Septal reconstruction in nasal septum surgery with a composite-sandwich technique*

Antonino Savoca, Franco Brandimarte, Sergio Molina, Lanfranco Perazzitti

ENT Department, Hospital "S. Liberatore", Atri, Teramo, Italy

SUMMARY *The authors describe a technique to reconstruct the medial and posterior portions of the nasal septum during surgical correction. This technique uses a "composite sandwich" made of two thin strips of Spongostan®-containing autologous crushed bone and cartilage. Thirty patients have been operated using this technique with satisfying results.*

Keywords: septal reconstruction, Spongostan®

INTRODUCTION

We have developed a method to easily reconstruct the medial and posterior portions of the septum during surgical correction. With small crushed osteocartilaginous fragments, reconstruction may be difficult and lead to overlap or displacement of the fragments. In these cases thickening of the septum with consequent reduction of nasal space may occur, and therefore we have developed a "composite-sandwich" technique.

MATERIAL AND METHODS

The "composite sandwich" consists of two Spongostan® strips containing crushed autologous bone and cartilage that are put into mucoperichondral and mucoperiosteal flaps. It is easy to do, easy to insert, avoids misplacement or overlap of the crushed fragments, and in addition facilitates the re-establishment of a solid structure (formed by the complex of mucoperichondrium/cartilage and mucoperiosteum/bone) in their insertion areas, respecting the original and physiological position of the septum.

Preparation of the "composite sandwich"

The first step is to put into the crusher one Spongostan® strip with a thickness of approximately 5 mm. We crush it and obtain a strip with a thickness of 0.2-0.3 mm, a width of 15 mm, and a length of approximately 55 mm. (We have to prepare at least two strips.) Then, the osteocartilaginous septum fragments are crushed. Next, the first Spongostan® strip is placed in the crusher, the crushed bone and cartilage fragments are placed on top of it (bone in the back side and cartilage in the front side), and this is covered with another Spongostan® strip; again, this sandwich is crushed to get a total thickness of approximately 1.5 mm. Now, the "composite sandwich" is ready to be inserted.

Insertion of the "composite sandwich"

Firstly, both nasal fossae are packed with Lyofoam® tampons, then a Cottle's long nasal speculum is put between the mucoperichondral and mucoperiosteal flaps and the "composite sandwich" is inserted betwwen the middle and posterior portions of the septum. Support of the anterior portion of the septum (dorsum and columella) is always guaranteed by the quadrangular cartilage, that can be corrected *in situ* or, when necessary, *extra situ* with removal and re-insertion method.

Whenever necessary (due to the case or the restoration), the sandwich can be properly moulded with scissors or, even, two sandwiches can be inserted (one in the top and another in the lower part), if wide demolition of septal structure has been performed (Figure 1).

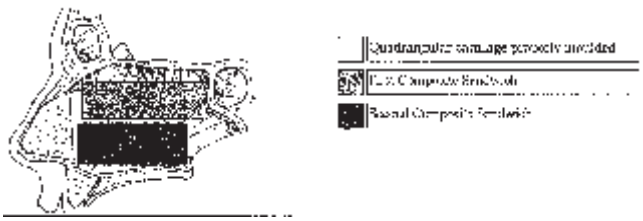

Figure 1. Insertion of the quadrangular cartilage and "composite sandwiches" in the nasal cavity.

With this technique we have operated 30 patients (age: 18-65 years; 19 males and 11 females) with serious nasal deviation. All patients received antibiotics for seven days in the post-operative period; we also checked respiratory nasal function before and after surgery by anterior rhinomanometry, and we now have a 36-month follow-up period.

* Received for publication October 11, 1996; accepted October 21, 1996

RESULTS

No patients had infections, rejection or nasal perforation. twenty-six patients demonstrated a clearly improved breathing through both nasal fossae, confirmed by anterior rhinomanometry, and although 4 patients clearly improved in only one of the nasal fossae, they nevertheless said to be satisfied with the result.

CONCLUSIONS

Partial reconstruction of the middle and posterior portions of the septum with the "composite-sandwich" technique is easy to do, free of risk, and avoids possible misplacement or overlap of the fragments.

REFERENCES

1. Bing J (1947) Experimental observations on the use of a Danish gelatin sponge preparation ("Spongostan") as an absorbable haemostatic agent. Acta Pharmacol 3: 364-372.
2. Cottle MH (1960) Surgical correction of septal deformities. Ann Rhinol Soc 7: 14.
3. Huizing EH (1974) Implantation and transplantation in reconstructive nasal surgery. Rhinology 12: 106.
4. Masing H, Leman W, Stadler J (1978) Ueber Sekundaroperationen nach submukoser Septumresektion. Laringol Rhinol 57: 931.
5. Sulsenti G (1972) Chirurgia Funzionale ed Estetica del Naso. Arsitalia, Ozano Emilia.
6. Sulsenti G (1978) Lezioni di chirurgin funzionale del setto e della piramide nasale. II Corso Internazionale, Bologna.

Antonio Savoca, MD
ENT Department
Hospital "S. Liberatore"
I-64032 Atri
Teramo
Italy

ANNOUNCEMENT/SOCIETY NEWS