

Original Research Article

CLINICO-ETIOLOGICAL AND DEMOGRAPHIC CHARACTERISTICS OF PATIENTS PRESENTING WITH EPISTAXIS IN EASTERN INDIA

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ABSTRACT

Background: Epistaxis is a common otorhinolaryngologic emergency with diverse etiologies and demographic variations. Understanding the clinical and etiological profile in specific populations aids targeted management and prevention strategies. This study aims to investigate the clinical, etiological, and demographic profiles of patients presenting with epistaxis to understand underlying causes and aid effective management.

Materials and Methods: A prospective observational study was conducted in ENT department among the patients presenting with epistaxis in SCB Medical College and Hospital, a tertiary care centre, Eastern India. Data on demographics, clinical presentation, etiological factors, bleeding site, and management were collected. Majority of the patients were subjected to diagnostic nasal endoscopy (DNE) and findings were recorded and analyzed statistically by using Epi Info software.

Results: The study included 48 patients with a male predominance of 65%. The most affected age group was 21-40 years (39.6%). Local causes were predominant (~66%) and trauma as the leading etiology (~17%), followed by infections (~13%). Hypertension (44%) was the leading systemic etiological factors. Anterior epistaxis was common, with posterior bleeds less frequent. Majority (91.6%) cases were managed conservatively with medical treatment and nasal packing in emergency.

Conclusion: In this study, epistaxis predominantly affected young middle-aged males, with local etiology via trauma and infection among leading cause and hypertension as principal systematic causes. Education programs targeting trauma prevention and hypertension control could significantly reduce epistaxis incidence in this region.

Keywords: Epistaxis, Etiology, Demographic profile, Trauma, Hypertension, Eastern India.

INTRODUCTION

Epistaxis is a frequent complaint in ENT emergencies worldwide. It occurs due to various local and systemic causes, with demographic variations and socio-economic factors. It is estimated that almost 90% of epistaxis cases do not report to any clinical facility, and only the remaining 10% seek medical care.^[1] In spite of that, an Indian study suggests that epistaxis is the most commonly encountered ear,

nose, and throat (ENT) emergency comprising more than 25% of cases.^[2]

According to the site of bleeding, it is categorized into two types – anterior and posterior epistaxis, with the anterior type constituting nearly 90% of cases. Etiology can be local, systemic, or idiopathic, with each broad category having a number of other specific etiologies. It is characterized by bleeding from the nasal cavity, which can range from minor and self-limiting to severe and life-threatening episodes requiring urgent intervention.^[3]

Epistaxis is clinically classified as: Adult or childhood; primary or secondary and anterior or posterior epistaxis. The vascular anatomy of the nasal cavity, particularly the highly vascular Kiesselbach's plexus on the anterior nasal septum, accounts for the predisposition to bleeding. Little's area and Woodruff's plexus are common clinical sites of anterior and posterior epistaxis respectively. Idiopathic causes account for 70–80% cases of epistaxis.^[4,5]

The identifiable causes are classified as local and general causes. Local causes include trauma, infections, foreign bodies, deviated nasal septum, neoplasms. General causes include hypertension, blood dyscrasias, chronic liver disorders, chronic kidney diseases, prolonged use of salicylates or anticoagulant medications.^[6]

Management of patient with epistaxis at any age group begins with resuscitating the patient, establishing the site of bleed, stopping the bleeding, and treatment of the underlying cause. There is no definite protocol for the management of epistaxis, although various treatment methods are available for the management ranging from local pressure, topical vasoconstrictor, nasal packing, cauterization (chemical/electric), to embolisation or ligation of vessels.^[7,8]

In Eastern India, climatic factors, environmental exposures, and regional healthcare dynamics potentially influence the pattern and causes of epistaxis, yet data from this region remain limited. This study aims to fill this gap by providing a comprehensive clinico-etiological and demographic profile of patients presenting with epistaxis at a tertiary care center in Eastern India, to inform better diagnosis, management, and preventive strategies tailored to the local population. This study focuses on a detailed clinico-etiological and demographic evaluation of epistaxis patients in eastern India population.

MATERIALS AND METHODS

Study Design and Area: A prospective observational study was conducted in ENT department, SCB Medical College and Hospital, a tertiary care institute, Eastern India during period between April 2025 to October 2025.

Study population: All patients presenting with epistaxis in emergency department during study period were enrolled.

