

# Pilot study comparing steroid-impregnated and non-steroid-impregnated absorbable nasal dressing following endoscopic sinus surgery

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## ABSTRACT

**Introduction:** Endoscopic sinus surgery (ESS) is the mainstay for treatment of chronic rhinosinusitis versus maximal medical therapy. We propose a more economical option, by using steroid-impregnated Gelfoam instead of Nasopore post ESS, as it is less expensive and has showed effectiveness in preventing post-operative bleeding.

**Materials and methods:** A randomised, double-blinded, placebo-controlled trial was carried out in eight patients with chronic rhinosinusitis or nasal polyposis who were planned for bilateral endoscopic sinus surgery. A Peri-operative Sinus Endoscopy (POSE) Score and Lund-Kennedy Endoscopic Score (LKES) were recorded. The use of hydrocortisone-impregnated Gelfoam dressing versus normal saline-impregnated Gelfoam dressing were compared. Scores were repeated post-operatively at one week, three weeks and three months interval.

**Results:** For LKES, at the end of three months, 50% of the patients had the same score difference, 37.5% had better results on the study side while 12.5% had better results on the control side. Meanwhile, for POSE Score, at the end of three months, 75% of the patients had better score difference on the study side while 12.5% had better results on the control side.

**Conclusion:** Gelfoam can be used as nasal packing material to deliver topical steroid after endoscopic sinus surgery. Steroid-impregnated nasal dressing after endoscopic sinus surgery may not provide better long-term outcome.

## KEY WORDS:

*Endoscopic sinus surgery, Rhinosinusitis, Steroid nasal dressing, Gelfoam*

## INTRODUCTION

Endoscopic sinus surgery (ESS) is considered the treatment of choice for chronic rhinosinusitis refractory to maximal medical therapy. Patient's symptoms and quality of life have been shown to improve after ESS.<sup>1,3</sup> The symptom that improved the most after endoscopic sinus surgery is usually nasal obstruction. Other symptoms such as facial pain, postnasal discharge, hyposmia and headache also improved to a lesser extent.<sup>3</sup>

However, post-operative complications such as adhesion, bleeding, scarring, infection, and oedema may compromise the outcome of the surgery.<sup>4,5</sup> Nasal dressing is commonly applied after ESS to prevent post-operative bleeding, decrease adhesion formation, prevent lateralisation of middle turbinate and subsequent obstruction of the sinus drainage pathway.<sup>6</sup> As non-absorbable nasal dressing has shown some complications such as bleeding and pain upon removal, septal perforation and foreign body granuloma formation, the ideal nasal dressing should be one that is absorbable, haemostatic and improves healing.<sup>6,7</sup> However, the optimal choice of nasal dressing following ESS, or whether nasal dressing are required at all, is still an area of ongoing research.

In order to achieve better outcome following ESS, some surgeons support the use of systemic steroids.<sup>8</sup> As topical steroids carry less systemic adverse effects, nasal dressing impregnated with topical steroid is better if the outcome is comparable. Recently, a randomised, double-blinded, controlled study has suggested that triamcinolone-impregnated nasal dressing using Nasopore® (Polyganics, Netherlands) after ESS provides a significant improvement in early post-operative healing in nasal cavity.<sup>9</sup> We hypothesised that similar results are reproducible with steroid impregnated in other absorbable nasal packing material. Gelfoam® (Pfizer, USA) is less expensive compared to Nasopore®. Literature has shown that Gelfoam® packing is effective in preventing post-operative bleeding with good sinonasal healing comparable to no packing after ESS, therefore Gelfoam® is chosen as the nasal dressing material for this study.<sup>10</sup>

## MATERIAL AND METHODOLOGY

Approval from University Malaya's Medical Ethics Committee (reference number 1003.3) was obtained prior to recruitment of subjects. A prospective, randomised, double-blinded, placebo-controlled trial was carried out in Department of Otorhinolaryngology, UMMC, Kuala Lumpur. The objective of the study was to assess the efficacy of steroid-impregnated absorbable intranasal dressing on mucosal healing and surgical outcome post endoscopic sinus surgery (ESS).

Eight patients were recruited into the study based upon the following criteria: Inclusion criteria: patients with chronic

*This article was accepted: 25 March 2018*

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