



**SGORL PCF**

Sociedad Gallega de Otorrinolaringología  
y Patología Cervicofacial

**Artículo Original**

**NASAL PACKING AFTER SEPTOPLASTY:  
IS IT REALLY NECESSARY? PATIENT  
COMPLICATIONS AND PERCEPTION**

**TAMPONAMENTO NASAL APÓS  
SEPTOPLASTIA: SERÁ MESMO  
NECESSÁRIO? COMPLICAÇÕES E  
PERCEPÇÃO DOS DOENTES**

Mafalda Martins de Sousa<sup>1,2</sup>, Pedro Alexandre<sup>1,2</sup>,  
Margarida Santos<sup>1</sup>, Helena Silveira<sup>1,2</sup>

<sup>1</sup> Department of Otorhinolaryngology,  
Centro Hospitalar Universitário de São João,  
EPE, Oporto, Portugal

<sup>2</sup> Department of Surgery and Physiology,  
Faculty of Medicine of University of Oporto, Portugal

CONTACT OF THE CORRESPONDING AUTOR:  
MAFALDA MARTINS DE SOUSA  
ORCID: 0000-0002-1944-829X  
mafaldajmsousa@gmail.com  
+351916348230

Centro Hospitalar Universitário São João - Alameda Prof. Hernâni  
Monteiro, 4200-319, Porto, Portugal

**Fecha de envío: 15/11/2020**  
**Fecha de aceptación: 6/2/2021**

ISSN:  
2340-3438

Edita:  
Sociedad Gallega de Otorrinolaringología

Periodicidad:  
continuada.

Web:  
[www.sgorl.org/revista](http://www.sgorl.org/revista)

Correo electrónico:  
[actaorlgallega@gmail.com](mailto:actaorlgallega@gmail.com)

## Resumo

### Introdução

A septoplastia é uma das cirurgias mais frequentemente realizadas por Otorrinolaringologistas. Atualmente, não existe ainda um consenso quanto à necessidade de tamponamento nasal após a cirurgia. Historicamente, a utilização de tamponamento nasal tem sido proposta para minimizar complicações, contudo existem riscos e desvantagens inerentes à utilização de tamponamento nasal.

### Objetivo

Comparar os resultados de doentes com tamponamento nasal ou sutura transfixiante do septo após septoplastia. Avaliar a perceção do doente relativamente ao período pós-operatório.

### Métodos

Estudo ambispectivo dos doentes submetidos a septoplastia num Hospital Terciário. Todos os doentes foram questionados acerca das principais dificuldades no pós-operatório.

### Resultados

Foram incluídos 152 doentes no estudo. Os doentes foram tamponados com spongostan (49.4%) ou merocel (40.1%) e em 10.5% foi realizada sutura transfixiante do septo.

Não houve diferença estatisticamente significativa entre os três grupos quanto a ocorrência de complicações.

Constatou-se uma diferença significativa entre as queixas dos doentes e o tipo de tamponamento realizado ( $p=0.01$ ). Os doentes com sutura transfixiante do septo não apresentaram queixas no período pós-operatório.

### Conclusão

A utilização de tamponamento nasal após septoplastia não diminuiu o número de complicações após a cirurgia.

A septoplastia é uma cirurgia bem tolerada e as principais queixas dos doentes estão relacionadas com o tamponamento nasal. A sutura transfixiante do septo parece ser uma excelente alternativa aos métodos de tamponamento tradicionais.

## Palavras-chave

septoplastia; tamponamento nasal; sutura transfixiante do septo

## Abstract

### Introduction

Septoplasty is one of the most frequently performed rhinologic surgeries.

Nowadays, we still debate over the need of nasal packing after septoplasty.

Historically, the use of nasal packing has been proposed to minimize complications, however there are risks and disadvantages related to the use of nasal packing.

### Objectives

Compare the results of nasal packing and transseptal suture after septoplasty. Analyse patient perception of the postoperative period.