Inclusion criteria:

- Patients presenting with epistaxis
- Age >5 yrs and both genders
- Giving consent for study

Exclusion criteria:

- Excluding those with history of bleeding disorders
- On anticoagulant therapy unless specified.
- Non cooperative and not giving consent for study

Methodology: Total 48 patients who fulfilled the inclusion and exclusion criteria were enrolled in the study. After that details of presenting complaints, history of present illness (number of bleeding episodes, amount of bleeding, aggravating and relieving factors etc.), past relevant history of hypertension/vascular accidents, risk factor exposure (cocaine snorting), relevant family history, anticoagulant/aspirin or other relevant drug history were noted.

All patients underwent a general examination for vital signs followed by a local examination. Most of the patients were subjected to diagnostic nasal endoscopy (DNE) and findings recorded. Local chemical cautery or bipolar diathermy was done if required. Computed tomography scan and histopathological examination were done in only relevant cases. After the procedure, the patient was kept under observation for the next 48 h. Basic laboratory investigations were advised as indicated. If an underlying cause was identified, then the patient was treated accordingly.

The collected data age, gender, occupation, clinical presentation, bleeding site (anterior/posterior), etiological factors, and treatment modalities were noted and entered in MS Excel version 7.0.1 Epi Info Statistical software was used for descriptive analysis and inferential statistics.

RESULTS

Patient Demographics: Males constituted around 65% of cases; the most affected age group was 21-40 years followed by 41-60 years (27.1%).

Table 1: Demographic Characteristics of Epistaxis Patients

Variables	Sub-category	Frequency (n)	Percentage (%)
Age group	0-20 yrs	5	10.4
	21-40 yrs	19	39.6
	41-60 yrs	13	27.1
	>60 yrs	11	22.9
Gender	Male	31	64.6
	Female	17	35.4

Clinical Presentation: The maximum patients came with duration of nasal bleed of between one day to one week (52.1%) followed by more than one week to 15 days (20.8%), and minimum that is 04 (8.3%)

patients came with duration of nasal bleed more than 15 days.

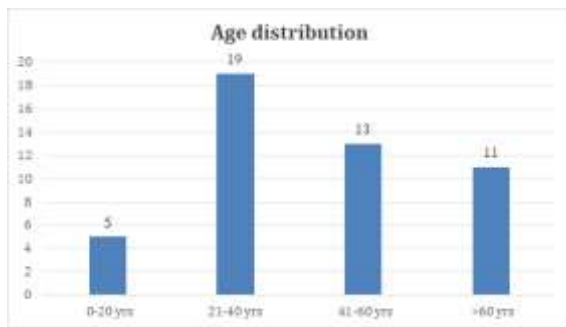


Figure 1: Age distribution

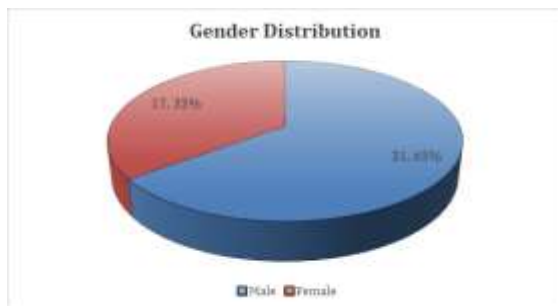


Figure 2: Gender distribution

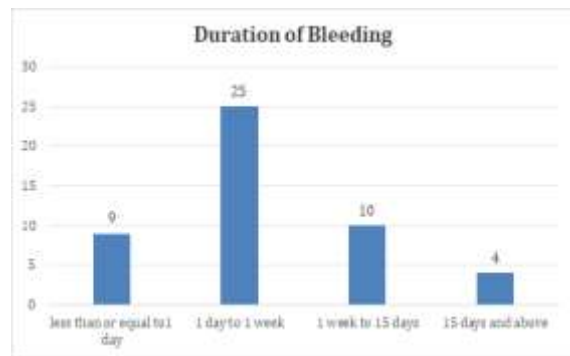


Figure 3: Duration of nasal bleeding in patients

Amount, Type and laterality of bleeding: Out of total 48 patients of epistaxis, 34 (70.8%) had profuse bleeding required immediate care while small or scanty bleeding was found in 14 cases (29.2%). In 29(60.4%) cases bleeding was intermittent in nature. This was not associated with pain among 77.1%. Among total patients, 17 (35.4%) patients had bled from right nostril and 21 (43.8%) had bled from left nostril and 10 from bilateral which was highest i.e.20.8%.

