

Epistaxis: A Prospective Study of its Aetiology and Management

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ABSTRACT

Aim: To determine the clinical characteristics and management of epistaxis studied in our set up.

Methods: This descriptive prospective case series study was conducted at the department of ENT, Head & Neck Surgery, Mardan Medical Complex, Mardan from January 2013 to June 2013. After initial assessment all patients underwent a detailed history taking, through general examination, systemic examination and examination of ENT and relevant investigations. After getting diagnosis all patients were treated conservatively initially and surgical intervention was considered only when conservative measures failed.

Results: A total of 55 cases were enrolled constituting 38 male and 17 female, with male: female ratio of 2.2:1. These patients presented in the age range of 10–70 years with mean age of 25.78±16.86 years. There was mild, moderate and severe epistaxis in descending frequency of 49.1%, 29.1% and 21.81% respectively. There was significant difference between occurrence of epistaxis in male and female with p- value (<0.05). In this study 41.81% patients had anterior bleed and bleeding from right nasal cavity was observed in 29(52.72%). The commonest cause of epistaxis was idiopathic (18.18%) and majorities of patients (38.18%) were treated with anterior nasal packing successfully.

Conclusion: Epistaxis affect commonly male in the middle age group. Anterior epistaxis is more common. Idiopathic epistaxis occurs widely and most of the cases can be successfully treated with anterior nasal packing.

Key words: Epistaxis, Etiology, Nasal packing, Surgical and non surgical treatment

INTRODUCTION

Epistaxis is the commonest emergency in otolaryngology and often requires admission to the hospital.¹ Almost 60% of population, at some point of their life experience epistaxis and 6% need medical attention. Epistaxis is a symptom of many diverse conditions. All cases of epistaxis, regardless of the etiology, have a common bleeding pathway from the superficial and highly vascular tissue and vessels of the nose.² It can be classically divided on the basis of anatomical location into anterior or posterior nasal bleeding.³ Epistaxis can be posttraumatic, iatrogenic (nose surgery, particularly endonasal procedures) or “spontaneous”, resulting from numerous possible causative factors including local nasal factors (inflammation, infection), medications, and systemic factors such as platelet and coagulation abnormalities, alcoholism, hereditary hemorrhagic telangiectasia (Osler-Weber-Rendu disease) and hypertension.⁴ About 80% of epistaxis cases are anterior bleeds, usually from the Kiesselbach’s plexus located in the lower anterior part of the nasal septum, known as Little’s area⁵.

Treatment can be non surgical or surgical. Non surgical measures include anterior nasal packing, posterior nasal packing, chemical cauterization, electrical cauterization and balloon packing. Surgical procedures include arterial ligation (external carotid, internal maxillary, anterior/posterior ethmoidal), nasal septal reconstruction, and excision of bleeding polyp or growth.⁶ Many centers use Merocel sponges formed of compressed foam which expand inside the nasal cavity. The treatment of posterior epistaxis is more complicated, requiring balloon insertion or a formal posterior pack.³ Brighton balloons, designed specifically for the management of epistaxis, consist of two independently inflated balloons. Formal posterior packing involves inserting a gauze pad sutured to a catheter into the nose and placing it within the nasopharynx. Electrocautery may be required for severe bleeding.⁷

PATIENTS AND METHODS

This descriptive prospective case series study was conducted at the Department of ENT, Head & Neck Surgery, Mardan Medical Complex, Mardan from January 2013 to June 2013. The study subjects included all patients of any age and either sex who presented with epistaxis during the period under study. Patients who received intervention for epistaxis in other health facility and those who were not willing for enrolling in the study were excluded

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from study. These patients were received through Accident & Emergency department. After admitting the patients initial assessment was performed which included hemodynamic status, type, site and severity of bleeding. In case of mild epistaxis patient were thoroughly interrogated in term of detailed history and complete examination while in case of severe epistaxis the patient was resuscitated first and then clinical work up was done (Fig. 1).



