

Etiological Profile and Treatment Outcome of Epistaxis at a Tertiary Care Hospital in Rural Setup: a Prospective Review of 90 Cases

Nitin Kumar Jain¹, Abhay Kumar²

¹Senior Resident, Department of Otorhinolaryngology and Head and Neck surgery, UPRIMS &R, Saifai, Etawah (U.P.), India

²Professor & Head, Department of Otorhinolaryngology and Head and Neck surgery, UPRIMS & R, Saifai, Etawah (U.P.), India

Abstract: ***Aim:** Epistaxis is the commonest ENT emergency come to our hospital in emergency. There is paucity of published data regarding the management of epistaxis in India, especially the rural area. This study was conducted to describe the etiological factor and management of epistaxis a tertiary care hospital in UPRIMS & R, Saifai, Uttar Pradesh. **Methods:** This was a prospective descriptive study of the cases of epistaxis managed in our hospital from March 2014 to May 2015. The study was proceeding only after the approval of institute ethical committee. **Results:** A total of 90 patients with epistaxis were studied. Males (74.44%) were affected more than the females (25.55%). The commonest age group was 31-40 (45.55%) years. The commonest cause of epistaxis was trauma (52.22%) followed by idiopathic (26.66%). Observational (44.4%) and anterior nasal packing (41.1%) were the main intervention methods in 85.5% of cases. Non-Surgical measures include electric and chemical cauterisation under endoscope is preferred. Arterial ligation and endovascular embolization were not performed. No Complications are seen in our study. **Conclusion:** Trauma due to road traffic accidents (RTA) remains the most common etiological factor for epistaxis in our setting. Most cases were successfully managed only with conservative (non-surgical) treatment and surgical intervention done only in the last resort. Reducing the incidence of trauma from RTA will reduce the incidence of emergency epistaxis in our institute.*

Keywords: Epistaxis, Etiology, Road traffic accident, non-surgical, embolisation

1. Introduction

Bleeding from the nose is as most common otorhinolaryngological emergencies worldwide which may present as mild recurrent bleeds or severe life threatening emergency.¹ Epistaxis is estimated to occur in 60% of persons worldwide during their lifetime, and approximately 6% of those with nosebleeds require urgent medical treatment.²⁻⁵ Generally, males are slightly more affected than females.^{3,5,6,7}

The nasal mucosa is highly vascularised and richly supplied by branches of both the external and internal carotid arteries. Epistaxis is commonly divided into anterior and posterior epistaxis, depending on the site of origin.⁶

The Kiesselbach's plexus is responsible mostly for anterior epistaxis accounting for 85 to 95%, and Posterior epistaxis which constitute 5 to 15% are often more severe. Anterior epistaxis is less severe than posterior and easy to manage.⁸

The etiology of epistaxis can be classified by many criteria the local or systemic causes, age, and anatomical location. Traumatic epistaxis is more common in younger individuals (under age 40 years) and is most often due to finger pricking, facial injury, or a foreign body in the nose.⁸⁻¹⁰ In older patients (more than 50 years) epistaxis were due to systemic causes, neoplastic conditions, inflammation, or environmental factors (temperature, humidity, altitude). Epistaxis in less than 10 year is mild and mainly from Kiesselbach's plexus, whereas older than 50 years posterior bleed is more common and severe one.¹¹

The aim of our study was to control haemorrhage, reduce hospital stay and limit complications in a cost effective way. Specific treatment can be conservative or surgical. Conservative methods include cauterization and nasal packing. Surgical methods involve ligation of feeding vessels, removal of tumor and septoplasty. The aim of our study was identify the etiological factor for epistaxis in local population and to determine the outcome of treatment of these patients.

2. Methods

This prospective descriptive study conducted in UPRIMS & R, Saifai, Uttar Pradesh, over a one year period from March 2014 to Feb 2015. All patients included in our study presented with epistaxis in Accident & Emergency department, ENT OPD and as referral from other departments as well. All patients were assessed for haemodynamic status, GCS, Cervical injury, and type and severity of bleeding. Patient detailed history and local and systemic examination was done if bleeding is mild. If bleeding is severe then history was taken after bleeding was controlled. Resuscitative measures also use along with control of epistaxis. Blood sample sent to rule out any hemodynamic instability. Radiological and haematological evaluations were done.

