



Brazilian Journal of
OTORHINOLARYNGOLOGY

www.bjorl.org



ORIGINAL ARTICLE

Effectiveness of caudal septal extension graft application in endonasal septoplasty[☆]

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Received 8 October 2015; accepted 18 January 2016

KEYWORDS

Nasal septum;
Nasal cartilage;
Nasal obstruction;
Intranasal surgery;
Grafting

Abstract

Introduction: Septal deviation is a common disease seen in daily otorhinolaryngology practice and septoplasty is a commonly performed surgical procedure. Caudal septum deviation is also a challenging pathology for ear, nose, and throat specialists. Many techniques are defined for caudal septal deviation.

Objective: To evaluate the effectiveness of caudal septal extension graft (CSEG) application in patients who underwent endonasal septoplasty for a short and deviated nasal septum.

Methods: Forty patients with nasal septal deviation, short nasal septum, and weak nasal tip support who underwent endonasal septoplasty with or without CSEG placement between August 2012 and June 2013 were enrolled in this study. Twenty patients underwent endonasal septoplasty with CSEG placement. The rest of the group, who rejected auricular or costal cartilage harvest for CSEG placement, underwent only endonasal septoplasty without any additional intervention. Using the Nasal Obstruction Symptom Evaluation (NOSE) and Rhinoplasty Outcome Evaluation (ROE) questionnaires, pre- and post-operative acoustic rhinometer measurements were evaluated to assess the effect of CSEG placement on nasal obstruction.

Results: In the control group, preoperative and postoperative minimal cross-sectional areas (MCA1) were $0.44 \pm 0.10 \text{ cm}^2$ and $0.60 \pm 0.11 \text{ cm}^2$, respectively ($p < 0.001$). In the study group, pre- and postoperative MCA1 values were $0.45 \pm 0.16 \text{ cm}^2$ and $0.67 \pm 0.16 \text{ cm}^2$, respectively ($p < 0.01$). In the control group, the nasal cavity volume (VOL1) value was $1.71 \pm 0.21 \text{ mL}$ preoperatively and $1.94 \pm 0.17 \text{ mL}$ postoperatively ($p < 0.001$). In the study group, pre- and post-operative VOL1s were $1.72 \pm 0.15 \text{ mL}$ and $1.97 \pm 0.12 \text{ mL}$, respectively ($p < 0.001$). Statistical analysis of postoperative MCA1 and VOL1 values in the study and the control groups could

[☆] Please cite this article as: Karadavut Y, Akyıldız I, Karadaş H, Dinç AE, Tulacı G, Tastan E. Effectiveness of caudal septal extension graft application in endonasal septoplasty. Braz J Otorhinolaryngol. 2016. <http://dx.doi.org/10.1016/j.bjorl.2016.01.014>

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<http://dx.doi.org/10.1016/j.bjorl.2016.01.014>

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PALAVRAS-CHAVE

Septo nasal;
 Cartilagem nasal;
 Obstrução nasal;
 Cirurgia intranasal;
 Aplicação de enxerto

not detect any significant intergroup difference ($p=0.093$ and 0.432 , respectively). In the study group, mean nasolabial angles were $78.15 \pm 4.26^\circ$ and $90.70 \pm 2.38^\circ$, respectively ($p < 0.001$). *Conclusion:* Endonasal septoplasty with CESG placement is an effective surgical procedure with minimal complication rate for subjects who have a deviated, short nasal septum and weak nasal tip support.

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Eficácia da aplicação de enxerto de extensão septal caudal em septoplastia endonasal**Resumo**

Introdução: Desvio septal é doença comum no cotidiano da prática otorrinolaringológica, e a septoplastia é procedimento cirúrgico comumente realizado. Desvio caudal do septo nasal é também uma condição desafiadora para os otorrinolaringologistas. São muitas as técnicas definidas para desvio caudal do septo nasal.

Objetivo: Avaliar a eficácia da aplicação de enxerto de extensão septal caudal (EESC) em pacientes que passaram por septoplastia endonasal devido a septo nasal curto e com desvio.

Método: Foram recrutados para o estudo, 40 pacientes com desvio de septo nasal, septo nasal curto e fraca sustentação da ponta do nariz, tratados com septoplastia endonasal com ou sem a aplicação de EESC, entre agosto de 2012 e junho de 2013. Ao todo, 20 pacientes foram tratados com septoplastia endonasal com aplicação de EESC. O restante do grupo, que rejeitou coleta de cartilagem auricular ou costal para a aplicação de EESC, foi tratado apenas com septoplastia endonasal, sem qualquer outra intervenção. Com a aplicação dos questionários NOSE (*Nasal Obstruction Symptom Evaluation, Avaliação dos Sintomas de Obstrução Nasal*) e ROE (*Rhinoplasty Outcome Evaluation, Avaliação dos Desfechos da Rinoplastia*), as mensurações pré e pós-operatórias com o rinômetro acústico foram obtidas com o objetivo de avaliar o efeito da aplicação de EESC na obstrução nasal.

Resultados: No grupo controle, as áreas de secção transversal mínima (ASTM1) antes e depois da operação foram $0,44 \pm 0,10 \text{ cm}^2$ e $0,60 \pm 0,11 \text{ cm}^2$, respectivamente ($p < 0,001$). No grupo de estudo, os valores antes e depois da operação para ASTM1 foram $0,45 \pm 0,16 \text{ cm}^2$ e $0,67 \pm 0,16 \text{ cm}^2$, respectivamente ($p < 0,01$). No grupo controle, o valor para os volumes da cavidade nasal (VOL1) foi $1,71 \pm 0,21 \text{ mL}$ no pré-operatório e $1,94 \pm 0,17 \text{ mL}$ no pós-operatório ($p < 0,001$). No grupo de estudo, os VOL1 antes e depois da operação foram $1,72 \pm 0,15 \text{ mL}$ e $1,97 \pm 0,12 \text{ mL}$, respectivamente ($p < 0,001$). A análise estatística dos valores pós-operatórios para ASTM1 e VOL1 nos grupos de estudo e controle não permitiu a detecção de qualquer diferença intergrupos ($p=0,093$ e $0,432$, respectivamente). No grupo de estudo e no grupo controle, os ângulos nasolabiais médios foram $78,15 \pm 4,26^\circ$ e $90,70 \pm 2,38^\circ$, respectivamente ($p < 0,001$).

Conclusão: A septoplastia endonasal com aplicação de EESC é um procedimento cirúrgico efetivo, com mínimo percentual de complicações para pacientes que se apresentam com septo nasal curto e com desvio e com fraca sustentação da ponta do nariz.

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Introduction

Septal deviation of the nose is one of the most common disorders seen in daily otorhinolaryngology practice, and septoplasty is a frequently performed surgical procedure by ear, nose, and throat specialists.¹ Despite the fact that many surgical methods have been defined, such as morselization, cross-hatching incision, partial thickness incision, swing-door flap, and cut-suture technique, no single surgical procedure is successfully applicable in all conditions.^{1,2}

Short septal cartilage and weak nasal tip support are frequently seen nasal pathologies in patients with nasal obstruction. Conventional septoplasty techniques are not effective as a result of cartilage memory, and open techniques are invasive and time consuming. Since this is a challenging condition and conventional techniques have been unsatisfactory, efforts have been focused on developing novel surgical techniques to overcome this problem. As one of these techniques, caudal septal extension graft (CSEG) placement to support the tip of the nose was

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