Original Research Article

DOI: https://dx.doi.org/10.18203/issn.2454-5929.ijohns20214231

Etiology and treatment modalities in epistaxis

Sreelakshmi Balakrishnan, Sajilal Manonmony, Nidhin Prakash*, Rejee Ebenezer Renjit, Avinash Mohan

Department of ENT, Dr. Somervell Memorial C.S.I Medical College Hospital, Karakonam, Thiruvananthapuram, Kerala, India

Received: 28 August 2021 Revised: 02 October 2021 Accepted: 06 October 2021

*Correspondence: Dr. Nidhin Prakash,

E-mail: nidhinprakash@gmail.com

Copyright: © the author(s), publisher and licensee Medip Academy. This is an open-access article distributed under the terms of the Creative Commons Attribution Non-Commercial License, which permits unrestricted non-commercial use, distribution, and reproduction in any medium, provided the original work is properly cited.

ABSTRACT

Background: Epistaxis or 'hemorrhage from the nose' is a frequent presentation in the otorhinolaryngologic emergency and both conservative and surgical modalities have been used in the treatment. The present study was undertaken to estimate the proportion of patients with epistaxis who are effectively managed with conservative modalities.

Methods: A total of 60 patients (39 males and 21 females) between 18 and 70 years, with epistaxis were studied in the department of otorhinolaryngology and emergency units of Dr. Somervell Memorial C.S.I Medical College Hospital, Karakonam, Thiruvananthapuram, between November 2018 and April 2020. The data, that is the proportion of patients who are effectively managed with conservative modalities, was entered into Microsoft - Excel sheet and analysis was done using statistical package for social sciences (SPSS) software trial version.

Results: Out of 60 cases of epistaxis, 81.67% were effectively controlled by conservative management like general first aid (43.33%), chemical cautery (10%), and nasal packings via anterior (21.67%) and posterior (6.67%).

Conclusions: In 81.67% nasal bleeding was effectively controlled by conservative treatment measures and in 18.33% surgical measures were required.

Keywords: Epistaxis, Conservative management, Cauterization, Nasal packing

INTRODUCTION

Epistaxis is a commonly occurring phenomenon which is defined as "bleeding from inside the nose" and often presents as an emergency. It is a problem which may cause great anxiety to the patients. It is estimated to affect 60% of the population, of which 6% may need medical attention. It is observed that intervention is required only for a small population. Common etiologies of epistaxis include trauma, hypertension, infection, nasal polyp, malignancy, deviated nasal septum, hypothyroidism, bleeding abnormality and angioma. The management of epistaxis involves many factors with regard to the treatment and ultimate control of the condition. Nasal bleeding can be anterior or posterior, and most cases can

be treated successfully with conservative treatment modalities like general first aid, chemical cauterization and nasal packings via anterior and posterior. In cases of refractory epistaxis, surgical intervention can be considered.²

Objectives

The main objective of the study was to estimate the proportion of patients who are effectively managed with conservative modalities in epistaxis.

The secondary objectives were: to analyse the etiology of epistaxis; and to describe various kinds of conservative modalities employed among the study subjects.

METHODS

A hospital based cross sectional study was conducted at Dr. Somervell Memorial C.S.I Medical College Hospital, Karakonam, Thiruvananthapuram during the period from November 2018 to April 2020. Sixty patients between 18 and 70 years were studied. Patients presented with epistaxis in the department of otorhinolaryngology and emergency unit meeting the inclusion and exclusion criteria and who gave consent were included in the study.

Inclusion criteria

Patients presenting with epistaxis in the outpatient and emergency department of otorhinolaryngology in the age group of 18 to 70 years who gave consent for the study.

Exclusion criteria

Pregnancy and lactation. Altered mental status. Intra cranial injury. Post-operative epistaxis after surgeries like septoplasty and functional endoscopic sinus surgery (FESS).

Sampling method

Consecutive sampling – consecutive patients attending the outpatient and emergency department of ENT were recruited for the study until the desired sample size was reached.

Sample size

It was calculated by the formula 4pq/d²

p= available local prevalence rate in target population (obtained from comparable studies)

q = 100-p

d= relative precision

In this study,

p= 94% approximately (proportion of patients with epistaxis who were effectively managed with conservative modalities).³

q = 6%

d = 7%

Substituting in the formula

 $4pq/d^2 = 50$ approximately

Data collection method

One to one interview technique, structured proforma, blood routine and nasal endoscopy.

Study procedure

Consecutive patients presented with epistaxis were enrolled in the study and were classified according to the symptoms and etiology. Blood was collected and endoscopy was done for every patient as a routine. Computed tomography (CT) scan of nose and paranasal sinuses were taken, only in the case of trauma. All patients were managed with conservative methods as first line treatment and the efficacy were observed.

