

# Aetiology of Epistaxis: A Retrospective Study of 87 cases at Bolan Medical Complex Hospital, Quetta

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## ABSTRACT

**Objective:** To objective of this study was to describe the aetiology of epistaxis.

**Study Design:** Retrospective, descriptive study.

**Place and Duration of Study:** This study was carried out at the Department of Otorhinolaryngology and Head & Neck Surgery, Bolan Medical Complex Hospital, Quetta from December 2011 to December 2013.

**Materials and Methods:** This study included 87 patients of epistaxis of the afore-said period. Medical records of patients were reviewed retrospectively and results were analyzed.

**Results:** The mean age of the patients was  $26.70 \pm 18.10$  (SD) years and male to female ratio was 2:1. Trauma (32.18%) was the commonest cause of epistaxis, followed by idiopathic group (22.99%) and hypertension (14.94%). Other causes were nasal and nasopharyngeal tumours (10.34%), inflammatory diseases of nose and sinuses (8.05%), blood dyscrasias (6.90%) and miscellaneous causes (4.60%) which included one case of aspirin induced epistaxis, one case of hereditary hemorrhagic telangiectasia, one patient of typhoid fever and one case of liver cirrhosis.

**Conclusion:** Nasal trauma is the most common cause of epistaxis. Idiopathic group is the second in which exact cause of epistaxis is not known, followed by hypertension, while other causes are rare.

**Key Words:** Epistaxis, Aetiology, Trauma, Idiopathic, Hypertension.

## INTRODUCTION

Epistaxis is the most common otolaryngologic emergency, reported to occur in up to 60% of the general population.<sup>1, 2</sup> It has a bimodal age presentation with incidence peaks in below 25 years and above 50 years of age and affects males twice more than females.<sup>3</sup> The cause of epistaxis is multifactorial and it results from the interaction of a series of factors that affects the nasal mucosa and the blood vessels, these include environmental, local and systemic factors.<sup>4</sup> Humidity and temperature are environmental factors. Cold, dry air increases cases of epistaxis.<sup>5</sup> Local factors include trauma, anatomic abnormalities, inflammation, allergies and tumours.

Systemic factors like hypertension, platelet and coagulation abnormalities, renal failure and alcohol abuse may cause epistaxis. Medications affecting clotting like anticoagulants and nonsteroidal anti-inflammatory drugs can also lead to epistaxis. Hereditary haemorrhagic telangiectasia (Osler-Weber-Rendu disease) is an unusual cause of severe, recurrent anterior epistaxis.<sup>6</sup>

Post traumatic pseudoaneurysm of internal carotid artery is an uncommon but potentially fatal cause of epistaxis.<sup>7</sup> Trauma is the commonest cause of epistaxis, while, idiopathic causes and hypertension are other common causes of epistaxis.<sup>8</sup>

## MATERIALS AND METHODS

Eighty seven patients of both genders with epistaxis were included in this study. Medical records of these

patients were reviewed retrospectively from December 2011 to December 2013 for aetiology of epistaxis and results were analyzed statistically.

## RESULTS

There were 87 patients of age 3 to 70 years with a mean age of  $26.70 \pm 18.10$  (SD) years. There were 58 male patients and 29 female patients and male to female ratio was 2:1. In seventy nine patients (90.81%) There was anterior epistaxis, while 8 patients (9.19%) suffered from posterior epistaxis. Trauma (32.18%) was the most common cause of epistaxis, followed by idiopathic (22.99%) and hypertension (14.94%). Other causes were nasal and nasopharyngeal tumours (10.34%), inflammatory diseases of nose and paranasal sinuses (8.05%), blood dyscrasias (6.90%) and miscellaneous causes (4.60%) as shown in Table 1. There were 28 patients (32.18%) who suffered from nasal and maxillofacial trauma. Causes of trauma in epistaxis patients were road traffic accidents, physical assaults, nose picking, sports injury, foreign bodies of nose and iatrogenic trauma as depicted in figure 1.

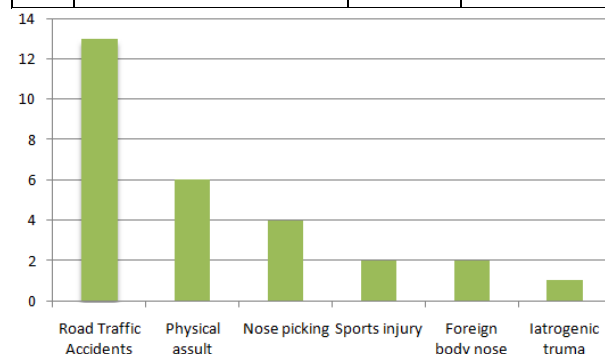
Tumours that caused epistaxis were juvenile nasopharyngeal angiofibroma, nasopharyngeal carcinoma, bleeding polypus of nasal septum, and squamous cell carcinoma of nose. Juvenile nasopharyngeal angiofibroma was found in 4 patients (4.60%), nasopharyngeal carcinoma in 2 patients (2.29%), bleeding polypus of nasal septum (haemangioma) in 2 patients (2.29%), and squamous

cell carcinoma of nose in one patient (1.15%). Blood dyscrasias caused epistaxis in 6 patients (6.89%). In three patients (3.45%) there was idiopathic thrombocytopenia, in 2

There were 4 patients (4.60%) in miscellaneous group, which included one case of aspirin induced epistaxis, one case of hereditary haemorrhagic telangiectasia (Osler-Weber-Rendu disease), one case of Typhoid fever and one case liver cirrhosis.

