



ORIGINAL RESEARCH PAPER

Otolaryngology

A COMPARATIVE STUDY ON EFFICACY OF STEROID LAVAGE IN RECURRENCE OF SINO NASAL POLYPOSIS

KEY WORDS: sinonasal outcome test, chronic rhinosinusitis, steroid lavage.

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ABSTRACT

BACKGROUND: Nasal polyposis is one of the most common chronic airway diseases. It is a non neoplastic inflammatory process of nasal mucosa that eventually leads to the outgrowth of abnormal masses from the mucosa of nasal cavity and paranasal sinuses.

OBJECTIVES:

1. To evaluate the effect of steroid lavage in preventing the recurrence of sinonasal polyposis after surgery.
2. To compare the recurrence of nasal polyps after surgery in patients with giving steroid lavage without giving steroid lavage.

METHODS AND METHODOLOGY: Patients presenting to OPD, ENT department were examined for any sino nasal polyps. A complete ENT examination was done to know about extension of polyps. 40 Patients who are diagnosed with sino-nasal polyps were included in this study after taking written informed consent considering inclusion and exclusion criteria. CT PNS was done pre operatively and patients were advised for surgery. After surgery, test patients were treated with sinonasal steroid lavage in post operative visits and control patients were not given. In post operative visits, symptoms and clinical findings were compared clinically and radiologically. The Sinonasal Outcomes Test (SNOT-22) and Lund-Kennedy endoscopy scores were checked before nasal irrigation, 1, 2, and 4 months after irrigation

RESULTS: The symptoms improved postoperatively after giving steroid lavage compared to control group, The mean SNOT-22 score improved from 30.8±10.4 before irrigation to 10.2±4.7 after 4 months of irrigation ('p' value <0.001). The endoscopy score also improved from 7.4±4.7 before irrigation to 2.2±2.7 after 4 months (P<0.001). ('p' value <0.001).

CONCLUSION: Nasal irrigation with steroid is an effective postoperative treatment for chronic sinonasal polyps, which recurs frequently, reducing the oral steroid intake post operatively,

INTRODUCTION

Nasal polyposis is one of the most common chronic airway diseases. It is a non neoplastic inflammatory process of nasal mucosa that eventually leads to the outgrowth of abnormal masses from the mucosa of nasal cavity and paranasal sinuses. Chronic rhinosinusitis (CRS) with nasal polyp is a common inflammatory condition of the nasal mucosa carrying significant morbidity and detriment to quality of life (QOL). Many CRS patients with nasal polyps require surgery¹. Along with the development of new equipment and technology, the resolution of the endoscope has increased resulting in a decrease in recurrence of the disease. Unfortunately, even after surgery the patients with asthma are often difficult to manage because of the high recurrence rate and worse clinical course. The current mainstay of medical therapy for CRS with asthma after surgery is saline irrigation, topical or systemic steroid. In severe cases of recurrence, revision surgery may be required. Most cases of CRS with nasal polyps recover after ESS but when accompanied by asthma the disease tends to worsen repetitively or recur often. In such cases, constant management after surgical treatment is necessary^{2,3}.

OBJECTIVES

- 1-To evaluate the effect of steroid lavage in preventing the recurrence of sinonasal polyposis after surgery.
- 2-To compare the recurrence of nasal polyps after surgery in patients with giving steroid lavage without giving steroid lavage

TYPE OF STUDY

Hospital based comparative study on the patients who underwent surgery for sinonasal polyps

Study Population: In-patients of ENT department, PESIMSR, Kuppam, Andhra Pradesh

INCLUSION CRITERIA:

1. Patients who underwent surgery for sinonasal polyps of either sex in the age group 20- 50 yrs.

EXCLUSION CRITERIA:

- Patients having history of hypertension, diabetes mellitus

METHODOLOGY

The study was conducted during the period from September 2018 to December 2018. A total of 40 patients were included in the study: 20 in study group and 20 in control group. CT PNS screening was done pre operatively and patients were advised for surgery. After surgery, test patients were treated with sinonasal steroid lavage in post operative visits and control patients were given saline wash. Nasal irrigation with normal saline was carried out prior to the budesonide irrigation. Then, one respule of 0.5 mg/2 mL commercially available generic budesonide respules was mixed with 250 mL normal saline. Half of the solution was used for each nasal cavity. At the end the patient gargled with regular water to prevent irritation of the oral cavity mucosa. Irrigation was done once a week for 4 months regularly. During budesonide nasal irrigation, we didn't use any other medication for CRS treatment. In post operative visits, symptoms and clinical findings were compared clinically and radiologically. The Sinonasal Outcomes Test (SNOT-22) and Lund-Kennedy endoscopy scores were checked before nasal irrigation, and 1, 2, and 4 months after irrigation

DATA ANALYSIS AND STATISTICAL METHOD:

STATA version14.0 is used for calculation. Paired't' test is applied for deriving values.

RESULTS AND DISCUSSION

Both subjective and objective outcome measures were used. The primary outcome measure was a change in QOL based on the 22-item Sinonasal Outcomes Test (SNOT-22). The secondary outcome was a change in Lund-Kennedy endoscopy (LK) score. To minimize bias, a single physician measured the scores. A baseline study was carried out before the nasal budesonide irrigation. The total period of budesonide nasal irrigation was 4 months. The subjects were 30 males and 10 females. Mean age was 39.9±3.3 years.

