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ORIGINAL ARTICLE

Frequency of Etiological Factors Involved in patient of Epistaxis presenting at D.G Khan Hospital, D.G Khan

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ABSTRACT

Objective: To determine the frequency of etiological factors involved in patient of epistaxis presenting at D.G Khan Hospital, D.G Khan.

Study design: Cross sectional study

Place and duration: Department of ENT, D.G Khan Hospital, D.G Khan from January 2022 to September 2022.

Methodology: Total 167 patients with acute episode of nasal bleeding, either male or female, age between 10-60 years were recruited and etiological factors of episode were evaluated.

Results: Total 167 patients with Epistaxis were selected. Mean age was 39.03 ± 14.97 years. Age range was 10-60 years, Males were 103 (62%) while females were 64 (38%). The commonest cause of epistaxis was idiopathic 86 (51.5%) cases, followed by nasal trauma 39 (23.4%), Nasopharyngeal carcinoma 11 (6.6%), sinusitis 9 (5.4%), tumors 5 (3%) bleeding disorder 8 (4.8%) and hypertension in 9 (5.4%) patients.

Practical implication: Understanding the frequency of etiological factors involved in patients with epistaxis is a critical objective. The practical implications of this research could have significant benefits for the community:

1. Improved Clinical Practice: By determining the common causes of epistaxis, healthcare professionals can improve their diagnostic approach, providing more accurate and timely treatment, ultimately leading to better patient outcomes.
2. Early Intervention and Prevention: Understanding the etiological factors may enable the development of preventative strategies or early intervention approaches, potentially reducing the overall incidence of epistaxis.
3. Education and Awareness: This study could lead to increased public awareness about the common causes of epistaxis, encouraging individuals to take necessary precautions and seek early medical attention when needed.
4. Resource Allocation: Health resources could be better distributed based on the findings of this study, ensuring that facilities and personnel are adequately equipped to handle the most common causes of epistaxis.

Overall, this study could substantially contribute to the community's overall health by enhancing the management and understanding of epistaxis.

Conclusion: Results was present study showed that most common etiological factor of epistaxis was Idiopathic and nasal trauma was second in number. In most of cases, right nasal cavity was involved. Male were more victim of epistaxis as compared to females and epistaxis was commonly seen in 4th and 5th decade of life.

Keywords: Epistaxis, Nosebleed, Idiopathic, etiology, nasal tumor, hypertension, nosebleed

INTRODUCTION

Epistaxis is caused by bleeding from the nasal cavity, which is lined with delicate blood vessels. The nasal septum is the most common site of bleeding due to its high vascularity. The anterior portion of the nasal septum is particularly prone to bleeding due to its location near the front of the nose and susceptibility to minor trauma.[1] Globally it occurs in about 60% of ENT emergency patients. There are different etiologies that can cause epistaxis, It is more common in males and can be caused by local trauma(44.23%), high blood pressure, coagulopathy, nasal tumors, and infections.[2-3] While non-traumatic occurs in mostly in young males only.[4] It occurs more in the 1st and 2nd decades of life and then increases more after the 4th decade.[5] Epistaxis is linked to hypertension. Hypertension weakens nasal blood vessels, causing nosebleeds.[6-8] 10–20% of nosebleeds are idiopathic.[9-11] Due to nasal blood vessel thinning, older persons may develop nosebleeds. cold, dry regions and low humidity enhance epistaxis risk. Smoking and drinking can also cause nosebleeds.[12-13] They also talk about the different ways epistaxis can be treated, including less invasive methods like pressure and cautery and more invasive methods like embolization and surgery.[14-17]

According to a study by Badran et al. (2018)[18], initial management usually involves conservative measures, such as applying direct pressure, using topical vasoconstrictors, and cauterizing the bleeding vessel if accessible and visible. Additionally, for anterior epistaxis, nasal packing is often used as a first-line treatment when initial conservative measures fail.