Fig 1: Patient with anterior nasal packing for epistaxis due to hypertension

All patients underwent a detailed history taking and a through general examination, systemic examination and examination of the nose, throat and ears with special emphasis to identify the site of bleeding. All these patients were categorized in three groups of mild, moderate and severe epistaxis on the basis of assumption of blood loss in ml and estimation of Hb%. The patients with less than 50 cc blood loss and Hb% of ≥ 10 g/dl were labeled as with mild epistaxis, those with 51-100 cc blood loss and Hb% of ≤ 10 g/dl, ≥ 5 g/dl were labelled as with moderate epistaxis while those with more than 100cc blood loss and Hb% of ≤ 5 g/dl were labeled as with severe epistaxis. These patients were subjected to investigations of hematological parameters and radiological evaluation. Blood samples were taken and sent for base line haemoglobin estimation, coagulation profile and blood grouping and cross matching when indicated. Other relevant investigations were ordered based on clinical suspicion regarding a particular etiology. The diagnosis of epistaxis was made on basis of clinical history, physical findings, laboratory and radiological investigations with examination under anesthesia of the nose, nasopharynx and biopsy. All patients were treated conservatively initially and surgical intervention was considered only when conservative measures failed. Conservative treatment included

cauterization of the bleeding site using electrocautery or Silver Nitrate, anterior nasal packing and posterior nasal packing. An informed consent was taken explaining surgical procedures and its associated risks, benefits and complications. Surgical treatment included resection of intranasal tumors. The study was approved by the hospital ethical committee. All these patients were followed for minimum of 3 months duration. The data was collected on a structured proforma. The statistical analysis was performed using the statistical program for social sciences (SPSS version 15). The frequencies and percentages of categorical variables and Mean \pm SD of continuous variables were computed.

RESULTS

In this six months study total 55 cases were enrolled with male predominance constituting 38 male and 17 female, with male: female ratio of 2.2:1. These patients presented in the age range of 10–70 years with mean age of 25.78 ± 16.86 years. Most of the patients (61.81%) were received within 8 hour of the occurrence of incidence (Tables 1-2). These patients presented with mild, moderate and severe epistaxis in descending frequency of 49.1%, 29.1% and 21.81% respectively. Most of the patients presented with epistaxis between 2nd and 6th decade of life. Among the male 34.54% and 16.36% patients presented in 21-40 years and 41-60 years of age respectively while only 12.72% patients amongst female presented with epistaxis in the same age range. There was significant difference between occurrence of epistaxis in male and female with p-value (< 0.05). In this study 41.81% patients had anterior bleed followed by posterior bleed in 27.27% (Table 3). Bleeding from right nasal cavity was observed in (n-29, 52.72%), from left nasal cavity in (n-19, 34.54%) and 12.72% patients were bleeding from both nasal cavities. We noticed that the commonest cause of epistaxis was idiopathic (18.18%), followed by hypertension (12.72%) while amongst trauma road traffic accident was the common (9.2%) cause leading to nose bleed (Table 4). Other rare causes identified in this study were coagulopathy, infection and septal perforation. Different treatment modalities were utilized in this study. Majorities of patients (38.18%) were treated with anterior nasal packing, 12.72% patients needed posterior nasal packing and in 18.18% patients combination of various treatment modalities was adopted to control epistaxis (Table 5). Prophylactic broad spectrum antibiotics were given to all patients subjected to nasal packing, cauterization and excision of sinunasal tumours. The hospital stay of these patients was 1-5 days with average 3.5 days.

