

Duration of Nasal Packs in the Management of Epistaxis

Nasir Akram Kundi¹ and Mohsin Raza²

ABSTRACT

Objective: To compare the efficacy of nasal packs for 12 and 24 hours in the management of epistaxis.

Study Design: Quasi experimental study.

Place and Duration of Study: Combined Military Hospital, Nowshera and Heavy Industries Taxilla Hospital, from October 2012 to April 2013.

Methodology: A total of 60 patients presenting with epistaxis were selected and were divided into two groups of 30 patients each. Patients in both the groups were managed by nasal packs. In group-A packs were removed after 12 hours while in group-B after 24 hours. Symptoms of headache, lacrimation and recurrence of bleeding were recorded. SPSS 20 was used for data analysis and p-value less than 0.01 was considered significant.

Results: There was significant difference for headache between removal of nasal packs after 12 hours and 24 hours ($p < 0.001$). There was significant difference for excessive lacrimation at 12 and 24 hours ($p = 0.001$). No significant difference was observed for recurrence of bleed when nasal packs were removed at 12 and 24 hours ($p = 0.317$).

Conclusion: Duration in removal of nasal packs after 12 or 24 hours made a difference in the management of epistaxis. Symptoms of headache and excessive lacrimation were significantly higher when nasal packs were removed after 24 hours. It is recommended that patient could be managed with lesser duration of packs after episode of epistaxis to avoid inconvenience.

Key Words: Nasal packs. Epistaxis. Lacrimation. Headache. Bleeding.

INTRODUCTION

Epistaxis is one of the commonest emergencies in ENT Department.¹ It is relatively benign, but sometimes it can produce serious, life-threatening situations.² Upto 60% of the population is estimated to have had at least one episode of epistaxis at some point in their lives. Of this group, 6% seek medical care to treat epistaxis, with 1.6 in 10,000 requiring hospitalization.³ A large number of cases occur in children below 10 years of age. Epistaxis is more common in colder seasons and in northern climates because of decreased humidity and the consequent drying of the nasal mucosa.⁴ Other causes of epistaxis include mucosal breakdown due to infiltration by benign (Angiofibroma), malignant and granulomatous disease or nasal trauma.^{5,6} In ninety percent of cases epistaxis are anterior, originating from the Kiesselbach plexus. Anterior epistaxis represents as unilateral, steady, non-massive bleeding. Rest 10% of epistaxis are posterior, presenting massive bleeding that is initially bilateral. Mild bleeding may be addressed with head elevation, ice packs and gentle pressure. Heavy bleeding may require packing.

Nasal packing is required when more conservative methods like chemical cautery with silver nitrate, electric

or thermal cautery have failed. A widely used method is nasal packing with ribbon gauze soaked with topical anaesthetic and decongestant. The requirement for nasal packing includes sharp and focused light source nasal speculum and nasal dressing forceps. Layers upon layers carefully placed nasal packing and manual dexterity of the surgeon ensures effective pressure on walls, roof and floor of the nose. Its advantages include haemostasis through pressure effects on nasal septum, floor and lateral wall of nose. Its disadvantages include pressure necrosis due to tight nasal packing, neurogenic syncope during packing, headache, lacrimation from eyes due to impaired drainage from nasolacrimal duct. Prolonged nasal packing is a potential source of infection. Nasal packing left for more than 48 hours can cause toxic shock syndrome. Moreover, the effects of total nasal packing on nocturnal oxygen saturation and difficulty in sleep are well known.

It has remained a dilemma to decide about the exact duration of placing intranasal packs for arrest of nosebleed. Common methods practiced in our country are based upon convention and teacher following with no scientific basis for duration of nasal packing and the exact time for their removal. This research work was aimed to provide a solid evidence for placing nasal packs for shorter duration to minimize the discomfort associated with prolonged nasal packing.

METHODOLOGY

Those patients were subjected to nasal packing whose nose bleed was refractory to conservative methods like

¹ Department of ENT, Combined Military Hospital, Nowshera.

² Department of ENT, Heavy Industries Taxilla Hospital, Taxilla.

Correspondence: Dr. Nasir Akram Kundi, ENT Department, PAF Hospital, PAF Complex, E-9, Islamabad.

E-mail: nasir1926@hotmail.com

Received: June 03, 2013; Accepted: December 15, 2014.

nose pinching, topical application of nasal decongestants, chemical cautery and electric cautery. A total of 60 patients were selected by random sampling. Sample size was selected on the basis of patient turnover in ENT OPD of the hospital presenting with complaints of epistaxis in the pre-defined duration of study. This was calculated from statistical records of the hospital. They were divided into two groups of 30 patients each. Patients were assigned to the two groups by lottery method. Prior consent was taken from the patients for participation in the study. Formal approval from hospital ethical committee was acquired.

