

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

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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 between 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).

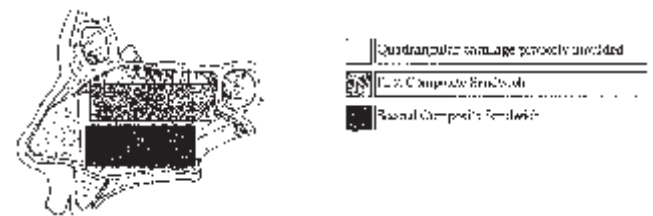


Figure 1. Insertion of the quadrangular cartilage and "composite sandwiches" in the nasal cavity.

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.

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.

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