

Original Research Article

Analysis of risk factors in patients admitted with epistaxis

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ABSTRACT

Background: Epistaxis can be classified into anterior and posterior epistaxis. All bleeding occurs as a result of disruption of the intact nasal mucosa, whether due to trauma, inflammation, or neoplasm. Management depends on the severity of the bleeding and its underlying cause.

Methods: This study was done in department of otorhinolaryngology in a tertiary care centre from September 2018 to December 2020. A total of 143 patients were studied. All patients admitted in our department as a case of epistaxis were analysed for the risk factors present in them which could be the cause of epistaxis.

Results: In our study it was seen the risk factor involved in majority of patients was hypertension (70%), followed closely by diabetes mellitus and deranged coagulogram (65%). Chronic kidney disease was an associated risk factor in 64% of patients. All these factors cause microangiopathies which in turn lead to bleeding.

Conclusions: The current study can be taken as indirect evidence that while raised blood pressure is seen in patients with severe epistaxis but in general the diseases associated with microangiopathies.

Keywords: Epistaxis, Vasculopathy, Microangiopathies

INTRODUCTION

Epistaxis by definition is 'nasal bleed' due to any cause. It can be classified into two types: anterior epistaxis and posterior epistaxis. Anterior bleed is more common than the posterior bleed 90% of patients bleed via Kiesselbach's plexus (also known as little's area) on the anterior nasal septum.¹ The lifetime prevalence of epistaxis is approximately 60% and 6-10% of the affected persons need medical care.² All bleeding occurs due to disruption of the intact nasal mucosa, due to any cause like trauma, inflammation, or neoplasm. Various causes of trauma to the nasal mucosa are nose picking, foreign body insertion, desiccation due to breathing poorly humidified air (common in winter months), cocaine snorting, and direct blunt trauma. Posterior epistaxis from the posterior or superior nasal cavity from the Woodruff plexus, which is a vascular network found in the lateral wall of the nasal cavity. Posterior epistaxis is more common in patients who

have some comorbidities like patients on anticoagulants, patients who are hypertensive, and patients with underlying blood dyscrasia or vascular abnormalities. In the older patient, as bleeding tends to be more posteriorly is more difficult to control as compared to young people in whom epistaxis is mostly anterior. Management will depend on the various underlying medical disorders and severity of the bleeding. Posterior epistaxis typically occurs along the nasal septum or lateral nasal wall, and originates from branches of the internal maxillary, sphenopalatine, and descending palatine arteries.^{3,4} The posterior ethmoid artery provides a small contribution.⁴ Because hemostasis is more difficult to achieve with posterior bleeding, management is guided depending on whether the bleeding is anterior or posterior.⁵ Patients with epistaxis are managed in a step wise manner. First simple manual pinching may be used to stop the bleeding or application of oxymetazoline or epinephrine 1:1000 may be useful.^{6,7} If compressive therapy is inadequate then nasal packing is the next option.

Traditional nasal packing involves placing gauze impregnated with petroleum jelly into the base of the nasal cavity, and layering until the nares are completely compressed.⁸ Rebleeding after anterior bleeding occurs in about 15% of patients.⁹ Nasal tampons and nasal balloon packing may be easier to use.¹⁰ In case of posterior bleed posterior packing is done.

METHODS

This study was done in department of otorhinolaryngology in a tertiary care Centre from September 2018 to December 2020. A total of 143 patients were studied using simple random sampling method. All patients admitted in our department as a case of epistaxis were evaluated for the analysis of risk factors present in them. Patients admitted for epistaxis were recurrent cases of epistaxis who had under gone several anterior nasal packings (2 or more packings within 20-day period). All patients in whom posterior nasal packing was done were admitted. All these patients were evaluated for the associated risk factors. Patients who were managed on outpatient basis were excluded in the study. On admission after proper resuscitation and management of patients using anterior or posterior nasal packing, base line investigations were sent which included complete blood cell counts, kidney function tests, liver function tests, electrocardiogram, chest X-ray, prothrombin time, APTT and INR. Blood transfusion was given as per requirement. All patients were asked for any comorbidities. Special attention was given if patients were on any medications like anticoagulant drugs. Nasal endoscopic examination was done in all patients to rule out any nasal spur or mass. Data was studied using SPSS software.