Statistical analysis

The clinical data were collected (after obtaining their consent) by means of a structured proforma and the observations made were analysed with the master chart. The proportion of the patients who were effectively managed with conservative modalities, was entered into Microsoft-Excel sheet and analysis was done using statistical package for social sciences (SPSS) software trial version.

RESULTS

The study was undertaken in 60 patients with the diagnosis of epistaxis, of which 39(65.0%) were males and 21 (35.0%) females with male: female ratio 1.86:1.

Table 1: Blood pressure of patients.

Category	BP	Frequency	%
Normal	<120/<80	0	0
Elevated	120-129/<90	20	33.33
High BP stage I	130-139/<90	19	31.67
High BP stage II	>140/>90	14	23.33
Hypertensive crisis	>180/>120	7	11.67
	Total	60	100.0

The subjects under observation ranged from 18 to 70 years and were grouped under five categories viz; 18-28, 29-39, 40-50, 51-61 and 62-70 years. The average age of patients was 43.6±15.8 years and the median age was 47.5 years. Out of the 60 patients studied 60% were between 18-50 age group with equal distribution of 20.0% each, in the age groups 18-28, 29-39 and 40-50. Maximum epistatic patients (23.33%) were in the age group of 51-61. There were only 16.67% epistaxis patients above 62 years.

There were no patients with normal BP in the study. Patients having elevated blood pressure were 33.33%, 31.67% of patients were having stage I hypertension, 23.33% having hypertension stage II and 11.67% having hypertensive crisis at the time of presentation (Table 1).

The various causes of nasal bleeding were studied and it was found that the main cause of nasal bleeding was trauma in 30.0%, followed by hypertension in 23.33%. Traumatic bleeding was significantly higher in younger age group. Other important causes in the study group were rhinosporidiosis by the fungus Rhinosporidium seeberi in 18.33% patients and rhinosinusitis in 15% patients. Hypothyroidism in 5% patients, chronic liver disease and drug in take in 3.33% each, also were the causes of epistaxis. Inverted papilloma was diagnosed as the cause of bleeding in 1.67% (Figure 1).

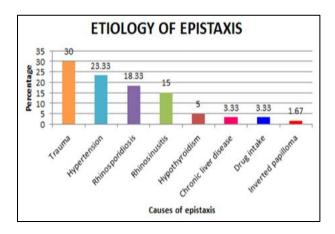


Figure 1: Etiology of epistaxis.

Table 2: Frequency of patients in relation to management of epistaxis.

Treatment measures (conservative)	Frequency	Success rate (%)	Failure (%)
General	60	26 (43.33)	34 (56.67)
Chemical cauterization	34	6 (17.65)	28 (82.35)
Anterior Nasal Packing	28	13 (46.43)	15 (53.57)
Posterior Nasal Packing	15	4 (26.67)	11 (73.33)

Management of epistaxis

The various conservative management measures followed are general measures, chemical cauterisation with silver nitrate, anterior nasal packing and posterior nasal packing. The frequency of subjects in relation to the management of epistaxis are listed in table 2.

Conservative measures of management of epistaxis included general first aid, chemical cauterization, anterior and posterior nasal packing. All the patients were given general first aid measures like pinching the nose with thumb and fore finger and ice packing for 5-10 minutes to arrest bleeding. In 26 (43.33%) patients bleeding was successfully controlled by initial first aid treatment itself. Six patients were effectively managed with 25% silver

nitrate cauterization. In the remaining 28 patients, where general first aid and chemical cauterization failed, anterior nasal packing was done and the bleeding could be successfully controlled in 13 patients (46.43%). In 4 (26.67%) patients, where general first aid, chemical cautery and anterior nasal packing were insufficient to control bleeding, posterior nasal packing was successful (Figure 2). In spite of all the above conservative measures, nasal bleeding could not be controlled in 11 patients and were advised for surgical treatment.

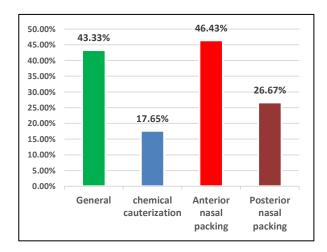


Figure 2: Success rate of conservative measures.

DISCUSSION

Epistaxis was more predominant in males 39 (65.0%) than in females 21 (35.0%) with male: female ratio 1.86:1. Similar findings were reported by Klonderful et al where males were more commonly affected than females with male: female ratio of 2:1.⁴ Juselius et al, Varshney et al also obtained similar observations and their findings range between 57.95%-74.50% for males and 25.5%-52.05% for females.⁵⁻⁸ The findings by Hussain and associates were also in confirmation with our results of male to female ratio 2:1.⁹

Maximum number of epistaxis patients (23.33%) were in the age group 51-61 years. Varshney et al observed maximum number of epistaxis cases in the age group of 40-50 years.⁷