More advanced and severe cases of epistaxis, particularly posterior epistaxis, may require more invasive procedures. A study by Chang et al. (2019)[19] discussed the use of endoscopic surgical techniques, arterial ligation, and embolization as treatments for severe or refractory epistaxis. The choice between these approaches depends on several factors, including the patient's overall health status, the availability of resources and expertise, and the potential risks and benefits of each procedure.

Avoiding risk factors and addressing medical issues can help prevent nosebleeds. Avoiding nose picking, wearing sports clothing, and treating medical issues can also minimize nosebleeds. Nosebleeds can be treated and prevented by finding the cause.

Epistaxis treatment depends on etiology and severity. Local trauma bleeding can be stopped by pressure or nasal packing. If the nosebleed is caused by hypertension or coagulopathy, the underlying condition must be managed. In severe circumstances, cauterization or embolization may stop bleeding.

This study examines epistaxis causes in our tertiary care hospital. Healthcare practitioners can improve epistaxis prevention, diagnosis, and treatment by tracking these causes.

MATERIAL AND METHODS

This cross sectional study was conducted at Department of ENT, D.G Khan Hospital, D.G Khan from January 2022 to September 2022. After approval from ethical review committee, total 167 patients with acute episode of nasal bleeding, either male or female, age between 10-60 years were recruited. Patients with age

<10 years, with history of drugs affecting blood hemostasis. e.g., anticoagulants like asprin, heparin, warfarin were excluded from the study.

Firstly patients with ongoing nose bleeding were given first aid to stabilize them. Evaluation of all stable patients included detailed history taking on sociodemographic features, aetiological factors, past medical and surgical history of epistaxis. Thorough clinical examination, anterior rhinoscopy and rigid nasoendoscopy were performed where indicated. Other head and neck with general examination were performed on each patient.

Data analysis was performed by using SPSS version 16. Data was presented in form of mean (numerical data) and frequencies and percentages for categorical data.

RESULTS

Total 167 patients with Epistaxis were selected. Mean age was 39.03 ± 14.97 years.

Age range was 10-60 years and 5 age groups were created with 10 years interval. In group 10-20 years, there were 27 (16.2%) patients followed by in age group 21-30 years 18 (10.8%) patients, in age group 31-40 years 34 (20.4%) patients, in age group 41-50 years 40 (24.0%) patients and in age group 51-60 years, there were 48 (28.7%) patients. (Table 1)

Males were 103 (62%) while females were 64 (38%). (Fig. 1)

Right nasal cavity was involved in 70 (42%) patients, left in 74 (44%) patients while both nasal cavities were involved in 23 (14%) patients. (Fig. 2)

Table 1: Distribution according to age

Age	Frequency	Percent
10-20 years	27	16.2
21-30 years	18	10.8
31-40 years	34	20.4
41-50 years	40	24.0
51-60 years	48	28.7
Total	167	100.0