RESULTS

It was seen that the majority of patients were in the age group of 46- 65 years followed by age group of >65 years (Table 1). Majority of patients were males (60.8%) as compared to that of females (39.1%, Table 2). In our study (Table 3) it was seen the risk factor involved in majority of patients was hypertension (70%), followed closely by diabetes mellitus and deranged coagulogram (65%). Chronic kidney disease was an associated risk factor in 64% of patients followed by post nasal spur in 58% of patients. Out of 17 patients in age group of 10 to 25 years 11 patients were having angiofibroma, 4 were having chronic kidney disease while 2 patients were having deranged coagulogram. Majority of these risk factors are known to cause microangiopathies which in turn leads to epistaxis.

Table 1: Age distribution.

Age (years)	Number	Percentage (%)
10-25	17	11.8
26-45	33	23
46-65	50	34.9
>65	43	30
Total	143	100

Majority of patients were in the age group of 46-65 years followed by age group of >65 years.

Table 2: Sex distribution.

Sex	Number	Percentage (%)
Male	87	60.8
Female	56	39.1

Majority of patients were males (60.8%) as compared to that of females.

Table 3: Risk factors.

Risk	Number	Percentage (%)
Deranged coagulogram	93	65
Diabetes mellitus	92	65
Hypertension	100	70
Cardiovascular diseases	86	60
Chronic kidney disease	91	64
Post nasal spur	83	58
Angiofibroma	11	7.6
Sinonasal malignancies	1	0.6

Majority of these risk factors are known to cause microangiopathies which in turn leads to epistaxis.

DISCUSSION

This study was done in a tertiary care centre to analyse the risk factors associated with epistaxis. In our study we found that the majority of patients were having hypertension (70%). In a study done by Herkner et al, it was found that patients with epistaxis had significantly higher blood pressure values compared with those of control patients (systolic blood pressure 161±30 versus 144±22 mmHg, $p<0.001$, diastolic blood pressure 84±19 versus 75±15 mmHg, $p<0.001$).¹¹ Also in a study done by Isezuo et al it was seen that compared to the controls, the epistaxis had significantly higher blood pressures: (146.1±40.7 mmHg versus 123.2±16.3 mmHg systolic, $p=0.001$), and (91.3±24.8 mmHg versus 78.2±12.8 mmHg diastolic, $p=0.001$), and higher proportions of patients with previous history of hypertension (32.3% versus 7.9%, $p<0.001$) and family history of hypertension (12.9% versus 2.6%, $p<0.02$).¹² Byun H et al in his study found that among the 35 749 patients in the hypertension cohort the incidence rate (IR) of epistaxis was 32.97 per 10 000 persons and among the 35,749 individuals in the comparison cohort, the IR of epistaxis was 22.76 per 10 000 persons.¹³ In a study done by Abrisht et al, it was found that diabetes mellitus may induce atherosclerotic changes in the nasal vessels, making them friable and more at risk for bleeding.¹⁴ In our study also a vast majority patients were having diabetes mellitus and could be considered as

an underestimated risk factor for epistaxis. In a study done by Parajuli et al it was seen that total of 84 patients had epistaxis, 52 were males and 32 were females.¹⁵ The cause of epistaxis was attributed to hypertension in (27.38%), and coagulopathy in (8.33%) of patients. In our study 65% of patients were having coagulopathy. The clinical manifestations of platelet dysfunction in patients with ERSD primarily include mucocutaneous bleeding, such as epistaxis, and easy bruising of the skin explained by platelet dysfunction.¹⁵ In our study 64% of patients had chronic renal disease. 58% of patients in our study had post nasal spur which caused recurrent trauma and recurrent epistaxis. These patients had to undergo septoplasty as the treatment modality. 7.5% of patients (young boys) who presented to the department with profuse bleeding were having angiofibroma. All the risk factors seen in our study as a cause of epistaxis is a cause of vasculopathy which we can attribute to epistaxis.

CONCLUSION

All patients attending to the emergency with recurrent epistaxis should be worked up and treated for any associated risk factor. The current study can be taken as indirect evidence that while raised blood pressure is seen in patients with severe epistaxis but in general the diseases associated with microangiopathies are the one which make control of epistaxis bothersome in OPD setting resulting in need for management as inpatient and hence the high-risk group identification can greatly aid in treatment approach. Limitation of the study was only inpatient patients were evaluated.

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