Group-A was managed by bilateral nasal packing for 12 hours and group-B for 24 hours. Nasal packing here means packing with an inch thick ribbon gauze soaked with 1% lignocaine and adrenaline. All the patients were given Tab Augmentin 625 mg thrice daily and tab Paracetamol twice daily. Those patients presenting with epistaxis due to trauma or no previous medical illness and not using anti-coagulant agent were included in the study. All the patients who were managed by posterior nasal packing, having bleeding disorders and pre-existing sinonasal disease were excluded from the study. A specially designed proforma was used to gauge the symptoms after removal of nasal packs. Patients were interviewed for their experience with intranasal packing. Patients described the severity and presence of headache and lacrimation in their own words. Based on patients description, decision regarding presence of symptoms was made. They were observed for 30 minutes for recurrence of epistaxis.

The data was analysed by SPSS version 20. Wilcoxin Signed Rank Test and McNemar tests were used as tests of significance and p-value of less than 0.01 was taken as significant.

RESULTS

Twenty four (40%) patients were male and 36 (60%) were female. Mean age was 36 years. Two groups were compared and it was found that there was significant difference ($p < 0.001$) for headache between removal of nasal packs after 12 and 24 hours. It was also revealed that there was significant difference ($p = 0.001$) for excessive lacrimation at 12 and 24 hours, No significant difference ($p = 0.317$) was observed for recurrence of bleed when nasal packs were removed at 12 and 24 hours. Table I shows the actual number of patients having symptoms in each group. Frequencies of patients with headache, excessive lacrimation and recurrence of bleed in group-A and B are shown in Figures 1 and 2.

DISCUSSION

In a modern day ENT practice, nasal packing for epistaxis has been replaced by endoscopic treatment. It may be necessary to perform angiography and emboliz-

Table I: Patients having symptoms in both the groups.

	A (n=30)	B (n=30)
Headache	4	19
Excessive lacrimation	7	20
Re-bleed	4	2

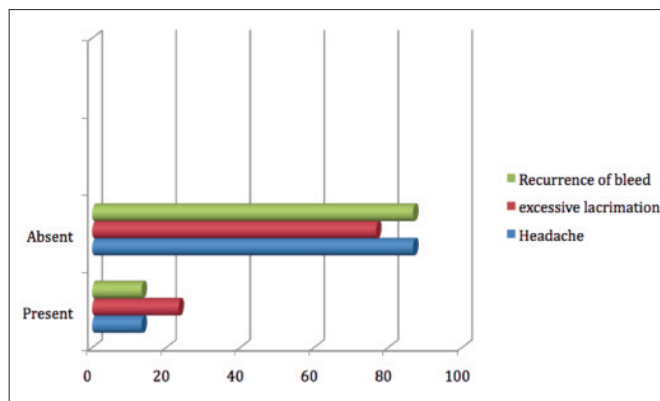


Figure 1: Percentage of patient with headache, excessive lacrimation and recurrence of bleed in group A.

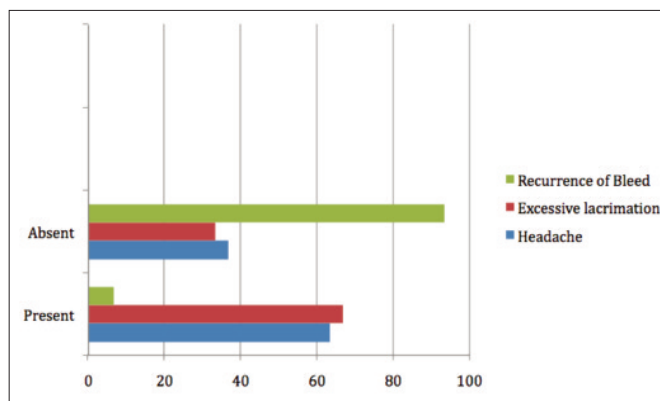


Figure 2: Percentage of patient with headache, excessive lacrimation and recurrence of bleed in group B.

ation of bleeding vessel. But still due to lack of resources nasal packing is still the most economical and widely practiced treatment for epistaxis. Duration of nasal packing is not well defined in the literature. While it has got wide implications on the patient comfort and complications of nasal packing. Presence of nasal packing cause discomfort to the patient and mouth breathing which leads to dryness of throat. It also disturbs the mucociliary clearance and cause constant stimulation of mucosal glands leading to stasis of secretions, mucosal inflammation and headache.¹¹ Lacrimation (epiphora) occurs due to blockage of nasolacrimal duct. Presence of nasal packing itself causes constant stimulation of lacrimal apparatus resulting in excessive lacrimation.^{12,13} In this study, two chief complaints after nasal packing were considered for the evaluation of duration of nasal packing. It is evident from this study that there is no difference between duration of nasal packing in terms of re-bleeding. However, it can be seen that nasal packing for 12 hours

is superior to that for 24 hours because of less headache and lacrimation. In addition to duration of nasal packs, the type of material used for nasal packing can also affect the outcome. Pre-fabricated nasal tampons cause less symptoms. Lacrimation and headache are subjective feelings that can vary from one patient to another. Type of personality and tolerance level of the study population can be a confounding factor.

