Synthetic, dissolving plates ease repairs of nasal septum defects

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Attaching cartilage to plates made of the resorbable material polydioxanone appears to facilitate corrective surgery on the nasal septum, the thin cartilage separating the two airways, according to a report in the January/February issue of *Archives of Facial Plastic Surgery*.

Conventional septoplasty, or surgery to straighten a deviated septum, is not always possible because the surgical manipulations involved weaken the septal cartilage, according to background information in the article. "For decades, the inner nose remained untouched in nasal septal surgery because of these problems, and plastic surgeons attempted to correct only the nasal septum regions visible from the outside," the authors write. "Only in the past 40 years have surgical innovations allowed correction of cosmetic and functional deformities in a single session."

However, these procedures are sometimes ineffective in complex cases; it is difficult to strengthen the cartilage enough to support the structure of the nose without compromising cosmetic or functional concerns. To resolve these issues, Miriam Boenisch, M.D., Ph.D., then of District Hospital Steyr, Steyr, Austria, and now of Medicent Linz, Linz, Austria, and Gilbert J. Nolst Trenité, M.D., Ph.D., of the Academic Medical Center of the University of Amsterdam, report on the use of resorbable polydioxanone plates during septoplasty. Cartilage is removed from the septum and sutured to a polydioxanone plate cut to the same size. This combined graft is then re-implanted.

The procedure was performed on 396 patients beginning in 1996. Results were evaluated by patient report, photographs and measurements of nasal function at follow-up examinations periodically after surgery (patients were followed for an average of 12 months and a maximum of 10 years). No immediate complications such as bleeding, inflammatory reactions or tissue death occurred, nor were there long-term complications such as perforation or thickening of the septum or rejection of the implant.

A straight nasal septum was achieved in 369 patients (93.2 percent), and the same number reported improvement of the nasal airway. Two months after surgery, nasal function testing showed improved nasal flow in 324 patients (81.8 percent).

Eighteen patients (4.5 percent) required revision surgery to correct redeviation or other slight deformities. In eight (2 percent), the septum was displaced again but did not cause functional problems or the patients did not want revision surgery.

"Surgical correction of a deviated nasal septum is one of the most frequently performed surgical procedures," the authors write. Of an average of 1.2 cases per 1,000 North American and European individuals, about 90 percent of the surgical procedures are routine. The other 10 percent require complex correction. "The use of resorbable polydioxanone plate facilitates this surgical technique."

"To date, we have encountered no short- or long-term complications as a consequence of the use of polydioxanone plate," they conclude. "The use of polydioxanone plate during septal surgery facilitates external septoplasty, corrects several combined nasal deformities such as post-traumatic and iatrogenic [medically induced] irregularities and avoids postoperative saddle nose deformity, without risk to the patient."

More information: Arch Facial Plast Surg. 2010;12[1]:4-10