"A PROSPECTIVE STUDY ON ETIOLOGICAL FACTORS OF EPISTAXIS IN ALL AGE GROUP AND THEIR RESPECTIVE MANAGEMENT IN A TERTIARY CARE HOSPITAL"

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ABSTRACT:

BACKGROUND:

Nosebleeds, or epistaxis, are a frequent emergency in the ear, nose, and throat (ENT) department.Epistaxis can arise from both local and systemic factors. Locally, bleeding can occur within the nasal cavity, either in the anterior or posterior region. The most common site of anterior epistaxis is Kiesselbach's plexus.Epistaxis management can be complex and requires a thoughtful approach, with most cases being successfully treated through conservative measures, while others may necessitate surgical intervention.

MATERIALS AND METHODS:

A hospital-basedprospective observational study was conducted in the Department of Otorhinolaryngology, Assam Medical College and Hospital for one year (1st April 2023 to 31st March 2024) in patients presenting with epistaxis in Department of Otorhinolaryngology, AMCH.

RESULTS:

Most of the patients belonged to the age group of 41-50 years. Male: female ratio was 2.55%. Hypertension was the leading cause of nasal bleed in 28.125% of cases. This was followed by trauma in 25% of cases. Conservative management was the most common modality of treatment.

CONCLUSION:

This study provides insights into effective epistaxis management, emphasizing a tailored approach based on severity and cause, with conservative measures suitable for most cases and surgery reserved for a few.

KEYWORDS: Epistaxis; Nasal packing, Trauma, Surgical intervention,Etiology

INTRODUCTION:

Nosebleeds, or epistaxis, are a frequent emergency in the ear, nose, and throat (ENT) department. Although its true incidence is yet unknown worldwide, 60% of people are predicted to experience epistaxis at least once in their lives, with 6% of those individuals seeking medical assistance.[1,2]

Epistaxis can be categorized into two main types: anterior and posterior. Anterior nosebleeds, which are usually self-limiting and short-lived, typically originate from Kiesselbach's plexus, a network of blood vessels located in the antero-inferior part of the nasal septum. In contrast, posterior nosebleeds, which are often more severe, arise from Woodruff's plexus, a group of blood vessels in the back of the nasal cavity that receives its blood supply from branches of the Sphenopalatine artery.[3]

Epistaxis can be triggered by a combination of local and systemic factors. To accurately diagnose the underlying cause of epistaxis, a thorough evaluation is necessary, includingA detailed medical history, Physical examination and Laboratory tests. This comprehensive approach helps identify potential local causes, such asTrauma or injury, Deviated or perforated nasal septum, Foreign objects in the nasal cavity, Tumours or aneurysmsAs well as systemic factors, includingCardiovascular disease, Blood disorders (dyscrasias), Genetic conditions (e.g., Osler-Weber-Rendu syndrome), Idiopathic (unknown) causes. By considering both local and systemic factors, healthcare providers can determine the underlying cause of epistaxis and develop an effective treatment plan.[1]

The treatment of epistaxis involves a range of modalities, from conservative measures to surgical interventions. In severe cases, initial resuscitation is followed by a comprehensive assessment. Treatment options includeNasal pinching, Nasal packing (anterior and posterior), chemical cautery and Surgical ligation of the bleeding vessel (as needed). While traditional methods involve ligating the maxillary or external carotid arteries,contemporary practice favours endoscopic sphenopalatine artery ligation using a Hopkins rod telescope, offering improved outcomes and a higher success rate.[4]

Our study investigates the causes and management of epistaxis in patients, to inform best practices and improve treatment outcomes.

MATERIALS AND METHODS:

1. PLACE OF STUDY: Department of Otorhinolaryngology, Assam Medical College and Hospital.
2. DURATION OF STUDY: One year (1ST April 2023 to 31st March 2024)
3. STUDY DESIGN: Hospital-based Prospective observational study.
4. STUDY POPULATION: Patients presenting with epistaxis in the Department of Otorhinolaryngology, AMCH.
5. SAMPLE SIZE: 160

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Statistical methods were used to analyze correlations between findings and the management outcomes and results were analysed by means and standard deviation for quantitative variables and percentages for categorical variables.

INCLUSION CRITERIA- Patientsofall age groups presenting with epistaxis and patients admitted for other reasons in whom epistaxis developed.
EXCLUSIONCRITERIA- As long as he or she met the above criteria, no patient was excluded from the study

RESULTS:

A total of 160 patients were included in our study out of which 115 (71.87%) were male and 45 (28.13%) were female with a male-female ratio is 2.5:1.The Age range was from 5 to 78 years. Peak presentation inthe 41 to 50 years age group was 40 (25%), 51 to 60 years32 (20%), 31 to 40 years 28 (17.5%), 61 to 70 years 22(13.75%), 21 to 30 years 12 (7.5%), 11 to 20 years 11 (6.875%), 0 to 10 years 8 (5%), and 71 to 80 years 07 (4.375%)

TABLE 1: Age distribution of cases.

Age in years	No. of cases	Percentage
0-10	8	5
11-20	11	6.875
21-30	12	7.5
31-40	28	17.5
41-50	40	25
51-60	32	20
61-70	22	13.75
71-80	07	4.375
Total	160	100

TABLE 2: Sex distribution of cases.