Shargorodsky *et al.*¹⁴ also concluded that duration of nasal packs have no effect on recurrence of bleed which is in concordance with the results of this study. They have also counted chemical cautery to be superior to nasal packing in initial management of epistaxis in terms of need for further intervention like cautery and vessel ligation.

Dedhia *et al.*¹⁵ worked on cost effectiveness of nasal packs compared to endoscopic ligation of bleeding vessels and found that if duration of nasal packing is reduced it decreases the cost of treatment in terms of hospital stay of patient. This matches the objective of the study that shorter duration of nasal packing translates into quality treatment for the patient.

Gupta *et al.*¹⁶ also conducted a study on complications of nasal packing. They included raised blood pressure, negative middle ear pressure, sleep disturbance and changed oxygen saturation as markers for nasal packing complications. They suggested the use of airway with nasal packing to minimize these complications.

Wang *et al.*¹⁷ compared nasal packing with suturing after septoplasty. Results were comparable with this study. Packing group experienced more nasal pain, headache, dysphagia and sleep disturbance. However, there was no difference in epiphora compared to suture group. However, in the present study, patients with longer duration of nasal packs experienced more lacrimation.

Ardehali *et al.*¹⁸ found out significantly higher pain levels in patients in whom nasal packing was applied.

Cukurova *et al.*¹⁹ also proved the presence of nasal packing causes more pain and headache to the patient which is concurrent with the results of this study that prolonged nasal packing causes more discomfort and pain to the patient.

Ha *et al.*²⁰ clearly indicated nasal packing for the duration of 48 hours as the conventional treatment for epistaxis. While in this study, evidence was for adopting 12 hours nasal packing as optimal management of epistaxis.

Zayyan *et al.*²¹ employed Holter monitorization as means of evaluating effects of nasal packing on cardiac functions secondary to compression of nasal mucosa and vagal stimulation. They warranted close monitoring of patients with cardiopulmonary diseases.

Gyawali *et al.*²² worked on duration of nasal packing postoperatively after septal surgery. They concluded that

there was no significant difference in terms of recurrence of bleed between nasal packing for 24 and 2 hours. However, lesser duration of nasal packing was superior in terms of causing less discomfort to the patient. Similar results were obtained in this study.

Kazkayasi *et al.*²³ concluded that after septal surgery nasal packing caused more facial pain and headache as compared to suturing which supports the theme of this study that prolonged nasal packing increases suffering of the patient with no significant effect on recurrence of bleeding.

On review of available literature, there was no substantive evidence on optimal duration of nasal packing in patients presenting with epistaxis. However, there is a lot of work available on type of material and methods of treatment of epistaxis.²⁴ Nasal packing is the most readily available, cheap and requires less expertise as compared to other methods of treating nosebleed.²⁵ The present work will help in providing evidence for shorter duration of nasal packing which will translate into patient comfort and shorter hospital stay. Various materials used for nasal packing in emergency departments in western countries are mostly unavailable in our country so the authors had to rely solely on traditional techniques. Secondly, in most advanced centers the sphenopalatine artery ligation is preferred even in early management of epistaxis which is lacking in study set-up. Most likely reason for this is unavailability of nasoendoscopy equipment.

It was also learnt that there are other parameters available for the assessment of complications with prolonged nasal packing. These are rise in blood pressure, fall of oxygen saturation during sleep and disturbance of sleep. These can be incorporated in any of future studies conducted on nasal packing. Similarly, future studies should be carried out on effect of duration of nasal packing on patients undergoing nasal surgeries. Still there is lot of room for future research on duration of nasal packing with different types of materials. Secondly, types of topical and systemic medicines administered before and after nasal packing will also affect the time required for keeping nasal packs in place.

It is recommended that custom-made nasal packs be widely made available for use in Pakistan. As the incidence of complications is less with their use and they provide less discomfort to the patient.

CONCLUSION

Nasal packing for 12 hours was superior to that for 24 hours in terms of less discomfort for the patient with no difference in terms of re-bleed.

REFERENCES

1. Spielmann PM, Barnes ML, White PS. Controversies in the specialist management of adult epistaxis: an evidence-based review. *Clin Otolaryngol* 2012; **37**:382-9.