### Methods

Ambispective study of the patients that underwent septoplasty in a Tertiary Hospital. Patients were questioned about the main difficulties in the postoperative period.

### Results

This study included 152 patients. Spongostan packing was used 49.4% patients, merocel in 40.1% and 10.5% of the patients had transseptal suture. Regarding complications, there were no statistically significant differences between the three groups. Patient complaints differed according to the type of nasal packing ( $p=0.01$ ). Patients with transseptal suture had no complaints in the postoperative period.

### Conclusion

Nasal packing following septoplasty didn't reduce the number of complications after surgery.

Septoplasty is a well tolerated surgery and the main complaints of the patients are related to nasal packing. Transseptal suture seems to be an excellent alternative to the traditional methods of nasal packing.

## Keywords:

septoplasty; nasal packing; transseptal suture

## Introduction

Septoplasty is one of the most common surgeries performed by Ear Nose and Throat (ENT) doctors<sup>1,2,3</sup>.

Historically, the use of nasal packing has been proposed to minimize complications, such as bleeding, synechia, septal hematoma or recurrence of septal deviation. Several materials have been developed to prevent these complications, however there isn't a consensus about the need of nasal packing after septoplasty<sup>4,5</sup>. Besides that, there are risks and disadvantages regarding nasal packing, namely, discomfort, oral breathing, pain, sinusitis, infection, including toxic shock syndrome or foreign body reaction<sup>6,7</sup>. One of the main concerns of the patients regarding septoplasty is the discomfort with nasal packing and its removal<sup>3,8</sup>. Some authors advocate not using nasal packing because of the pain associated with nasal packing removal, however nasal packing is still commonly used at the end of the procedure<sup>9</sup>.

The critical step that reduces the risk of complications after surgery is minimizing the space between the septal layers<sup>6</sup>. In 1980, the transseptal suture technique was introduced as an alternative to nasal packing<sup>1,10</sup>. Recently, transseptal sutures have been increasingly used to prevent complications such as septal hematoma, close tears of septal mucosa and provide additional support for the cartilage<sup>5</sup>.

The purpose of this work is to compare the use of non-absorbable (merocel), absorbable nasal packing (spongostan) and transseptal suture in the patients that underwent septoplasty and to evaluate the patient's perception and complaints regarding the postoperative period.

## Methods

### Study Design

Ambispective study performed in a Tertiary Hospital. We reviewed the records of patients that underwent septoplasty between May and October 2019.

One month after their surgery, each patient was questioned over the phone about the main difficulty in the postoperative period and only the most notorious complaint of each patient was registered.

The exclusion criteria were: over 65 years old, systemic diseases (such as hypertension, cardiac insufficiency or coagulation disorders), concomitant endoscopic surgery and previous septoplasty.

All patients performed routine preoperative analysis.

Septoplasty was performed according to the Cottle's technique: hemitransfixion incision and resection of the anterior and posterior septal deviation through a subperichondrial plane.

All the patients also underwent turbinoplasty. Turbinoplasty was performed by reduction of the mucosa of the inferior border of the turbinate followed by cauterization with bipolar or by outfracture of the turbinate followed by cauterization with bipolar.

Amoxicillin for a week and paracetamol for pain were prescribed to all patients.

Merocel was removed 48 hours after surgery. All patients with nasal packing also had silastic septal splints that were removed one week after surgery. Transseptal suture was performed with 4-0 *Vicryl*® *rapid*. Transseptal sutures were used only by one surgeon, in all his patients.

### Variables

We collected demographic data- gender and age- follow-up time after surgery, type of nasal packing used, surgical technique performed, complications, complaints and difficulties after surgery.

### Statistical analysis

*Statistical Package for the Social Sciences*® (26.0, SPSS®) was used for statistical analysis.

The Kolmogorov–Smirnov test was performed to test for normality of the distribution.