Among the etiological factors, local factors like trauma, rhinosporidiosis, rhinosinusitis and inverted papilloma were observed in 65% of the cases whereas the systemic factors like hypertension, hypothyroidism, chronic liver disease and drug intake were the reasons in 35% of the cases in our study. Klonderful and associates conducted experiments and observed that local factors contributed to 58.55% which is comparable with the present study.⁴

It was observed that the most common cause of epistaxis was trauma 18 (30.0%) followed by hypertension 14 (23.33%). Anie et al in their study also observed similar results, that most common cause of epistaxis was trauma

in more than 50% patients followed by hypertension (11.8%).² Morgan and Kellerman opined that most frequent cause of epistaxis is trauma due to digital manipulation.¹⁰ Gilyoma and Chalya in their study found that in 30.8% of patients, the common cause of epistaxis was trauma, which is supported by our findings.¹¹

Out of 60 cases of epistaxis in the present study, 49 (81.67%) were effectively controlled by conservative measures alone. Kotecha documented that the patients admitted with epistaxis were generally managed conservatively with <1% requiring surgical intervention. 12

Of the 60 cases, 81.67% were successfully controlled by conservative management measures like first aid, chemical cauterization and nasal packings. 18.33% of cases failed and these patients required surgical interventions. Bhadouriya et al, studied 100 patients with epistaxis and found that, 79% of the cases can be successfully controlled with conservative approach, and 21% cases required surgical intervention. ¹³ This was in agreement with the findings of present study.

Limitations

Limitation of the present study was the intolerance of some patients towards posterior nasal packing which might have contributed to the failure rate.

CONCLUSION

Epistaxis was found to affect more males 39 (65.0%) than females 21(35.0%) with a male: female ratio of 1.86:1. Maximum number of epistaxis patients (23.33%) were in the age group 51-61 years. The main cause of epistaxis was identified as trauma in 30.0%, followed by hypertension in 23.33%. Majority of cases of epistaxis (81.67%), were treated successfully with conservative management like general measures (43.33%), chemical cautery (10%), anterior nasal packing (21.67%) and posterior nasal packing (6.67%).

Funding: No funding sources Conflict of interest: None declared

Ethical approval: The study was approved by the

Institutional Ethics Committee

REFERENCES

- 1. Middleton PM. Epistaxis. Emerg Med Australas. 2004;16(5-6):428-40.
- 2. Anie MT, Arjun GM, Andrews CJ, Vinayakumar AR. Descriptive epidemiology of epistaxis in a tertiary care hospital. Int J Adv Med. 2015;2:255-9.
- 3. Parajuli R. evaluation of etiology and treatment methods for epistaxis: a review at a tertiary care hospital in Central Nepal. Int J Otolaryngol. 2015;10.
- Klonderful K, Devi PS, Kamgo L, Singh MM, Singh LS. Aetiopathology and management of epistaxis in a tertiary care Hospital. IOSR Journal of Dental and Medical Sciences. 2017;16:9:38-43.
- 5. Juselius H. Epistaxis: A clinical study of 1724 patients. J Laryngol Otol. 1974;88(4):317-27.
- 6. Lee HS. Yoon BN, Ahn JH, Kim TW, Lee JH, Roh HJ. Clinical analysis of the hospitalized epistaxis. J Clin Otolaryngol. 2004;15:239-44.
- 7. Varshney S, Saxena RK. Epistaxis: A retrospective clinical study. Indian J Otolaryngol Head Neck Surg. 2005;57(2):125-29.
- Chayasate S, Roongrotwattanasiri K, Fooanan S, Sumitsawan Y. Epistaxis in Chiang Mai university hospital. J Med Assoc Thai. 2005;88(9):1282-86.
- Hussain G, Iqbal M, Shah SA, Said M, Khan SA. Evaluation of etiology and efficacy of management protocol of epistaxis. J Ayyub Med. 2006;18(4):63-6
- 10. Morgan DJ, Kellerman R. Epistaxis: evaluation and treatment. Prim Care: Clinics in Office Practice. 2014;41(1):63-73.
- 11. Gilyoma JM, Chaliya PL. Etiological profile and treatment outcome of epistaxis at a tertiary care hospital in Northwestern Tanzania: a prospective review of 104 cases. BMC. Ear, Nose and Throat Disord. 2011;11:8.
- 12. Kotecha B, Fowler S, Harkness P. Management of epistaxis: A national survey. Ann R Coil Surg Engl 1996;78(5):444-6.
- 13. Bhadouriya SS, Raghuvanshi S. Aetiology and Management of Epistaxis- A Prospective Clinical Study. Int J Clin Exp Otolaryngol. 2016;2(3):25-30.

Cite this article as: Balakrishnan S, Manonmony S, Prakash N, Renjit RE, Mohan A. Etiology and treatment modalities in epistaxis. Int J Otorhinolaryngol Head Neck Surg 2021;7:1784-7.