Table 2: Duration of nasal bleeding in patients

Bleeding Since	Frequency	Percentage
less than or equal to 1 day	9	18.8
1 day to 1 week	25	52.1
1 week to 15 days	10	20.8
15 days and above	4	8.3

Table 3: Laterality of Epistaxis in study patients

Variables	Sub-category	Frequency (n)	Percentage (%)
Pain	Painless	11	22.9
	Painful	37	77.1
Amount	Profuse	34	70.8
	Scanty	14	29.2
Type	Continuous	19	39.6
	Intermittent	29	60.4
Laterality	Right	17	35.4
	Left	21	43.8
	Bilateral	10	20.8

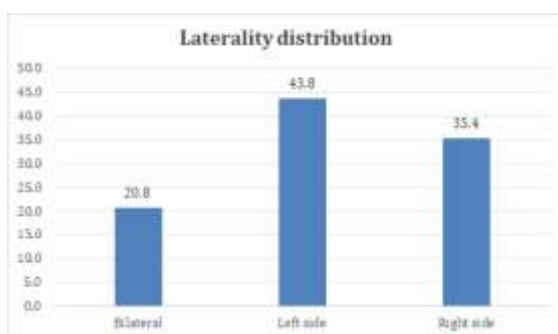


Figure 3: Laterality of Epistaxis in study patients

Etiological Profile: Local causes were predominant (~66%) and trauma as the leading etiology (~17%), followed by infections (~13%) and anatomical abnormalities (~9%). Systemic causes accounted for around 44%, hypertension being the most common systemic factor.

DNE Findings: In patients of epistaxis highest number of patients had normal DNE findings i.e 20 patients (48%) followed by bleeding points in 8 patients (19.5%) and then anatomical abnormalities like deviated nasal septum or spur in 7 patients (17.1%). Nasal mass with or without nasal discharge was seen in 6(14.6%) patients.

Table 4: Etiological Factors of Epistaxis Patients

Etiology	Number of Patients	Percentage (%)
Trauma	8	16.7
Infection	6	12.5
Anatomical Causes	4	8.3
Hypertension	21	43.8
Others	3	6.3
Medications	2	4.2
Idiopathic	4	8.3

Investigation findings:

Table 5: Laboratory findings of study Patients

Variables	Subcategory	Frequency (n)	Percentage	Average	SD
Hameoglobin value (g/dl)	less than 9 or 9	4	8.3	33.33	11.6
	10-12 g/dl	24	50.0		
	12 and above	20	41.7		
TPC (X103 per µl)	less than 150	6	12.5	18.59	11.3
	150-250	10	20.8		
	250 and above	32	66.7		
PT	11-11.9	19	39.6	33.33	29.17
	12-12.9	15	31.3		
	13-13.9	7	14.6		
	14 and above	7	14.6		
INR	less than 1	17	35.4	25	12.5
	1-1.5	29	60.4		
	1.5 and above	2	4.2		
aPTT	20-25	14	29.2	33.33	28.2
	25-30	22	45.8		
	30 and above	12	25.0		

Table 6: DNE findings of study Patients

Findings	Number of Patients	Percentage (%)
Normal	20	48.8
DNS/Spur	7	17.1
Bleeding point	8	19.5
Nasal Mass	6	14.6

Table 7: Management of study patients

Management	Frequency (n)	Percentage (%)
Conservative	18	37.5
Anterior Nasal Pack	26	54.2
Post Nasal Pack	1	2.1
Chemical Cauterization	0	0.0
Electrical Cauterization	3	6.3