2. Barnes ML, Spielmann PM, White PS. Epistaxis: a contemporary evidence based approach. *Otolaryngol Clin North Am* 2012; **45**:1005-17.
3. Viehweg TL, Roberson JB, Hudson JW. Epistaxis: diagnosis and treatment. *J Oral Maxillofac Surg*. 2006; **64**:511-8.
4. Marx J, Hockberger R, editors. Rosen's emergency medicine: concepts and clinical practice. 6th ed. Philadelphia: Saunders; 2006.
5. Faistauer M, Faistauer A, Grossi RS, Roithmann R. Clinical outcome of patients with epistaxis treated with nasal packing after hospital discharge. *Braz J Otorhinolaryngol* 2009; **75**: 857-65.
6. Pratt GF, Wilson P. A simple nasal-packing technique for minor nasal surgery which reduces pain associated with removal of packs: a surgical technique. *J Plast Reconstr Aesthet Surg* 2010; **63**:e84.
7. Liu Y, Zheng C, Wei W, Liu Q. Management of intractable epistaxis: endoscopy or nasal packing? *J Laryngol Otol* 2012; **126**:482-6.
8. Ozkiris M, Kapusuz Z, Saydam L. Comparison of nasal packs with transseptal suturing after nasal septal surgery. *Am J Otolaryngol* 2013; **34**:308-11.
9. Koudounarakis E, Chatzakis N, Papadakis I, Panagiotaki I, Velegarakis G. Nasal packing aspiration in a patient with Alzheimer's disease: a rare complication. *Int J Gen Med* 2012; **5**:643-5.
10. Edkins O, Nyamarebvu CT, Lubbe D. Cerebrospinal fluid rhinorrhoea after nasal packing for epistaxis: case report. *J Laryngol Otol* 2012; **126**:421-3.
11. Yilmazer C, Sener M, Yilmaz I, Erkan AN, Cagici CA, Donmez A, *et al*. Pre-emptive analgesia for removal of nasal packing: a double-blind placebo controlled study. *Auris Nasus Larynx* 2007; **34**:471-5.
12. Melia L, McGarry GW. Epistaxis: update on management. *Curr Opin Otolaryngol Head Neck Surg* 2011; **19**:30-5.
13. Kula M, Yuce I, Unlu Y, Tutus A, Cagli S, Ketenci I. Effect of nasal packing and haemostatic septal suture on mucociliary activity after septoplasty: an assessment by rhinoscintigraphy. *Eur Arch Otorhinolaryngol* 2010; **267**:541-6.
14. Shargorodsky J, Bleier BS, Holbrook EH, Cohen JM, Busaba N, Metson R, *et al*. Outcomes analysis in epistaxis management: development of a therapeutic algorithm. *Otolaryngol Head Neck Surg* 2013; **149**:390-8.
15. Dedhia RC, Desai SS, Smith KJ, Lee S, Schaitkin BM, Snyderman CH, *et al*. Cost-effectiveness of endoscopic sphenopalatine artery ligation versus nasal packing as first-line treatment for posterior epistaxis. *Int Forum Allergy Rhinol* 2013; **3**:563-6.
16. Gupta M, Singh S, Chauhan B. Comparative study of complete nasal packing with and without airways. *B-ENT* 2011; **7**:91-6.
17. Wang M, Xing Z, Yuan X, Liu Y, Han L, Qin N. Effect of nasal septal suture versus nasal packing after septoplasty. *Lin Chung Er Bi Yan Hou Tou Jing Wai Ke Za Zhi* 2011; **25**: 1068-75.
18. Ardehali MM, Bastaninejad S. Use of nasal packs and intranasal septal splints following septoplasty. *Int J Oral Maxillofac Surg* 2009; **38**:1022-4.
19. 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**:111-4.
20. Ha JF, Hodge JC, Lewis R. Comparison of nasoendoscopic-assisted cautery versus packing for the treatment of epistaxis. *ANZ J Surg* 2011; **81**:336-9.
21. Zayyan E, Bajin MD, Aytemir K, Yilmaz T. The effects on cardiac functions and arterial blood gases of totally occluding nasal packs and nasal packs with airway. *Laryngoscope* 2010; **120**:2325-30.
22. Gyawali KR, Pokharel M, Amatya RC. Short duration anterior nasal packing after submucosal resection of nasal septum. *Kathmandu Univ Med J (KUMJ)* 2008; **6**:173-5.
23. Kazkayasi M, Dinçer C, Arikan OK, Kiliç R. [The effect of nasal packing and suture technique on systemic oxygen saturation and patient comfort after septoplasty]. *Kulak Burun Bogaz Ihtis Derg* 2007; **17**:318-23. [Turkish]
24. Pratt GF, Wilson P. A simple nasal-packing technique for minor nasal surgery which reduces pain associated with removal of packs: a surgical technique. *J Plast Reconstr Aesthet Surg* 2010; **63**:e84.
25. Amen F, Pace-Balzan A. Technical tutorial: How to pack a nose with bismuth iodoform paraffin paste gauze safely and effectively. *Emerg Med J* 2009; **26**:52.