The diagnosis of epistaxis was based on mainly by clinical history, physical findings, laboratory and radiological investigations and examination of nose under endoscope. All patients were treated conservatively initially and surgical intervention was considered only when conservative treatment failed to control the epistaxis. Conservative (non-surgical) treatment includes electric and chemical

cauterization of the bleeding site, anterior nasal packing and posterior nasal packing. Surgical treatment included resection of intranasal tumours, removal of spur. Embolization and arterial ligation were not done in any case. Parameters extracted include demographics, cause of epistaxis, age, location of bleeding site, concomitant medical conditions, drug history, treatment modality, complications, length of hospital stay and examination findings. The data was analysed using simple statistical methods.

3. Results

During the study period, a total of 90 patients were studied. 71(78.8%) patients presented through the RTA and emergency units and 19(21.1%) presented in the otorhinolaryngology OPD. There were 67 males (74.4%) and 23(25.5%) females with a male to female ratio of 2.9:1. Their ages ranged between 5 and 80 years. In our study the most common age group affected in epistaxis was 31-40 years. The commonest cause of epistaxis was trauma (52.2%) followed by idiopathic (26.6%) and nasal tumour 7(7.77%)(Table 3). All patients with non-traumatic epistaxis had previous history of nasal bleeding ranging from one to five episodes. According to the bleeding site, 83 patients (92.2%) had anterior nasal bleeding, 3(3.3%) had posterior bleeding and the remaining 4(4.4%) patients had non-identifiable bleeding sites.(Table 4)

Conservative management is a main treatment for epistaxis and effective in 92.2% of cases. Wait and watch, without active intervention to arrest bleeding and anterior nasal packing were most common non-surgical measures accounting for 44.4% and 41.1% respectively.

Surgical measures mainly tumor resection was carried out in 7(7.77%) patients of cases mostly in juvenile age (Table 5). Blood transfusion required in only 1 case.

The overall success rate of treatment was 94.0%. Table 6 showed result of various treatments. IV antibiotics and analgesic given to patients admitted to hospital and in whom nasal packing was present. Hospital stay ranged 2 to 4 days with an average of 3 days.

4. Discussion

In our study, epistaxis was mostly occurs in the young adults, which is similar to study done by Eziyi et al¹² but contrary to findings by Pallin et al¹³ who found a bimodal age presentation one younger than 10 years and second aged 70-79 years. In present study, males affected more than females, with a male to female ratio of 2.9:1. The present study shows that the most common cause of epistaxis was trauma followed by idiopathic and nasal tumors, which is consistent with other studies in developing countries.¹⁴ Most of our patients with epistaxis from trauma were due to road traffic injury. The frequency of this problem is more in male than female. Varshney and Saxena from India reported that hypertension and arteriosclerosis is the leading cause of epistaxis followed by trauma.¹⁵ The bleeding point if found is cauterized either with silver nitrate or electro cautery. If bleeding site not identified then anterior nasal pack was done with gauze and Soframycin, gloved finger or rarely

merozele when available. Fifty two percent were successfully managed with anterior nasal packs alone.

All patients with nasal packs were given prophylactic antibiotics. Nasal packs were removed after 2 to 3 days. Most patients were discharged after 3rd day off admission. There was no death noted from epistaxis in our study and this is similar to other study.¹⁶

5. Conclusion

Trauma resulting from road traffic accident (RTA) remains the most common etiological factor for epistaxis in our setting. Most cases were successfully managed with conservative (non-surgical) treatment alone such as nasal packing and local cauterization. Non-surgical treatment is still useful to arrest nasal bleeding and it is safe and cost-effective, and surgical intervention should be the last resort. Reducing the incidence of trauma from RTA will reduce the incidence of emergency epistaxis in our centre.