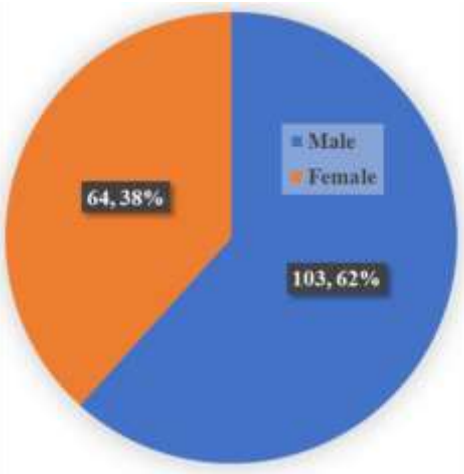

Fig. 1: Gender distribution

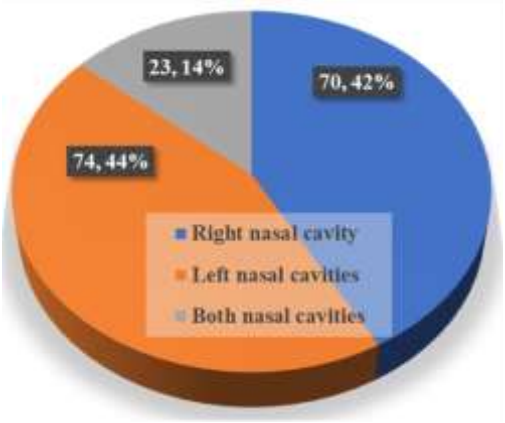

Fig. 2: Side involvement

Table 2: Aetiological factors of epistaxis

Factors	Frequency	Percent
Idiopathic causes	86	51.5
Nasal trauma	39	23.4
Nasopharyngeal carcinoma	11	6.6
Sinusitis	9	5.4
Tumors	5	3.0
Bleeding disorders	8	4.8
Hypertension	9	5.4
Total	167	100.0

The commonest cause of epistaxis was idiopathic 86 (51.5%) cases, followed by nasal trauma 39 (23.4%), Nasopharyngeal carcinoma 11 (6.6%), sinusitis 9 (5.4%), tumors 5 (3%) bleeding disorder 8 (4.8%) and hypertension in 9 (5.4%) patients. (Table 2)

The analysis of the association between different age groups and etiological factors of epistaxis reveals that the most common cause across all age groups was idiopathic, ranging from 45.8% to 58.8%. Nasal trauma was the second most common cause across all age groups. Hypertension, sinusitis, and nasal pharyngeal carcinoma were less common causes. The distribution of causes across the age groups was not statistically significant, as indicated by a p-value of 0.516. (Table 3)

As for the association of etiological factors with gender, idiopathic causes were again the most common, accounting for 51.5% in males and 51.6% in females. Nasal trauma was the second most common cause in both genders, with a slightly higher prevalence in males (26.2%) than females (18.8%). The other causes were less prevalent and had a fairly similar distribution among males and females. The p-value of 0.532 indicates no statistically significant difference in the distribution of causes between males and females. (Table 4)

Table 3: Association of aetiological factors with different age groups

Age group	Aetiological factors							Total
	Idiopathic causes	Nasal trauma	Nasopharyngeal carcinoma	Sinusitis	Tumors	Bleeding disorders	Hypertension	
10-20 years	15 (55.6%)	6 (22.2%)	0	2 (7.4%)	0	1 (3.7%)	3 (11.1%)	27 (16.17%)
21-30 years	9 (50.0%)	5 (27.8%)	1 (5.6%)	1 (5.6%)	0	1 (5.6%)	1 (5.6%)	18 (10.78%)
31-40 years	20 (58.8%)	7 (20.6%)	2 (5.9%)	2 (5.9%)	1 (2.9%)	0	2 (5.9%)	34 (20.36%)
41-50 years	20 (50.0%)	13 (32.5%)	4 (10.0%)	2 (5.0%)	1 (2.5%)	0	0	40 (23.95%)
51-60 years	22 (45.8%)	8 (16.7%)	4 (8.3%)	2 (4.2%)	3 (6.3%)	6 (12.5%)	3 (6.3%)	48 (28.74%)
Total	86 (51.5%)	39 (23.4%)	11 (6.6%)	9 (5.4%)	5 (3.0%)	8 (4.8%)	9 (5.4%)	167

P value = 0.516

Table 4: Association of aetiological factors with Gender

Gender	Aetiological factors							Total
	Idiopathic causes	Nasal trauma	Nasopharyngeal carcinoma	Sinusitis	Tumors	Bleeding disorders	Hypertension	
Male	53 51.5%	27 26.2%	6 5.8%	6 5.8%	1 1.0%	5 4.9%	5 4.9%	103 61.68%
Female	33 51.6%	12 18.8%	5 7.8%	3 4.7%	4 6.3%	3 4.7%	4 6.3%	64 38.32%
Total	86 51.5%	39 23.4%	11 6.6%	9 5.4%	5 3.0%	8 4.8%	9 5.4%	167

P value = 0.532

DISCUSSION

Epistaxis is one of the commonest emergencies that are managed by the ENT departments almost on daily basis.[20] Prevalence of Epistaxis is about 10 to 12%, generally associated with predisposing factors such as trauma, rhinosinusitis, hypertension and coagulopathy.[21] It is relatively benign, but sometimes it can produce serious, life-threatening situations. Up to 60% of the population is estimated to have had at least one episode of epistaxis at some point in their lives.[22]

This study was planned with aim to determine the frequency of etiological factors involved in patient of epistaxis presenting at D.G Khan Hospital, D.G Khan. Total 167 patients with Epistaxis were selected, mean age was 39.03 ± 14.97 years.