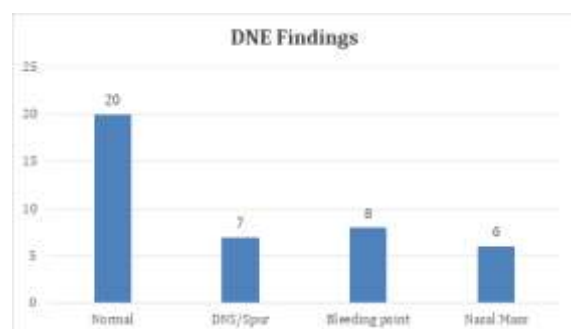


Figure 4: DNE findings of study Patients

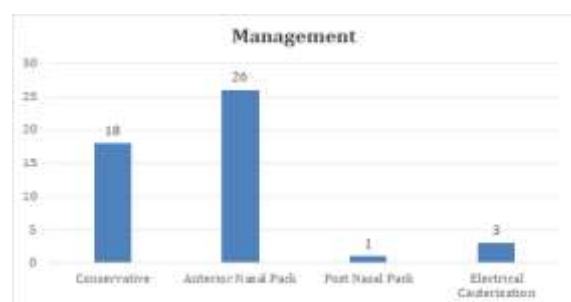


Figure 5: Management of epistaxis of study Patients

Management: Majority (91.6%) cases were managed conservatively with medical treatment and nasal packing in emergency. Anterior nasal bleeding was more common (~55%), with posterior bleeds less frequent but more severe and found in one case. Anterior nasal packing was done in 26(54.2%) cases

and posterior nasal packing was needed in one case. Electrical cauterization was done in 3 cases and surgical intervention was rare.

DISCUSSION

Epistaxis (nosebleed) is a common otolaryngological emergency with diverse etiologies influenced by geographical, demographic, and clinical factors. The present study describes the demographic, clinical profile, and management of 48 epistaxis patients in ENT Department of SCB Medical College and Hospital, tertiary care center Eastern India. This study revealed predominance of local etiologies as trauma and infection. Hypertension as key etiological factors in epistaxis within this region, corroborating findings from other parts of India and developing countries. The male predominance may relate to occupational exposure and behavioral factors. Most cases can be effectively managed conservatively.

A similar findings were observed by Ukawat, L et al,^[9] study which found that maximum number of patients with epistaxis were of age group 21–30 years i.e. 66 (21.71%) with 210 (69.08%) were male and 94 (30.92%) were female. It was found that maximum patients were of nose picking i.e. 113 (37.17%) followed by trauma via accident, assault and fall i.e. 77 (25.33%), followed by hypertension i.e. 49.

According to Ruhela, S et al,^[10] study in North India, males formed majority of the epistaxis patients

(68.27%) as compared to female patients (31.73%) similar to our findings while in contrast most common affected age group was of 51–70 years while Adegbiyi et al,^[11] had observed majority of epistaxis patients in 1–10 years age group. The age and gender variations of patients may be explained by the fact by different regional diversities and sample distribution. In Ruhela, S et al,^[10] study similar to our findings, Local causes were observed to be more common (50.96%) among which trauma was the predominant cause (23.08%). Systemic causes formed 37.58% of cases, out of which hypertension was the commonest cause in this study. Similarly in various studies in other parts of India have identified trauma, hypertension, and idiopathic causes as predominant etiologies, often with male predominance and peak occurrence in the younger and elderly populations.^[12]

Similar to our study, non-surgical measures were most commonly employed treatment modality (85.58%) among which medical management was done in most patients. While in study by Basheer et al,^[13] had reported hospitalization need in as many as 90.1% of patients. However, Bui et al,^[14] reported hospitalization need in only 23% of patients, whereas Adegbiyi et al,^[11] has reported hospitalization need in 37.5% of patients. Most of the contemporary studies report of a favorable outcome and no in-hospital mortality.^[15]

This present study highlights that epistaxis in Eastern India predominantly affects young males, with local cause predominantly trauma. The young adults were diagnosed as hypertensive because of manifestation of epistaxis, showing hypertension as being principal etiologies systematically, consistent with findings of other similar studies. It emphasizes the importance of early diagnosis and targeted management based on identified causes, thus reducing morbidity and healthcare burden.

Although it has some limitations of small hospital based sample, which may limit generalization of findings across diverse geographic and socioeconomic subgroups. Follow-up duration was relatively shorter and did not assess long-term outcomes. Furthermore, some systemic causes such as bleeding disorders may have been underdiagnosed due to limited availability of comprehensive investigations.

CONCLUSION

In this study, epistaxis predominantly affected young middle-aged males, with local etiology via trauma and infection among leading cause and hypertension as principal systematic causes. Awareness of these

profiles is critical to effective management and can help reduce morbidity. Further multi-center, large-scale studies are needed to validate these findings across different demographic and socioeconomic groups. Incorporating advanced diagnostic tools and long-term follow-up can provide deeper insights into recurrent cases and underlying systemic disorders. Education programs targeting trauma prevention and hypertension control could significantly reduce epistaxis incidence in this region.

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