

Role of Oral and Topical Nasal Steroids in Prevention of Ethmoidal Nasal Polyp Recurrence after Intranasal Polypectomy: A Comparative Study of 64 Cases

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ABSTRACT

Objective: To study the effect of oral and intranasal topical corticosteroids on nasal polyp recurrence after intranasal polypectomy.

Study Design: Perspective, comparative.

Place and Duration of Study: This study was conducted out in ENT and Head & Neck Surgery Department, Bolan Medical Complex Hospital, Quetta, from March 2010 to March 2013.

Materials and Methods: Sixty four patients of both sexes with diagnosis of ethmoidal nasal polyp underwent intranasal polypectomy. Then patients were divided into two groups, Group-A and Group-B. There were 32 patients in each group. In group-A the patients received oral and intranasal topical steroids postoperatively while in group-B patients did not receive oral and intranasal topical steroids. Both groups were followed-up for any recurrence of polyps at interval of 3, 6 and 12 months.

Results: Recurrence rates in group-A were 6.25%, 12.5% and 21.87%, while the recurrence rates in group-B were 12.5%, 28.12% and 43.75% at interval of 3, 6 and 12 months.

Conclusion: A postoperative short course of oral steroids followed by topical nasal steroid spray after intranasal polypectomy can reduce the recurrence rate of ethmoidal nasal polyps significantly.

Key Words: Nasal polyps, Intranasal polypectomy, Oral steroids, Topical nasal steroids, Recurrence.

INTRODUCTION

Nasal polyps are a common pathology of unknown aetiology with a high rate of recurrence after surgery. The prevalence of nasal polyposis in general population is between 1% and 4%.¹ It increases with age, reaching a peak in those aged 50 years and older. The male to female ratio is about 2:1.² The patient presents with symptoms of nasal obstruction, hyposmia and postnasal drip. The polyps are visible on anterior rhinoscopy as pearly white, multiple grape like masses. In some cases, there is proptosis or hypertelorism. CT Scan and in some cases MRI of nose and paranasal sinuses are routine investigations for ethmoidal polyps. Biopsy of the postoperative specimen is necessary for confirmation of diagnosis. Treatment of ethmoidal polyps comprises of medical and surgical modalities. The mainstay of medical management is intranasal and oral systemic corticosteroids.³ The surgical treatment comprises of intranasal polypectomy, intranasal polypectomy with intranasal ethmoidectomy⁴, transantral ethmoidectomy, external ethmoidectomy and Functional endoscopic sinus surgery (FESS).⁵ Functional endoscopic sinus surgery (FESS) is now widely accepted for treatment of nasal polyps, however, it is not available in most of the centers. In such centers, intranasal polypectomy still remains the practiced option.⁶ Even after endoscopic sinus surgery higher

recurrence rates have been observed. Recurrence is one of the problems facing every otolaryngologist in management of cases. The rate of recurrence is variable and different studies show that just over 40% present for the first time and 5% had five or more polypectomies.⁷ There is evidence that administration of systemic steroids in the postoperative period for patients who have polyps may have a significant impact on their postoperative course.⁸ The use of intranasal topical steroids is the best treatment for the prevention of recurrence of nasal ethmoidal polyps.⁹ The purpose of this study is to evaluate the effect of oral and intranasal steroids on nasal ethmoidal polyps recurrence after intranasal polypectomy.

MATERIALS AND METHODS

The study was conducted in ENT and Head & Neck Surgery Department, Bolan Medical Complex Hospital, Quetta, between March 2010 to March 2013. Sixty four patients of both genders with diagnosis of ethmoidal nasal polyps were included. Patients with history of diabetes mellitus, hypertension, peptic ulcer, herpes keratitis, glaucoma, osteoporosis, tuberculosis, psychiatric disorders, fungal allergic sinusitis, cystic fibrosis, aspirin sensitivity were excluded from this study. The age range of the patients was from 17 to 65 years. After complete workup all patients underwent intranasal polypectomy under general anesthesia. The

postoperative specimens were sent for histopathological examination to confirm the diagnosis. Then patients were divided into two groups, group-A and group-B. There were 32 patients in each group. The patients in group-A received 60mg of prednisolone for one week tapered over 3 weeks. This was followed by nasal steroid spray. Beclomethasone dipropionate two sprays, each containing 50 μ g delivered in each nostril twice a day for three months, while patients in group-B did not receive oral and nasal topical steroids postoperatively. All other treatment protocol was same for both groups. All patients were followed at interval of 3, 6 and 12 months for recurrence. Statistical analysis was performed using t-test. A probability value of $p<0.05$ was taken as the level of significance.