Categorical variables were presented as frequency and percentage and continuous variables as mean (standard-deviation) or median (1<sup>st</sup> and 3<sup>rd</sup> quartile), depending on whether they had a normal distribution or not.

T student test was used for independent variables and Mann-Whitney U to evaluate differences between continuous variables.

Qui-square test and Fisher's exact test were used to compare categorical variables.

A  $p < 0.05$  was considered statistically significant.

## Results

We included 152 patients, of which 81 (53.3%) were male and 71 (46.7%) were female.

The average age was 37.27 years ( $\pm 13,41$ ) and median *follow-up* was 60 days (30-60), without statistically significant differences between genders ( $p=0.9$ ).

Spongostan was used in 75 patients (49.4%), merocel in 61 patients (40.1%) and transseptal suture was performed in 16 patients (10.5%).

In 77.6% of the patients the turbinoplasty technique used was reduction of the mucosa of the inferior border of the turbinate followed by cauterization with bipolar and in 22.4% was performed outfracture of the turbinate followed by cauterization (Table 1).

In the postoperative period, there was no statistically significant difference between the use of nasal packing or transseptal suture and the occurrence of epistaxis, septal hematoma, infection, septal perforation, synechia or residual septal deviation (Table 2).

There was a statistically significant difference between patient complaints and the type of nasal packing or transseptal suture ( $p=0.01$ ).

When questioned about the main difficulties of the postoperative period, 41 % of the patients with merocel packing referred that the main difficulty was merocel removal, 31.1% complained of headache and localized pain until merocel removal and 27.9% had no complaints. Regarding patients with spongostan packing, 52% had no complaints and 48% noticed nasal obstruction until the silastic sheets were removed. Patients with transseptal suture didn't have any complaints regarding the postoperative period (Chart 1).

## Discussion

Nasal packing has been historically used after septoplasty to reduce the occurrence of bleeding, septal hematoma, to support the cartilage and prevent synechia formation<sup>1,11,12</sup>.

There are several materials available, from non-absorbable (e.g.: gaze, Merocel) to absorbable (e.g.: Nasopore, Spongostan, Surgicel). In this study, were used Merocel and Spongostan as packing materials<sup>13,14</sup>.

In our study, the use of nasal packing after septoplasty didn't decrease the number of complications after surgery. In fact, patients who had transseptal suture had no complications after surgery, however since they are the smallest group this could be the reason why this result wasn't statistically significant.

The occurrence of septal hematoma didn't differ between the different types of packing and transseptal suture. It is important to notice that the patients who had nasal packing also had silastic sheets and so it appears that the use of nasal packing and silastic sheets is similar to transseptal suture in preventing septal hematoma. This finding is supported by previous studies that showed that nasal packing had no additional benefits in the prevention of septal hematoma<sup>1,3,15-17,18</sup>.

In the literature, the rate of septal perforation ranges from 1.6 to 6.7%<sup>19</sup>. In our study, 1.97% of the patients had septal perforation, with no differences regarding the type of nasal packing used.

The main complication after surgery was residual septal deviation, in 5.26% of the cases. Of notice, a longer follow up could influence this result. This finding, if associated with nasal obstruction, may imply a new surgery but since none of the patients had complaints, a revision surgery wasn't necessary. Once again, there were no differences regarding nasal packing or transseptal suture.

Infection occurred in only two patients and solved with oral and topical antibiotic. There wasn't a significant difference between groups, a finding corroborated by previous studies<sup>17</sup>.

There were two cases of synechia formation, in patients who had spongostan packing, with no significant differences between groups. The use of silastic sheets facilitates the approximation and healing of the mucosa flap, in order to reduce the occurrence of septal perforation and hematoma and to prevent synechia formation. According to the literature, the risk of synechia formation is similar with nasal packing and transseptal suture<sup>17</sup>.

