

# Efficacy of absorbable steroid-soaked nasal packing in FESS for chronic rhinosinusitis: a systematic review.

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## Introduction

Chronic rhinosinusitis (CRS), an inflammatory condition of the paranasal sinuses, often presents with nasal obstruction, mucopurulent rhinorrhea, impaired sense of smell and facial pain. In patients who are refractory to pharmacological management, functional endoscopic sinus surgery (FESS) has become an established and safe surgical option to restore the physiological drainage pathways of the sinuses, increasing the likelihood of successful medical management. However, the efficacy of FESS can be reduced by post-operative inflammation, polyposis recurrence and adhesions.

**Aim** – to review the current evidence for absorbable steroid-impregnated nasal packing following FESS for CRS.

**Methods** – We conducted a systematic review of the literature as per PRISMA guidelines. Ovid MEDLINE was searched using relevant keywords and expanded with corresponding MeSH terms. See Table 1 for inclusion and exclusion criteria. Articles were assessed for eligibility by two independent reviewers. All included articles were also evaluated for bias using the Cochrane Risk of Bias tool (4) by two independent reviewers.

## Identified Studies

**Eight studies** (all level Ib evidence) met criteria and were included in this review. No major biases were identified through the Cochrane Risk of Bias tool. Four studied the efficacy of Nasopore<sup>®</sup>, three studied bioabsorbable gels, and one studied bioabsorbable calcium alginate. Two studies included all patients with CRS, five included only CRSwNP and one included only CRSsNP. Of the eight studies, four involved the use of triamcinolone as the operative steroid, with the other studies involving budesonide, betamethasone furoate, mometasone furoate and dexamethasone. All included studies used validated objective scoring systems (Peri-Operative Sinus Endoscopy (POSE), Lund-Kennedy) and/or Visual Analogue Scale to evaluate efficacy. One study also recorded a postoperative subjective quality of life (QoL) score; Sino-Nasal Outcome Test (SNOT-22) and included a follow up period of at least eight weeks.

## Results

Seven out of eight studies demonstrated statistically significant improvements in endoscopic outcomes, albeit at differing timepoints, with the general consensus being the higher the dosage of steroid and the longer the length of treatment, the better the postoperative outcome. The one study that failed to find a significant difference in postoperative endoscopic outcomes utilised dexamethasone and only recruited CRSsNP patients, whereas the others recruited either only CRSwNP or both. The study that examined postoperative SNOT-22 failed to find a significant difference.

## Conclusion

Intraoperative placement of steroid-impregnated nasal packing appears to have **significant positive** effects on postoperative endoscopic outcomes in CRSwNP patients undergoing FESS. Increased doses and length of treatment appear to correlate with increased postoperative benefit.

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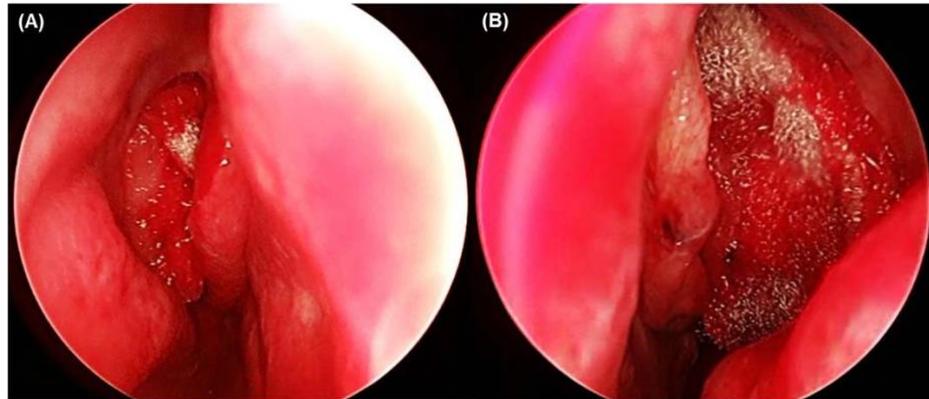


Figure 1. Nasal packing (Nasopore<sup>®</sup>) placed in middle meatus, soaked with (A) saline and (B) triamcinolone (9).

Table 1. Inclusion and Exclusion Criteria

Participants	All patients undergoing FESS for CRS
Intervention	<b>Inclusion:</b> Absorbable steroid-soaked nasal packing at time of operation (performed under general anaesthetic)
	<b>Exclusion:</b> any procedures performed in-office under local anaesthetic; steroid soaked nasal packing inserted after initial operation, nasal devices (steroid eluting or not) that are hollow with lumens (e.g. stents/spacers)
Comparator	Placebo (saline soaked nasal packing)
Outcomes	Improved post-operative outcomes (e.g. SNOT-22, POSE, KVSS II, Lund-Mackay, Lund-Kennedy, ostial size)
Study Design	Prospective, randomised placebo-controlled single or double blinded study
Language	English Only