RESULTS

The study included 64 patients of the age 17 to 65 years with a mean age of 43.76 years. There were 43 male patients and 21 female patients and male to female ratio was 2:1. The mean age for group-A patients was 44.75 years and the mean age for group-B patients was 42.78 years. In group-A who received oral and nasal topical steroids in their postoperative period, the recurrence rate was 6.25% after three months of surgery. While in group-B who did not receive oral and nasal topical steroids recurrence was 12.5% after 3 months of surgery. After six months of surgery the total recurrence in group-A was 12.5% and in group-B total recurrence was 28.12%. After one year of follow-up the total recurrence in group-A of patients was 21.87% and in group-B of patients it was 43.75% as depicted in figure 1. Table 1 and 2 show the recurrence rates during follow-up period. These results show a significant reduction in the recurrence of ethmoidal nasal polyps after one year in group-A in comparison with the group-B ($p<0.02$), which shows statistically significant difference.

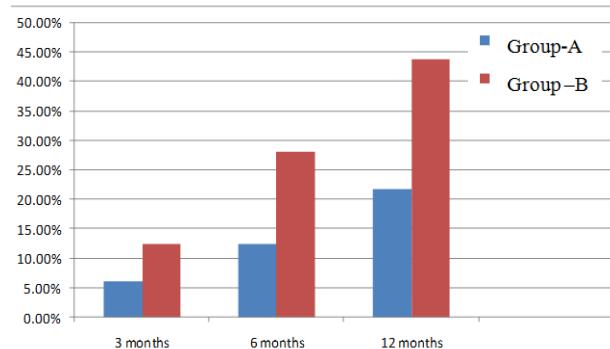


Fig No. 1: Recurrence rate in group-A and group-B of patients.

Table No.1: Recurrence rate in group-A of patients

Duration	No. of patients	Percentage
3 months	2	6.25%
6 months	4	12.5%
12 months	7	21.87%

Table No.2: Recurrence rate in group-B of patients

Duration	No. of patients	Percentage
3 months	4	12.5%
6 months	9	28.12%
12 months	14	43.75%

DISCUSSION

Several controlled studies have shown that topical steroids can delay the recurrence of polyps after surgery and with that postpone the need for new surgery.^{10,11,12} Recurrence rate in group-B of patients Systemic steroids are more potent, and have shown to be more effective at decreasing polyp eosinophilia when compared with steroid sprays.¹³ A short course of systemic steroid is equally effective as simple polypectomy with a snare and it may serve as a medical polypectomy.¹⁴ Bross- Soriano et al, reported that the use of nasal topical steroids (fluticasone propionate) after endoscopic surgery of polyps is effective in reducing recurrence of nasal polyps (14% compared to 44% in control group).¹⁵ Kang et al, found that high dose nasal topical corticosteroid therapy is more effective than low dose topical therapy in preventing recurrence of nasal polyps (7.1% opposed to 44%).¹⁶ According to a study by Al-Husban et al, preoperative short course of oral steroids followed by postoperative topical nasal steroid sprays show significant reduction in recurrence rate of nasal polyps after endoscopic nasal polypectomy.¹⁷ Whichever technique of surgery is used, there is quite a high incidence of recurrence of nasal polypi after the operation, so surgery should be followed by corticosteroid nasal spray.¹⁸ The rate of recurrence is higher in patients with asthma, eczema and aspirin hyper sensitivity.¹⁹ Medical therapy after surgery is essential for preventing recurrence.²⁰

In our study patients who received a short course of oral steroids followed by topical nasal steroid sprays after intranasal polypectomy had a low rate of recurrence as compared to those who did not receive steroids postoperatively. The observation of many international studies are comparative with our this study.

CONCLUSION

A postoperative short course of oral corticosteroids followed by topical nasal steroid sprays significantly can reduce the recurrence rate of the ethmoidal nasal polyps after intranasal polypectomy.

Recommendation: Further studies are required to investigate the recurrence of polyps in postoperative polypectomy steroid therapy.