**Table No.1: Causes of epistaxis (n=87).**

S. No	Causes	No. of patients	Percentage
1.	Trauma	28	32.18%
2.	Idiopathic	20	22.99%
3.	Hypertension	13	14.94%
4.	Tumours	09	10.34%
5.	Inflammatory diseases	07	8.05%
6.	Blood dyscrasias	06.	6.90%
7.	Miscellaneous	04	4.60%
	a) Aspirin induced epistaxis.		
	b) Hereditary Haemorrhagic Telangiectasia.		
	c) Typhoid fever		
	d) Liver cirrhosis		



**Figure No.1: Causes of trauma in epistaxis (n=28).**

## DISCUSSION

Many studies showing, local trauma as the main cause of epistaxis.<sup>9, 10</sup> Gilyoma JM et al. reported that the most common cause of epistaxis is trauma followed by idiopathic and hypertension.<sup>11</sup> Trauma resulting from road traffic crash is the most common etiological factor for epistaxis. Hanif M et al. in their study on 205 patients concluded that Hypertension (48%) in old age, trauma (37%) and upper respiratory tract infection (14%) in young adults and children are the common causes of epistaxis.<sup>12</sup> Mahmood T et al. in a study of 640 cases of epistaxis reported that accidental trauma is the commonest (28%) cause of nose bleeding, followed by inflammatory causes (17%) and idiopathic (14.5%).<sup>13</sup> Iseh KR et al. found that the commonest cause of epistaxis is idiopathic (29.2%), followed by

trauma (27.8%) and hypertension (18%) in a study of 72 cases.<sup>14</sup>

In our study trauma was the commonest cause of epistaxis followed by idiopathic group and hypertension. However, several studies have shown no relationship between hypertension and epistaxis.<sup>15, 16</sup>

Many national and international studies have shown hypertension as a common cause of epistaxis.<sup>8, 11, 12, 14</sup> Hypertension is frequently associated with posterior epistaxis.<sup>9</sup> It may be more responsible for prolonging bleeding than for initiating it.<sup>17</sup> The elevated pressure, which disrupts thrombus formation, and the diminished constrictive ability of atherosclerotic vessels compromise the hemostasis.

In 9 patients (10.34%) cause of epistaxis was nasal and nasopharyngeal tumours. The most common tumour which presents with recurrent epistaxis is juvenile nasopharyngeal angiofibroma.<sup>5</sup> In juvenile nasopharyngeal angiofibroma the patient presents with recurrent epistaxis and nasal blockage with intranasal mass.<sup>18</sup>

Inflammatory diseases of nose and paranasal sinuses caused epistaxis in 7 patients (8.05%). Many studies have documented inflammatory diseases of nose and paranasal sinuses as a common cause of epistaxis.<sup>13, 14</sup>

Blood dyscrasias, particularly platelet disorders, von Willebrand disease and haemophilia can cause epistaxis.<sup>19</sup> In our study 6 patients suffered from blood dyscrasias. In this study other causes of epistaxis were aspirin induced epistaxis, hereditary haemorrhagic telangiectasia (Osler-Weber-Rendu disease), Typhoid fever and Liver cirrhosis. It is thought that the link between the of nonsteroidal anti-inflammatory drugs and the occurrence of epistaxis may be due to alteration of platelet function.<sup>20</sup> The diagnosis of hereditary haemorrhagic telangiectasia (Osler-Weber-Rendu disease) include epistaxis, telangiectasia, visceral lesions and an appropriate family history.<sup>21</sup> Chronic liver disease (cirrhosis) may cause epistaxis. Kodiya AM et al, in a study of 101 patients with epistaxis, have shown that chronic liver disease caused epistaxis in 3 patients (2.97%).<sup>22</sup>

## CONCLUSION

Trauma resulting from road traffic accidents is the most common cause of epistaxis, followed by idiopathic causes and hypertension. Other causes of epistaxis are tumours of nose and nasopharynx, inflammatory diseases of nose and paranasal sinuses and blood dyscrasias. Drug induced epistaxis, hereditary haemorrhagic telangiectasia typhoid fever and chronic liver disease are rare causes of epistaxis.

**Recommendation:** Since in this study road traffic accident is the commonest cause of epistaxis in our setup, therefore, the management of traumatic epistaxis should focused and follow the guide lines.

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