In study of Shrestha I et al[21] mean was 33.4 ± 2.17 years. During study period total 487 patients of epistaxis were evaluated for etiological factors. In their study trauma was most common (33.3%), followed by hypertension in 27.3%, Idiopathic 12.9%, rhinosinusitis 12.9% and tumors 4.3% patients.

In study of Adegbiji WA et al,[24] total 176 patients had epistaxis, the main local causes of epistaxis were trauma 29.5%, infective rhinosinusitis 18.8% and sinonasal tumours 12.5%. Bui R et al[25] reviewed 100 patients of epistaxis during study period. They found causes of epistaxis: Idiopathic as 27%, Hypertension 19%, Trauma 26% and Tumor 3%. In study of Kumar KD et al,[26] total 73 patients were evaluated for causes of epistaxis. Idiopathic cause was seen in 19.18% patients followed by trauma in 35.62% patients, Hypertension in 9.59% patients, sinus infection in 12.3% patients, bleeding disorder in 4.11% patients, and Benign tumor in 1.37% patients. In study of Pandey A et al,[27] total 45 patients of epistaxis were evaluated for causes of epistaxis. Trauma to nose caused epistaxis in 31.11%, mostly accidental traumas with 3 (6.67%) cases of epistaxis digitorum. Hypertension accounted for 13.33% of cases.

A study by Ruhela S et al[28] encompassed a total of 104 participants experiencing epistaxis, with no restrictions on age or gender. Males constituted the majority of the patient population (68.27%), outnumbering females (31.73%). The age group most frequently affected was 51-70 years. Notably, a significant statistical correlation was observed ($p < 0.05$) between the age group of 51-60 years and the increased incidence of epistaxis during the winter season. Local factors were identified as the leading cause (50.96%) of epistaxis, with trauma being the most prevalent (23.08%). Meanwhile, systemic causes were responsible for 37.58% of the cases, with hypertension being the most recurrent cause among them. The predominant treatment approach was non-surgical (85.58%), with the majority of patients undergoing medical management.

In the research conducted by Islam R and colleagues,[1] they examined a total of 104 patients. They categorized the causes of epistaxis into traumatic and non-traumatic. Traumatic epistaxis was found in 44.23% of the patients, whereas non-traumatic epistaxis was found in 55.77% of the cases. This study saw a higher incidence in males, with 71.15% of the patients being male and 28.85% female, resulting in a male to female ratio of 2.47:1. The majority of the patients were in their twenties (21.15%), followed by those in their sixties (19.23%) and thirties (17.31%). The authors noted that trauma (44.23%) was the leading cause of epistaxis, trailed by idiopathic causes (25%) and hypertension (17.31%). In patients with traumatic epistaxis, the most common symptoms were local pain (41.31%), nasal obstruction (13.04%), nasal deformity (17.39%), and other associated injuries (13.04%).

In one study Rao JS and colleagues[29] observed a higher prevalence of epistaxis in males, with a male to female ratio of 1.9:1. The most common age group affected was in the first and second decades of life, with a notable increase starting from the fourth decade. This older group accounted for nearly 60% of all cases. The most frequent cause of epistaxis was identified as trauma, accounting for 42% of cases, while hypertension was the second most common, contributing to 24% of instances. Anterior nasal bleeding was seen in 72% of the patients.

CONCLUSION

Results was present study showed that most common etiological factor of epistaxis was Idiopathic and nasal trauma was second in number. In most of cases, right nasal cavity was involved. Male were more victim of epistaxis as compared to females and epistaxis was commonly seen in 4th and 5th decade of life.

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