Table .1 Snot -22 Score Pre And Post Operatively

	PRE OP	POST OP after steroid lavage	P VALUE
SCORE- SNOT22	30.8±10.4	10.2±4.7	<0.001

The mean SNOT-22 score improved from 30.8±10.4 before irrigation to 10.2±4.7 after 4 months of irrigation ('p' value <0.001).

Table.2 Lund Kennedy Score Pre And Post Operatively

	PRE OP	POST OP after steroid lavage	P VALUE
Lund kennedy endoscopy score	7.4±4.7	2.2±2.7	<0.001

The endoscopy score also improved from 7.4±4.7 before irrigation to 2.2±2.7 after 4 months.

According to this study, budesonide nasal irrigation in patients was able to reduce the repeated use of oral steroid post operatively.

Nasal irrigation with budesonide during post-sinus surgery period is essential especially for long-term treatment of recurrent CRS, to permit exposure of the drug to the mucosa.

Surgical therapy is reserved for cases refractory to medical treatment. No single surgical technique has proved to be entirely curative and patients often undergo repeat procedures despite also receiving long-term medical therapy. Recurrence is common with severe disease recurring in around 5%–10% patients 4.

Joe SA et al in their study A systematic review of the use of intranasal steroids in the treatment of chronic rhinosinusitis 5concluded that Intranasal steroids are beneficial in the treatment of chronic rhinosinusitis with sinonasal polyps.

Figure-1- snot-22 score

	No Problem	Very Mild Problem	Mild or Slight Problem	Moderate Problem	Severe Problem	Problem as bad as it can be	Most important items
1. Need to blow nose	0	1	2	3	4	5	
2. Sneezing	0	1	2	3	4	5	
3. Runny nose	0	1	2	3	4	5	
4. Nasal obstruction	0	1	2	3	4	5	
5. Loss of smell or taste	0	1	2	3	4	5	
6. Cough	0	1	2	3	4	5	
7. Post-nasal discharge	0	1	2	3	4	5	
8. Thick nasal discharge	0	1	2	3	4	5	
9. Ear fullness	0	1	2	3	4	5	
10. Dizziness	0	1	2	3	4	5	
11. Ear pain	0	1	2	3	4	5	
12. Facial pain/pressure	0	1	2	3	4	5	
13. Difficulty falling asleep	0	1	2	3	4	5	
14. Waking up at night	0	1	2	3	4	5	
15. Lack of a good night's sleep	0	1	2	3	4	5	
16. Waking up tired	0	1	2	3	4	5	
17. Fatigue	0	1	2	3	4	5	
18. Reduced productivity	0	1	2	3	4	5	
19. Reduced concentration	0	1	2	3	4	5	
20. Frustrated/restless/irritable	0	1	2	3	4	5	
21. Sad	0	1	2	3	4	5	
22. Embarrassed	0	1	2	3	4	5	
TOTALS (each column):							

Patient-based outcome measures, such as the SNOT-22, are helpful tools for quantifying changes in symptoms and, can be used to predict extent of post-operative improvement.6

Figure-2 Endoscopic lund kennedy score⁷

Features	Right nasal cavity	Left nasal cavity
Polyp (0, 1, 2)		
Edema (0, 1, 2)		
Discharge (0, 1, 2)		
Total		

Notes:

Polyps: 0 - absent, 1 - restricted to MM, 2 - extending to the nasal cavity

Edema of mucosa: 0 - absent, 1 - mild/moderate edema, 2 - polypoid degeneration

Discharge: 0 - absent, 1 - hyaline, 2 - thickened and/or mucopurulent

Rhinitis and sinusitis usually coexist and are concurrent in most individuals; thus, the correct terminology is now rhinosinusitis. Rhinosinusitis (including nasal polyps) is defined as inflammation of the nose and the paranasal sinuses characterised by two or more symptoms, one of which should be either nasal blockage/

obstruction/ congestion or nasal discharge (anterior/posterior nasal drip), ± facial pain/pressure, ± reduction or loss of smell; and either endoscopic signs of polyps and/or mucopurulent discharge primarily from middle meatus and/or; oedema/mucosal obstruction primarily in middle meatus, and/or CT changes showing mucosal changes within the ostiomeatal complex and/or sinuses⁸.

Short-term budesonide transnasal nebulization is an effective and safe treatment option in patients with eosinophilic CRS with NP, achieving clinical improvement by regulating, remodelling cytokine expression, and T-cell subset distribution⁹. Pre-operative use of corticosteroids in FESS, results in significantly reduced blood loss, shorter operative time and improved surgical field quality¹⁰.

Studies are limited on the intra-operative use of corticosteroids to reduce postoperative pain. Corticosteroids improve postoperative endoscopic scores in CRS and recurrence rates in cases of CRS with Nasal polyps.

CONCLUSION:

Based on the articles studied in this review, the incidence of polyposis recurrence after the surgical intervention is known to be common. The presence of diseases such as asthma, aspirin intolerance, etc is factors which increases the recurrence rate of polyposis. We concluded that among the various postoperative treatments for this recalcitrant chronic rhinosinitis in sinonasal polyps patients, budesonide nasal irrigation is an effective method for improving Quality of life, preventing recurrence and reducing the use of oral steroid. But there was no decrease in control group which showed that steroid lavage is effective in reducing the recurrence of nasal polyps.

In order to encourage extensive use of budesonide nasal irrigation, further studies regarding the appropriate dose, frequency of irrigation, and duration of treatment is needed, along with assessment of the safety of its long-term use.

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