Table 1: Time lapse between epistaxis and arrival at hospital (n=55)

Time lapse (hours)	No.	%
8	34	61.8
24	14	25.5
48	5	9.1
96	2	3.6

Table 2: Age and gender-wise distribution of patients (n=55)

Age(years)	Male (n=38)		Female(n=17)		P value
10-20	5	9.1	3	5.6	0.10
21- 40	19	34.5	7	12.7	0.004
41-60	9	16.3	7	12.7	0.2
61-70	5	9.1	-	-	

Table 3: Frequency of site-wise distribution of epistaxis (n=55)

Site of epistaxis	No.	%
Anterior epistaxis	24	43.6
Posterior epistaxis	15	27.2
Epistaxis from both sites	11	20.0
No identifiable site	5	9.2

Table 4: Etiology of epistaxis in this study (n=55)

Etiology of epistaxis	No.	%
Idiopathic	10	18.2
Hypertension	7	12.7
Trauma		
Road traffic accident	5	9.2
Fire arm injury	5	9.2
Bomb blast injury	3	5.4
Sports	3	5.4
Assault	2	3.6
Tumours		
Benign	6	10.9
Malignant	2	3.6
Infective	5	9.2
Coagulopathy	3	5.4
Rhinosinusitis	3	5.4
Septal perforation	1	1.8

Table 5: Different treatment modalities used in this study (n=55)

Treatment option	No.	%
Anterior nasal packing	21	38.2
Posterior nasal packing	7	12.7
Local cauterization with silver nitrate	3	5.5
Multiple procedures	10	18.1
Excision of sinonasal bleeding tumours	4	7.3
Local electrocautery	3	5.5
Conservative treatment	7	12.7

DISCUSSION

Although health technology is getting improvement worldwide to combat challenges of humanities, but still some of the health problem exist without any dramatic change⁵. Among them one is the problem of

epistaxis experienced by any gender, anytime and anywhere across the globe. This study comprised of 55 patients with mean age of 25.78 years and male predominance, which is also in accordance to study of Arshad where males were doubled.⁸ Similarly Hussain G also found male dominance.⁹ We observed significant difference between occurrence of epistaxis in male and female (P- <0.05) which is also contrary to the study of Page C who found that there was no significant difference between the two gender.¹⁰ The probable explanation for male dominance may be that male is more proven to any type violence due to having comparatively more outdoor activity. As epistaxis is alarming emergency needs in time treatment and we received most of the patients (61.81%) within 8 hour of the occurrence of event but few patients arrived after 3 days due to far flung area without transport facility which is in keeping with other studies. We observed anterior nasal bleed in 41.81% patients which is lower than the report of Sigdel and Husain revealed 73.7% and 71.6% anterior epistaxis while posterior epistaxis in this study was 27.27% which is in keeping with aforementioned studies having 26.3% and 28.35% respectively.^{9,11} The reason may be that their sample size was bigger than ours. Bleeding from right nasal cavity was observed in (n-29, 52.72%), from left nasal cavity in (n-19, 34.54%) and 12.72% patients were bleeding from both nasal cavities which are comparable to the literature^{7,8}. As epistaxis is a symptom of an underlying pathological condition so its etiology can differs according the geo-cultural variation over the globe. We noticed that the commonest cause of epistaxis was idiopathic (18.18%), followed by hypertension (12.72%) while amongst trauma road traffic accident was the common (9.1%) cause leading to nose bleed. Other rare causes identified in this study were coagulopathy, infection and septal perforation. Our results are in accordance to the results of Arshad who disclosed that trauma was present in 17 (15.60%), infection in 16(14.67%), high blood pressure in 14(12.84%) and a bleeding disorder was found in 12(11.01%) patients. However our results are not in accordance with that of Nash, where epistaxis was due to atraumatic injury in 73.4% of patients and traumatic injury in 10.8%. A history of hypertension was noted in 43.7% of patients.¹² Similarly Gupta reported that 15.7% patients had epistaxis due to trauma, 42.3% had hypertension and 14.08% patients were suffered from low platelets count resulting in epistaxis¹³. Any patient received with epistaxis must be handled meticulously. The golden rule of resuscitate, stop bleeding and treat the cause is of very help. Treatment modality is either surgical or non surgical depends on the severity of