Sex	No of cases	Percentage
Males	115	71.875
Females	45	28.125
Total	160	100

TABLE 3: Etiological factors of Epistaxis.

Causes	No of cases	Percentage
Idiopathic	16	10
Trauma	40	25
Hypertension	45	28.125
DNS with spur	18	11.25
Tumour (JNA)	07	4.375
Liver disorder	11	6.875
Blood dyscrasia	10	6.25
Foreign body	13	8.125
Total	160	100

TABLE 5: Types of Epistaxis.

Types of epistaxis	No	Percentage
Anterior	138	86.25
Posterior	22	13.75

Our study revealed that the primary causes of epistaxis were:Hypertension (28.125%): the leading cause, affecting 45 patients, Trauma (25%): the second most common cause, impacting 40 patients, Deviated Nasal Septum (DNS) with spur (11.25%): affecting 18 patients, Idiopathic (10%): no identifiable cause, seen in 16 patients, Liver disorder (6.875%): affecting 11 patients, Foreign body (8.125%): found in 13 patients, Bleeding disorder (6.25%): affecting 10 patients, Tumour (JNA) (4.375%): the least common cause, seen in 7 patients. These findings highlight the importance of addressing hypertension and trauma as the primary contributors to epistaxis.

TABLE 4:Treatment of Epistaxis

Non surgical			Surgical		
	No. of cases	Percentage		No of cases	Percentage
Medical management	65	40.625	Endoscopic cauterisation	12	7.5
Anterior nasal packing	37	23.125	Endoscopic arterial ligation	7	4.375
Posterior nasal packing	4	2.5	SMR	18	11.25
			Nasal bone reduction	10	6.25
			Trans-palatine approach for juvenile angiofibroma	7	4.375
Total	106	66.25	Total	54	33.75

In our study of 160 patients with epistaxis, the majority (66.25%) were successfully managed with conservative treatments, while 33.75% required surgical interventions. Conservative management involved various medications, includingAnti-hypertensives, Coagulants, Platelet activators, Ethamsylate, Tranexamic acid, Epsilon amino caproic acid, Vitamin K administration, and Oral vitamin C tablets. In terms of procedures, anterior nasal packing was performed in 23.125% of cases (37 patients), and posterior nasal packing was necessary in 2.5% of cases (4 patients).

Surgical interventions were necessary for 54 patients, with the following procedures performed:Submucous resection (SMR): 18 cases (11.25%), Endoscopic cauterization: 12 cases (7.5%), Nasal bone reduction: 10 cases (6.25%), Endoscopic arterial ligation: 7 cases (4.375%), Trans-palatine approach for Juvenile Nasal Angiofibroma (JNA): 7 cases (4.375%).

DISCUSSION:

The age distribution of patients in our study showed a peak in the 41-50-year range, accounting for 25% of cases. This finding aligns with the results of a previous study by SaurabhVarsheny et al,[1] which reported a similar age distribution, with 36% of patients falling within the same age range.

Our study found a significant male predominance, with 71.875% of patients being male, which is consistent with the findings of Moran et al[5], who reported that 73.6% of patients with epistaxis were male. This similarity suggests a common trend in the gender distribution of patients experiencing epistaxis, with males being more frequently affected.

Our study identified hypertension as the leading cause of epistaxis, accounting for 28.125% of cases, which aligns with the findings of Fatakiaet al.[6], who also reported hypertension as the most common systemic cause of nasal bleeding.

Our study found that the majority of cases (86.25%) presented with anterior epistaxis, which is consistent with the findings of Tabasuumet al.[7], who also reported anterior epistaxis as the most common type.

Our study revealed that conservative management was the most successful treatment approach, employed in 66.25% of cases, with a significant 40.625% of patients responding positively to medication alone. This finding aligns with the results of Adoga AA et al.[8], who also reported that conservative management was effective in 84.8% of cases, highlighting the efficacy of non-surgical interventions in managing epistaxis

Incidence was seen in winter and dry/hot months in most idiopathic epistaxis casesin our studies.Similar studies were seen in McGarry[9] Bhatia andVarughese[10] with increased incidence due to high windvelocity and dryness, favouring crust formation in thenasal cavity.

Our study found that septal abnormalities, such as DNS, were not a primary cause of epistaxis in most cases, with only 18 patients (11.5%) having DNS as the exclusive cause. To accurately diagnose and manage epistaxis, we employed a range of diagnostic tools, including Basic blood tests and nasal endoscopy for all patients, Nasal bone X-rays for patients with traumatic injury, CT scans of the nose and PNS for patients with suspected malignancy, older adults, adolescent males with potential JNA.

CONCLUSION:

Epistaxis, or nosebleeds, is a frequent emergency in the field of otolaryngology. The leading causes are hypertension, followed by nasal trauma and idiopathic. A thorough medical history and nasal examination are crucial for accurate diagnosis. Treatment is tailored to each case, depending on the severity and location of the bleeding. Fortunately, most cases can be effectively managed without surgery, using non-invasive methods.

Contribution of authors:

1. All authors have contributed
2. The article is original with the authors and does not infringe any copyright or violate any other right of any third party.
3. The article has not been published (whole or in part) elsewhere in any form, except as provided herein.
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