

A novel wedge technique to correct the curved deviation of the cartilaginous nasal septum



Ji-Eun Lee^a, Hahn Jin Jung^b, Munyoung Chang^b, Hong Ryul Jin^{b,*}

^a Department of Otorhinolaryngology-Head and Neck Surgery, Chosun University Hospital, Gwangju, Republic of Korea

^b Department of Otorhinolaryngology-Head and Neck Surgery, Seoul National University Boramae Medical Center, Seoul, Republic of Korea

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ABSTRACT

Objective: To introduce a novel wedge technique in endonasal septoplasty to correct the curved deviation of the cartilaginous septum and describe the surgical procedure and results.

Methods: A retrospective analysis was performed on 17 patients who had septoplasty using the wedge technique to correct the curved deviation of their cartilaginous septum. A 2–2.5-cm-long wedge made of either septal cartilage or ethmoid/vomer bone was inserted through an incision located 1.5–2 cm caudal to the bony–cartilaginous junction near the dorsum. Materials used for the wedge, objective evaluation of the surgical results, subjective symptom improvement and surgical complications were investigated.

Results: The degree of deviation was moderate to severe in all patients. Bony septum was used as the wedge material in 9 patients and septal cartilage in 8 patients. Among 17 patients, 15 had a completely straight septum while 2 had a minimal curvature remaining. Subjective symptoms of nasal obstruction evaluated by the Visual Analog Scale score and Nasal Obstructive Symptom Evaluation scale improved in all patients. In acoustic rhinometry, minimal cross-sectional area and nasal volume change showed some improvement without statistical significance. There were no major complications including saddle nose and revision surgery.

Conclusion: Our novel wedge technique can be an effective and safe technique to straighten the curved deviations of the cartilaginous septum in selected patients.

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1. Introduction

Generalized concavity/convexity of the cartilaginous septum is the most frequent type of septal deviation. A conventional approach to correct the curvature includes separation of the bone and cartilage junction and thus releasing the different vectors of force involved. Horizontal and vertical sleeve resections of the excess cartilage are typically followed. After releasing all these deforming forces, a variety of techniques have been proposed to correct the remaining inherent curvature of the cartilaginous septum: cross-hatching incisions, anchoring sutures to the anterior nasal spine, swing door technique, cut-and-suture technique and septal batten graft [1–6]. However, these conventional and new septoplasty methods have their own limitations and often prove unsatisfactory in obtaining a straight septum. In many cases, the cartilaginous septum cannot be fully corrected

without jeopardizing the keystone area or separating the septum from the anterior nasal spine. It is also often difficult to create a sufficiently straight septum intra-operatively and obtain long-lasting or permanent results. The septum is sometimes observed to re-deviate, even to the point of curving toward the opposite direction shortly after surgery.

The authors designed a new, simple, yet effective wedge technique that is aimed toward the correction of these generalized curvatures of the cartilaginous septum without the consequent risks to the keystone area and separating the connection between the anterior nasal spine and the septum.

2. Methods

A retrospective review of the medical records of 17 consecutive patients who underwent endonasal septoplasty using the wedge technique from October 2007 through April 2012 at the Otolaryngology Department, Seoul National University Boramae Medical Center was done. During the same period, 650 septoplasties have been performed using techniques other than wedge techniques. Indications for the wedge techniques were as follows: (1) no or mild deviations in the upper bony septum; (2) remaining convex/concave deformity of the cartilaginous septum itself after

* Corresponding author at: Department of Otorhinolaryngology-Head and Neck Surgery, Seoul National University Boramae Medical Center, 425 Shindaeabang-2-dong, Dongjak-gu, Seoul 156-707, Republic of Korea. Tel.: +82 2 870 2441; fax: +82 2 870 3866.

E-mail addresses: doctorjin@daum.net, hrjin@snu.ac.kr (H.R. Jin).