References

- [1] Nnennia CM (2004). Epistaxis in Enugu: A 9 year Review. Nigerian J. Otorhinolaryngol. 1(1):11-14.
- [2] 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.
- [3] Pond F, Sizeland A: Epistaxis. Strategies for management. Aust Fam Physician 2000, 29:933-8.
- [4] Yueng-Hsiang C, Jih-Chin L: Unilateral Epistaxis. New England Journal of Medicine 2009, 361(9):14.
- [5] Ciaran SH, Owain H: Update on management of epistaxis. The West London Medical Journal 2009, 1:33-41.
- [6] Gerald WM (2008). Epistaxis, In: Valerie J Lund (ed.), Scott-Brown's Otorhinolaryngology' Head and Neck Surgery, Seventh Edition, Hodder Arnold. 2(13)126:1596-1607.
- [7] Walker TWM, Macfarlane TV, McGarry GW: The epidemiology and chronobiology of epistaxis: an investigation of Scottish hospital admissions 1995-2004. Clin Otolaryngol 2007, 32:361-5.
- [8] Pope LER, Hobbs CGL: Epistaxis: an update on current management. Postgrad Med J 2005, 81:309-314.
- [9] Nash CM, Field SMB: Epidemiology of Epistaxis in a Canadian Emergency Department. Israeli Journal of Emergency Medicine 2008, 8:24-28.
- [10] Pallin DJ, Chng Y, McKay MP, Emond JA, Pelletier AJ, Camargo CA: Epidemiology of epistaxis in US emergency departments, 1992 to 2001. Ann Emerg Med 2005, 46:77-81.
- [11] Bernius M, Perlin D: Pediatric ear, nose, and throat emergencies. Pediatr Clin North Am 2006, 53:195.
- [12] 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.
- [13] Pallin DJ, Chng Y, McKay MP, Emond JA, Pelletier AJ, Camargo CA: Epidemiology of epistaxis in US emergency departments, 1992 to 2001. Ann Emerg Med 2005, 46:77-81.

- [14] Ijaduola GTA, Okeowo PA: Pattern of epistaxis in the tropics. Cent Afr J Med 1983, 29:77-80.
- [15] Saubrah V, RK Saxena (2005). Epistaxis: A Retrospective clinical study. Indian Journal of Otolaryngology and Head and Neck Surgery 57: 2.
- [16] Urashi R, Raizade RM, Chaturvedi VN (2004). Efficacy of conservative treatment modalities used in epistaxis, Indian J. Otolaryngol. Head Neck Surgery 56(1):20

Table 1: Sex distribution

Male	67 (74.4%)
Female	23 (25.5%)

Table 2: Age distribution

Age	No. of patients	Percentage (%)
0-10	3	3.33
11-20	7	7.77
21-30	18	20
31-40	41	45.5
41-50	13	14.4
51-60	5	5.55
61-70	1	1.11
71-80	2	2.22

Table 3: Causes of epistaxis

Causes of epistaxis	No of patients	Percentage %
Trauma	47	52.22
Idiopathic	24	222.22
Tumors (benign/malignancies)	7	14.44
Hypertension	5	1.11
Inflammatory diseases (chronic rhinosinusitis)	2	4.44
Foreign bodies	3	3.33
Maggots	2	2.22
Blood dyscrasias	0	0

Table 4: location of bleeding

Location of bleeding	No. of patients	Percentage %
Anterior nasal bleed	83	92.2
Posterior nasal bleed	3	3.3
Non identifiable cause	4	4.4

Table 5: Treatment modalities

Treatment modality	No. of patients	percentage
Observation alone	40	44.4
Anterior nasal packing	37	41.1
Posterior nasal packing ± Foley catheter balloon	1	1.11
Local cauterization (electrocautery)	2	2.22
Surgical excision of bleeding intranasal Tumour	7	7.77
More than one procedure	3	3.33

Table 6: Success rates for various treatment modalities

Treatment modality	No. of patients	Patient successfully treated	%
Anterior nasal packing	37	35	94.5
Posterior nasal packing	1	1	100
Local cauterization (electrocautery)	4	3	75
Surgical resection of bleeding nasal tumour	8	8	100