epistaxis and patient response to it. In this study majorities of patients (38.18%) were treated with anterior nasal packing, 12.72% patients needed posterior nasal packing and in 18.18% combination of various treatment modalities used. It is in keeping with work of Khtoum where anterior nasal packing was done in 43% patients and posterior nasal packing was successful in 6% patients.¹⁴ Arshad carried out anterior nasal packing in 44.95% patients and posterior nasal packing in 3% patients while in 18.35% patients some sort of surgical intervention was performed to control epistaxis. Likewise Gilyoma reported that 40.4% patients were treated with non-surgical measures while anterior nasal packing (38.5%) was the main intervention method. Surgical measures mainly intranasal tumor resection was carried out in 1.9% of cases.¹⁵

CONCLUSION

It is concluded from results of this study that epistaxis affect commonly male in the middle age group. Anterior epistaxis is more common than posterior one. Idiopathic epistaxis occurs widely and most of the cases can be successfully treated with non surgical procedures like anterior nasal packing only while some of the cases may require surgical intervention like vascular ligation to control this life threatening emergency.

REFERENCES

1. Schlosser RJ. Epistaxis: clinical experience. *N Engl J Med* 2009; 360:784-9.
2. Hill CS, Hughes O. Update on management of epistaxis. *West London Med J* 2009;1: 33-41.
3. Chhapola S, Matta I and Marker P. Comparison of blind nasal packing vs endoscopic control of epistaxis in an emergency setting. *Inter J Head Neck Surg.* 2011; 2(2):79-82.
4. Daudia A, Jaiswal V, Jones NS. Guidelines for the management of idiopathic epistaxis in adults: how we do it. *Clin Otolaryngol* 2008;33:607-28.
5. Iseh KR, Muhammad Z, Pattern of epistaxis in Sokoto, Nigeria: A review of 72 cases. *Ann Afr Med* 2008,7:107-11.
6. Eziyi JAE, Akinpelu OV, Amusa YB, Eziyi AK, Epistaxis in Nigerians: A 3-year Experience. *East Cent Afr J Surg* 2009;14(2):93-98.
7. Akinpelu OV, Amusa YB, Eziyi JA, Nwawolo CC. A retrospective analysis of aetiology and management of epistaxis in a south-western Nigerian teaching hospital. *West Afr J Med* 2009; 28:165-8.
8. Arshad M, Ahmad Z and Ali L. Epistaxis: an experience with over 100 cases. *Rawal Med J* 2007; 32: 142-5.
9. Hussain G, Iqbal M, Shah SA, Said M, Sanallah, Khan SA, et al. Evaluation of aetiology and efficacy of management protocol of epistaxis. *J Ayub Med Coll Abbottabad* 2006; 18(4):62-5.
10. Page C, Biet AL, Liabeuf S, Strunski V, Fournier A. Serious spontaneous epistaxis and hypertension in hospitalized patients. *Eur Arch Otorhinolaryngol* 2011; 268(12): 1749-53.
11. Sigdel B, Bhandary S, Karki P, Ghimire A. Epistaxis in visceral leishmaniasis: a hospital based study in Eastern Nepal. *Int J Infect Microbiol* 2012; 1(1):38-40.
12. Nash, Field S. Epidemiology of epistaxis in a Canadian Emergency Department. *Israeli J Emerg Med* 2008; 8(3): 23-8.
13. Gupta AK, Jain S, Singh DP, Jindal A, Singh K. Epistaxis: management protocol as per etiology. *clinical rhinology: AN Inter J* 2009; 2(3): 43-6.
14. Khtoum NA, Roosan MA. Evaluation of conservative measures in the treatment of epistaxis. *Khartoum Med J* 2008; 1(1): 15-7.
15. Gilyoma JM, Chalya PL. Etiological profile and treatment outcome of epistaxis at tertiary care hospital in Northwestern Tanzania: a prospective review of 104 cases. *BMC Ear, Nose Throat Disorders* 2011;11:8-12.