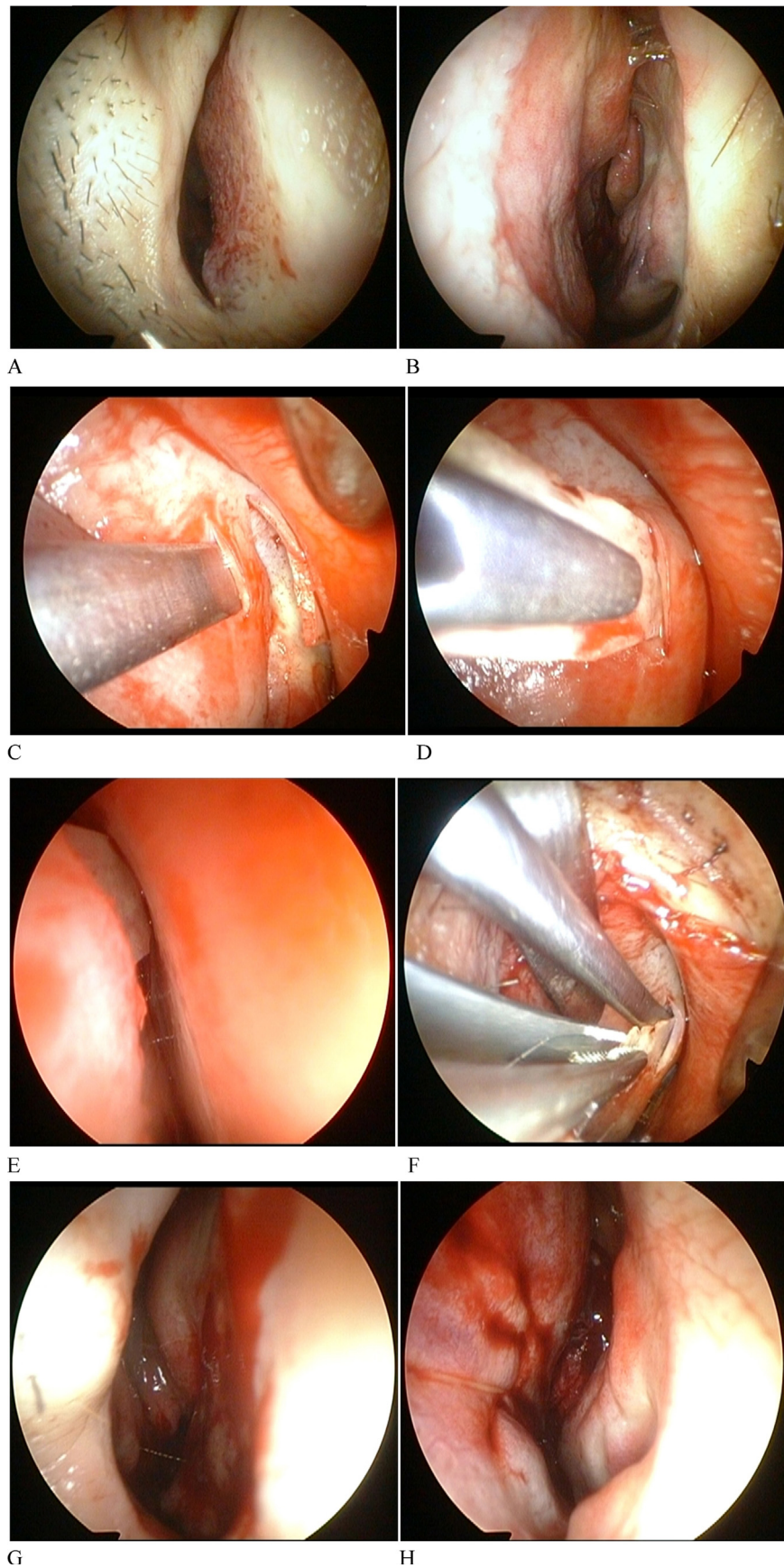


Fig. 1. Endoscopic views of the wedge technique. (A and B) Preoperative endoscopic views of the septum. The septum is moderately convex to the right side. (C) The septum is approached through the concave side after hemitransfixion incision. (D) After removal of horizontal and vertical cartilaginous strips, a vertical incision is made at a point 1.5 cm caudal from the junction. (E) Contralateral flap is elevated through the incision. (F) A 2-cm wedge made with septal cartilage is inserted through the incision, passes the contralateral side, and is placed back on the ipsilateral side of the bony septum. (G and H) Postoperative endoscopic views show a straightened cartilaginous septum.

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