Therefore, the rate of complications after surgery doesn't appear to be influenced by different types of packing materials and patients who had nasal packing and silastic sheets seem to have similar results to those with transseptal suture.

Regarding the subjective evaluation of the postoperative period, patients with nonabsorbable nasal packing referred greater discomfort and pain. Patients with spongostan packing had complaints of nasal obstruction until the silastic sheets were removed, a fact that wasn't valued by patients with merocel. A possible explanation for the devaluation of nasal obstruction by the patients with nonabsorbable packing may be the notorious discomfort associated with merocel packing and the symptomatic relief after its removal, devaluing the remaining symptoms. Patients with transseptal suture had no complaints in the postoperative period.

This study has some limitations regarding its ambispective character, different surgeons and the different number of patients in each group.



## Conclusion

Nasal packing after septoplasty didn't decrease the number of complications after surgery.

Septoplasty is a well tolerated surgery and the main complaints of the patients are related to nasal packing. Therefore, routine use of nasal packing isn't necessary and should be considered individually. Transseptal suture technique appears to be a good alternative to traditional packing methods. Further studies will reinforce our results.

## Declaration of Conflict of Interest

We have no conflict of interest.

## References

1. Kim JS, Kwon SH. Is Nonabsorbable Nasal Packing After Septoplasty Essential? A Meta-analysis. *The Laryngoscope*. 2017; 127:1026-1031. DOI: 10.1002/lary.26436.
2. Cayonu M, Acar A, Horasanli E, Altundag A, Salihoglu M. Comparison of totally occlusive nasal pack, internal nasal splint, and transseptal suture technique after septoplasty in terms of immediate respiratory distress related to anesthesia and surgical complications. *Acta Otolaryngol*. 2014;134:390-394. DOI: 10.3109/00016489.2013.878476.
3. Naghibzadeh B, Peyvandi AA, Naghibzadeh G. Does post septoplasty nasal packing reduce complications? *Acta Med Iran*. 2011;49:9–12
4. Dubin MR, Pletcher SD. Postoperative Packing After Septoplasty: Is It Necessary?. *Otolaryngologic Clinics*. 2009; 2:279-285. DOI: 10.1016/j.otc.2009.01.015.
5. Kayahan B, Ozer S, Suslu AE, Ogretmenoglu O, Onerci M. The comparison of the quality of life and intranasal edema between the patients with or without nasal packing after septoplasty. *Eur Arch Oto-Rhino-Laryngology*. 2017;274(3):1551-1555. DOI: 10.1007/s00405-016-4403-9
6. Sainio S., Blomgren K., Lundberg M. Complications and number of follow-up visits after using septal stapler in septoplasty. *Rhinology*. 2019; 57:273-278. DOI: 10.4193/Rhin18.142. DOI: 10.4193/Rhin18.142.
7. Wadhera R, Zafar N, Gulati SP, Kalra V, Ghai A. Comparative study of intranasal septal splints and nasal packs in patients undergoing nasal septal surgery. *Ear Nose Throat J* 2014;93:396 - 408.
8. Yilmazer C, Sener M, Yilmaz I, Erkan AN, Cagici CA, Donmez A, Arslan G, Ozluoglu LN. Pre-emptive analgesia for removal of nasal packing: A double-blind placebo controlled study. *Auris Nasus Larynx*. 2007; 34(4):471-5. DOI: 10.1016/j.anl.2006.11.013
9. Acioğlu E, Edizer DT, Yiğit Ozgur, Onur F, Alkan Z. Nasal septal packing: which one? *Eur Arch Otorhinolaryngol*. 2012; 269(7):1777–1781. DOI: 10.1007/s00405-011-1842-1
10. Lee IN, Vukovic L. Hemostatic suture for septoplasty: how we do it. *J Otolaryngol*. 1988;17:54–56.
11. Lemmens W, Lemkens P. Septal suturing following nasal septoplasty, a valid alternative for nasal packing? *Acta Otorhinolaryngol Belg*. 2001;55: 215–22
12. Dalgic A, Is A, Dinc ME, Ulusoy S, Avinçsal MÖ, Kulekci M. The effects of nasal packing and transseptal suturing after septoplasty on olfactory function, patient comfort, and mucociliary clearance. *J Craniofac Surg*. 2016;27(5):e487-e490. DOI: 10.1097/SCS.0000000000002805
13. Wang J, Cai C, Wang S. Merocel versus Nasopore for nasal packing: a meta-analysis of randomized controlled trials. *PLoS One*. 2014;9: e93959. DOI: 10.1371/journal.pone.0093959
14. Iqbal IZ, Jones GH, Dawe N, Mamais C, et al. Intranasal packs and haemostatic agents for the management of adult epistaxis: systematic review. *J Laryngol Otol*. 2017;131(12):1065-1092. DOI: 10.1017/S0022215117002055
15. Quinn JG, Bonaparte JP, Kilty SJ. Postoperative management in the prevention of complications after septoplasty: a systematic review. *Laryngoscope* 2013;123:1328–1333. DOI: 10.1002/lary.23848.

