Plast Reconstr Surg Hand Surg* 1999;33:393-401
- 4 Seckel BR, Jones D, Hekimian KJ, et al. Hyaluronic acid through a new injectable nerve guide delivery system enhances peripheral nerve regeneration in the rat. *J Neurosci Res* 1995;15(40):318-324
- 5 Wang KK, Nemeth IR, Seckel BR, et al. Hyaluronic acid enhances peripheral nerve regeneration in vivo. *Microsurgery* 1998;18:270-275
- 6 Santos X, Rodrigo J, Hontanilla B, Bilbao G. Local administration of neurotrophic growth factor in subcutaneous silicon chambers enhances the regeneration of the sensory component of the rat sciatic nerve. *Microsurgery* 1999;19:275-280
- 7 Mackinnon SE, Dellon AL. *Surgery of the peripheral nerve*. New York: Thieme, 1988
- 8 Scott JJA, Davies P, Petit J. The static sensitivity of tendon organs during recovery from nerve injury. *Brain Res* 1995;697:225-234

#### Different Approaches in Extreme Nasal Septum Deviation

Extracorporeal septoplasty involves the removal, remodeling, and replacement of the septal cartilage in patients with substantial deviation of nasal quadrangular cartilage and ensuing respiratory deficiency. The components of the osteocartilaginous bone can be involved—to various degrees—in the presence of a nasal pyramid deviation.

Many techniques are available to recover a normal morphology of the nose, and to improve respiratory function, such as asymmetrical osteotomies, submucosal resections, and mixed bone and cartilaginous grafts. However, these techniques do not always succeed in obtaining satisfactory results in terms of functional and aesthetic outcome.

The employment of a technique that involves the removal, extracorporeal remodeling, and replacement of the quadrangular cartilage, first described in 1952 by King and Ashley,<sup>1</sup> is the one that allows the best result even in the presence of a

In all patients a satisfactory recovery of normal morphology of the nasal pyramid and improved respiratory function, evaluated by a careful clinical investigation and by an anterior rhinomanometric test, were obtained. The result of the pre-

operative rhinomanometric test had a mean value of 4.3 mm H<sub>2</sub>O (range, 3.6-5.2 mm H<sub>2</sub>O). The 12-month postoperative mean value was 0.7 mm H<sub>2</sub>O (range, 0.3-0.9 mm H<sub>2</sub>O). Considering that the normal value is between 0.2 mm H<sub>2</sub>O and 0.6 mm H<sub>2</sub>O, a good improvement of respiratory function was indeed obtained.

The presence of a submucosal hematoma in one patient, drained on day 3, did not affect the outcome. No patient presented a spontaneous septal displacement. No substantial reabsorption of the reinserted septal cartilage was detected in any of the two groups of patients.

The average follow-up was 32 months. Of the eight patients who underwent a surgical procedure with the open rhinoplasty approach, six were fully satisfied of the outcome, whereas the remaining two patients considered the transcolumellar scar unsatisfactory.

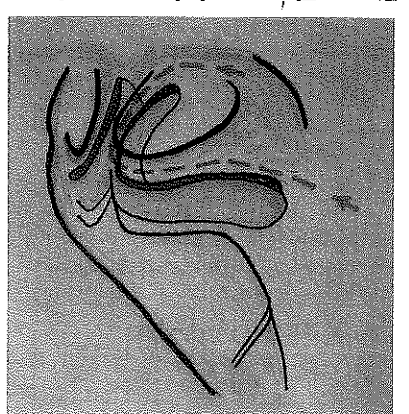


Fig. 1. The extended paramedian incision starts laterally to the foot of the medial crus and continues along the margin of the naris until the extremity of the lateral crus.

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The aim to obtain ever-more satisfactory results by simplifying the surgical procedure led us to use the parathinal incision associated with the septal removal technique, and replacement in patients with a significant nasal deviation. Even if the open rhinoplasty approach allows one to obtain better visualization, primarily of the nasal vault, the col-lumellar incision may leave an unsatisfactory residual scar. For this reason we employed a parathinal approach<sup>7</sup> that—granting better visualization in comparison with the traditional approach—allows one to obtain optimal results without visible external scars, and to obtain greater patient satisfaction.

Of the eight patients treated with the parathinal approach, five had temporary tip edema, which resolved spontaneously within 3 months. No patient required another surgical procedure.

During a 4-year period I operated on 200 cases of breast hypertrophy and ptosis through the axillary route—a personal technique.<sup>1-3</sup> A satisfactory result was obtained in 92.5% of the patients. Complications included five keloids, five hypertrophic scars with seroma, three hematomas with minor dehiscence, and two 15-day episodes of hypersensitivity of the arm.

During the past 26 years of surgical practice I have participated in 500 mammary reduction surgeries after learning various techniques during residency, such as the Pitanguy<sup>4</sup> and the McKissock techniques.<sup>5</sup> In 1984 I developed a personal technique—periareolar reduction mammaplasty<sup>6</sup>—and performed 1,000 procedures with it from 1984 to 1993. Over the years, I have concluded that it is possible to reduce the breast through the axilla, avoiding any scars on the breast (Fig).

Nowadays patients are very aware of the appearance of their breasts, and want them to be beautiful and shapely. They also want to know where the scar will be located and how it will appear. It is important that surgeons offer their patients a

**Axillary Reduction Mammaplasty**

1 King ED, Ashley FL. The connection of internally and externally deviated noses. *Plast Reconstr Surg* 1952;10:116-120

2 Villar-Sancho B. Rhinoseptoplasty. *Aesthetic Plast Surg* 1984;8(2):61-65

3 Gubish W. The extracorporeal septum plasty: a technique to correct difficult nasal deformities. *Plast Reconstr Surg* 1995;95:672-675

4 Rees TD. Surgical connection of the severely deviated nose by extramucosal excision of the osteocartilaginous septum and replacement as a free graft. *Plast Reconstr Surg* 1986;78:320

5 Kethi A. Über die Korrekturoperationen der nasendeformitäten. *I die hockerbabtragung. Chirurgie* 1929;1:1103

6 Holmstrom H, Luzzi F. Open rhinoplasty without transcolumellar incision. *Plast Reconstr Surg* 1996;97:321-326

7 D'Andrea F, Brongo S, Ferraro G. Riparamarginale. *Riv Ital Chir Plast* 1998;3:1, 7

**References**