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ORIGINAL ARTICLE

The effect of different nasal irrigation solutions following septoplasty and concha radiofrequency: a prospective randomized study[☆]

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KEYWORDS

Septoplasty;
Nasal irrigation;
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Crusting;
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Abstract

Introduction: Nasal irrigation solutions are widely used following endonasal surgery. These irrigation solutions remove infective debris and crusts, reducing the probability of synechia formation, and accelerate mucosal healing.

Objective: The aim of the present study was to compare the effects of nasal irrigation solutions with different contents following septoplasty and concha radiofrequency.

Methods: The present study was a prospective, randomized, controlled simple blind study of 120 patients who underwent septoplasty and bilateral concha radiofrequency. Patients were divided into four groups according to the nasal irrigation solution used: tap water, buffered isotonic saline, saline with Xylitol, and hypertonic sea water. Patients were examined on the 7th and 15th postoperative days. A saccharine test was applied to determine mucociliary activity preoperatively and on the 7th and 15th postoperative days. Patients were asked about drying and obstruction using a 10 cm Visual Analog Scale (VAS). In addition, patients were examined to determine the crusting score.

Results: There was no significant difference found in the preoperative and 7th and 15th postoperative days' Mucociliary Clearance Times (MCT) among the four groups. The crusting score was found to be significantly lower in the hypertonic sea water group ($p < 0.001$). Drying and obstruction on the 7th and 15th postoperative days were found to be significantly more comfortable in the hypertonic sea water group ($p < 0.001$).

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PALAVRAS-CHAVE

Septoplastia;
Irrigação nasal;
Clearance mucociliar;
Crostras;
Obstrução

Conclusion: Hypertonic sea water is the recommended irrigation solution, as it is associated with less crusting, drying, and obstruction in the nose for the postoperative period following septoplasty and concha radiofrequency.

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Efeito de diferentes soluções para irrigação nasal após septoplastia e radiofrequência das conchas nasais: estudo prospectivo e randomizado

Resumo

Introdução: Soluções para irrigação nasal são amplamente utilizadas após cirurgias endonasais. Essas soluções removem os resíduos e crostas, reduzindo a probabilidade de formação de sinéquias e acelerando a cicatrização da mucosa.

Objetivo: O objetivo do presente estudo foi comparar os efeitos das soluções para irrigação nasal com diferentes conteúdos após septoplastia e turbinoplastia com radiofrequência.

Método: O presente estudo foi um estudo cego simples, randomizado, controlado e prospectivo de 120 pacientes submetidos à septoplastia e turbinoplastia bilateral com radiofrequência. Os pacientes foram divididos em quatro grupos de acordo com a solução nasal utilizada: água da torneira, solução salina isotônica tamponada, solução salina com xilitol e água do mar hipertônica. Os pacientes foram examinados no 7° e 15° dias do pós-operatório. O teste de sacarina foi utilizado para determinar a atividade mucociliar pré-operatória e no 7° e 15° dias do pós-operatório. Os pacientes foram questionados sobre a sensação de secura e obstrução nasais utilizando uma Escala Visual Analógica de 10 cm (EVA). Além disso, os pacientes foram examinados para determinar o escore em relação à crostas.

Resultados: Não houve diferença significativa entre o pré-operatório e os 7° e 15° dias do pós-operatório dos tempos de clearance mucociliar (TCM) entre os quatro grupos. Verificou-se que o escore em relação a crostas foi significativamente menor no grupo utilizando água do mar hipertônica ($p < 0,001$). As sensações de secura e obstrução nasais no 7° e 15° dias do pós-operatório mostraram-se significativamente mais confortáveis no grupo água do mar hipertônica ($p < 0,001$).

Conclusão: A água de mar hipertônica é a solução de irrigação recomendada, pois está associada a menor incidência de crostas, secura e obstrução nasais no pós-operatório de cirurgia de septoplastia e das conchas nasais com radiofrequência.

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Introduction

Nasal irrigation solutions are widely used following endonasal surgery and are usually a part of rhinitis and sinusitis treatment. These irrigation solutions remove infective debris and crusts, reducing the probability of synechia formation, and they accelerate mucosal healing.¹ At the same time, they improve mucociliary clearance.²

Solutions with different contents are currently used for nasal irrigation. Isotonic saline solution has been the most preferred one for a long time³; however, more recently the use of hypertonic saline has increased. Studies show that hypertonic solutions reduce edema, improve mucociliary clearance, and relieve nasal breathing by affecting osmotic pressure.^{1,2,4} However, Homer et al.⁵ found that 3% hypertonic saline and isotonic saline solutions do not differ in their effects on mucociliary clearance. Furthermore, Suslu

et al.⁶ showed that hypertonic saline solutions are significantly more effective on mucociliary clearance than isotonic solutions, with improvement in nasal airway dimensions. However, the use of hypertonic solutions is restricted due to side effects including nasal irritation and burning sensation.²

This study compared the effects of four irrigation solutions on mucociliary clearance, nasal crusting, nasal dryness, and obstruction following septoplasty and bilateral concha radiofrequency. Many studies have been conducted on the effects of these solutions as used for treatment of rhinitis, sinusitis, and septoplasty; however, a search revealed no studies on their effects when used to treat septoplasty and concha radiofrequency. The current study used tap water, buffered isotonic saline, buffered isotonic saline with Xylitol, and hypertonic sea water for irrigation. This is the first study comparing tap water to other solutions, which is noteworthy, as tap water is an attractive option in developing countries.

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