16. Banglawala SM, Gill M, Sommer DD, Psaltis A, Schlosser R, Gupta M. Is nasal packing necessary after septoplasty? A meta-analysis. *Int Forum Allergy Rhinol.* 2013;3:418–424. DOI: 10.1002/alr.21110.
17. Certal V, Silva H, Santos T, Correia A, Carvalho C. Trans-septal suturing technique in septoplasty: a systematic review and meta-analysis. *Rhinology* 2012;50:236–245. DOI: 10.4193/Rhino12.051.
18. Cukurova I, Cetinkaya EA, Mercan GC, Demirhan E, Gumussoy M. Retrospective analysis of 697 septoplasty surgery cases: Packing versus trans-septal suturing method. *Acta Otorhinolaryngol Ital.* 2012;32(2):111-114.
19. Dąbrowska-Bień J, Skarżyński PH, Gwizdalska I, Łazęcka K, Skarżyński H. Complications in septoplasty based on a large group of 5639 patients. *Eur Arch Otorhinolaryngol.* 2018; 275(7): 1789–1794. DOI: 10.1007/s00405-018-4990-8.

## Tables

**Table 1:** Sample characterization

<b>Age</b> , mean (standard-deviation), years	37.27 (13.41)
<b>Gender</b>	
Female, number (%)	71 (46.7)
Male, number (%)	81 (53.3)
<b>Follow-up</b> , median (quartile), days	60 (30-60)
<b>Nasal packing</b>	
Merocel, number (%)	61 (40.1)
Spongostan, number (%)	75 (49.4)
Transseptal suture, number (%)	16 (10.5)
<b>Turbinoplasty</b>	
Reduction of the mucosa of the inferior border, number (%)	118 (77.6)
Outfracture, number (%)	34 (22.4)

**Table 2:** Complications after septoplasty according to different nasal packing or transseptal suture

Complication	Number (%)	P value
<b>Epistaxis (total)</b>	4 (2.63)	0.70
Merocel	1	
Spongostan	3	
Transseptal suture	0	
<b>Synechia (total)</b>	2 (1.32)	0.56
Merocel	0	
Spongostan	2	
Transseptal suture	0	
<b>Perforation (total)</b>	3 (1.97)	0.65
Merocel	2	
Spongostan	1	
Transseptal suture	0	
<b>Infection (total)</b>	2 (1.32)	0.56
Merocel	0	
Spongostan	2	
Transseptal suture	0	
<b>Hematoma (total)</b>	2 (1.32)	0.94
Merocel	1	
Spongostan	1	
Transseptal suture	0	
<b>Residual septal deviation (total)</b>	8 (5.26)	0.83
Merocel	5	
Spongostan	3	
Transseptal suture	0	

**Chart 1:** Patient complaints regarding the postoperative period