REFERENCES

1. Bateman N, Fahy C, Woolford TJ. Nasal polyps: still more questions than answers. J Laryngol Otol 2003; 117:1-9.

2. Mygind N, Lund VJ. Nasal polyposis. In: Gilbert RW, Gleeson M and Scott-Brown WG eds. Scott-Brown's Otorhinolaryngology Head and Neck Surgery. Hodder Arnold 2008;187:1549-59.

3. Nores J, Avan P, Bonfils P. Medical management of nasal polyposis: a study in a series of 152 consecutive patients. *Rhinol* 2003; 41(2):97-102.

4. Eichel BS. The intranasal ethmoidectomy. A 12 year prospective. *Otolaryngol Head Neck Surg* 1982;90: 540-543.

5. Schaefer SD, Manning S, Close LG. Endoscopic paranasal sinus surgery. Indications and contraindications. *Laryngoscope* 1989;11:1-5.

6. Iqbal J, Raza SN, Naqvi NU, Azeem AQ, Raahat ZM. Endoscopic sinus surgery versus conventional intranasal polypectomy for ethmoidal nasal polyposis. *Pak J Otolaryngol* 2007;23:3-5.

7. Drake-Lee AB, MC laughlan P. Clinical symptoms, free histamine and IgE in patients with nasal polyps. *Int Archives of Allergy and Applied Immunol* 1982; 69:268-271.

8. Wright E, Agrawal S. Impact of perioperative systemic steroids on surgical outcomes in patients with chronic rhinosinusitis with polyposis: evaluation with novel perioperative sinus endoscopy (POSE) scoring system. *Laryngoscope* 2007; 117:1-7.

9. Stjäme P, Olsson P, Alenius M. Use of mometasonefuroate to prevent polyp relapse after endoscopic sinus surgery. *Arch Otolaryngol Head Neck Surg* 2009; 135:296-302.

10. Dingsör G, Kramer J, Olsholt R, Sodersström T. Flunisolide nasal spray 0.025% in the prophylactic treatment of nasal polyposis after polypectomy. A randomized double-blind parallel, placebo-controlled study. *Rhinol* 1985; 23: 49-58.

11. Karlsson G, Rundcrantz H. A randomized trial of intranasal beclomethasone dipropionate after polypectomy. *Rhinol* 1982;20:144-8.

12. Rowe-Jones J, Medcalf M, Durham S, Richards D, Mackay I. Functional endoscopic sinus surgery: 5 year follow up and results of a prospective, randomized, stratified, double blind, placebo controlled study of postoperative fluticasone propionate aqueous nasal spray. *Rhinol* 2005;43: 2-10.

13. Jankowski R, Bouchoua F, Coffinet L, Vignaud GM. Clinical factors influencing the eosinophil infiltration of nasal polyps. *Rhinol* 2002; 40(4): 173-8.

14. Lildholdt T, Fogstrup J, Gammelgaard N, Kortholom B, Ulsoe C. Surgical versus medical treatment of nasal polyps. *Acta Otolaryngologica* 1988;105:140-3.

15. Bross-Soriano D, Arrieta-Gomez J, Calleros H. Infection after endoscopic polypectomy using nasal steroids. *Otolaryngol Head Neck Surg* 2004;130: 319-322.

16. Kang G, Yoon B, Jung JH, Cha HE, Kim ST. The effect of high dose topical corticosteroid therapy on prevention of recurrent nasal polyps after revision endoscopic sinus surgery. *Am J Rhinol* 2008; 22: 497-501.

17. Al-Husban H, Nawasreh O, Al-Raggad D. The efficacy of preoperative short course of oral steroids followed by postoperative topical nasal sprays on nasal polyp recurrence after endoscopic nasal polypectomy. *J of the Royal Med Services* 2010; 17(4):56-60.

18. Lidholdt T, Runderantz H. Glucocorticosteroid treatment for nasal polypi. *Otolaryngol Head Neck Surg* 1997; 123:595-600.

19. Bolyard F, Gosset P, Lamblin C, Wallaret B. Cell and cytokine profiles in nasal secretions from patients with nasal polyposis: effects of topical steroids and surgical treatment. *Allergy* 2001;56: 333-8.

20. Assanasen P, Naclerio RM. Medical and surgical management of nasal polyps. *Curr Opin Otolaryngol Head Neck Surg* 2001; 9: 27-36.

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