

EPISTAXIS-ETIOLOGICAL PROFILE AND TREATMENT OUTCOME AT A TERTIARY CARE CENTREWaseem Ahmad Shah¹, Parth Amin², Fouzia Nazir³**HOW TO CITE THIS ARTICLE:**

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ABSTRACT: BACKGROUND: Epistaxis is the commonest otolaryngological emergency affecting up to 60% of the population in their lifetime, with 6% requiring medical attention. This study was conducted to describe the etiological profile and treatment outcome of epistaxis at SKIMS Medical College, Bemina, Srinagar, a tertiary care hospital. **METHODS:** This was a prospective descriptive study of the cases of epistaxis managed at SKIMS Medical College, Bemina, Srinagar, a tertiary care hospital, from July 2014 to January 2015. All patients of acute epistaxis due to any cause were included. The data for the following variables was collected; gender, age, age group, cause, type and laterality of epistaxis and success rate of treatment modalities. **RESULTS:** A total of 114 patients with epistaxis were studied. Males were affected more than the females (1.8:1). Their mean age was 32.24 ± 12.54 years (range 4 to 82 years). The commonest cause of epistaxis was trauma (46.22%) followed by hypertension (25.43%) and idiopathic (18.43%). Anterior nasal bleeding was noted in majority of the patients (69.29%). Non-surgical measures were the main intervention methods in 99.12% of cases and of this, local cauterization (49.12%) and anterior nasal packing (26.31%) were most common non-surgical measures. Surgical measures mainly tumor resection was carried out in 0.87% of cases. The overall success rate of treatment was 92.0%. **CONCLUSION:** Epistaxis is the commonest otolaryngological emergency. Trauma resulting from road traffic accident (RTA) remains the most common etiological factor for epistaxis. Most cases can be successfully managed with conservative (non-surgical) treatment alone and surgical intervention with its potential complications may not be necessary in most cases and should be the last resort. Reducing the incidence of trauma from RTA will reduce the incidence of emergency epistaxis.

KEYWORDS: Epistaxis, Trauma, Anterior nasal bleed.

INTRODUCTION: Epistaxis is one of the most common nasal emergencies, with an incidence ranging from 30 to 100 per 100,000 each year.⁽¹⁾ The lifetime occurrence rate of epistaxis is approximately 60%.⁽²⁾ However, most bleeding episodes are minor and require no medical treatment. Minor bleeding episodes occur more frequently in children and adolescents, whereas severe bleeds requiring otolaryngological intervention often occur in patients older than 50 years.⁽³⁾

Epistaxis is commonly divided into anterior and posterior epistaxis, depending on the site of origin.^(4,5) Anterior nose bleeds arise from damage to Kiesselbach's plexus on the lower portion of the anterior nasal septum, known as the Little's area, whereas posterior nose bleed arise from damage to the posterior nasal septal artery.^(4,6) Anterior epistaxis is far more common^(4,6) than posterior epistaxis, accounting for more than 80% of cases.^[4,6,7] The aetiology of epistaxis can be broadly divided into the local or systemic causes, although even this distinction is difficult to make and the term "Idiopathic Epistaxis" is ultimately used.^[4,8] The etiological profile of epistaxis has been reported to vary with age and anatomical location.^[4-8]

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Traumatic epistaxis is more common in younger individuals and is most often due to digital trauma, facial injury or a foreign body in the nasal cavity.^[6-8] Non-traumatic epistaxis is more characteristic of older patients (Over age 50 years) and may be due to organ failure, neoplastic conditions, inflammation, or environmental factors (Temperature, humidity, altitude).^[7,8] Epistaxis that occurs in children younger than 10 years usually is mild and originates in the anterior nose, whereas epistaxis that occurs in individuals older than 50 years is more likely to be severe and to originate posteriorly.^[9] Epistaxis poses a greater risk in elderly people in whom clinical deterioration may progress rapidly if the blood loss is significant.^[7]

The treatment of epistaxis requires a systematic and methodical approach, and options vary according to the cause, location, and severity of the hemorrhage.^[4,6,7,9] Both conservative and surgical treatment modalities have been used in the treatment of epistaxis.^[6] Most of the underlying causes of epistaxis are preventable.^[8,9] A clearer understanding of the causes, treatment and outcome of these patients is essential for establishment of preventive strategies as well as treatment guidelines.^[7,8] This study was conducted in our setting to identify the etiological profile and to determine the outcome of treatment of these patients. The results of this study will provide basis for planning of preventive strategies and establishment of treatment guidelines.

METHODOLOGY:

Study design and Setting: This was a prospective descriptive study of patients who presented with nasal bleeding (epistaxis) at SKIMS Medical College Bemina, Srinagar from July 2014 to January 2015.

Study Subjects: The study subjects included all patients who presented with epistaxis at SKIMS Medical College Bemina, Srinagar during the period under study. These patients were received through Accident & Emergency department, ENT clinic and as referral from other departments. Initial assessment included haemodynamic status, type and severity of bleeding. In cases of mild bleed and stable patient history details were noted and in case of heavy bleed, history was taken after the bleeding was controlled. If there were signs of excessive blood loss and/or patient was in a state of shock, steps were taken to stabilize the patient simultaneously with control of epistaxis.

Resuscitation was carried out according to Advanced Trauma Life Support (ATLS) principles. After resuscitation all patients underwent a detailed history taking and a thorough general examination, systemic examination and examination of the nose, throat and ears with special emphasis to identify the site of bleeding. The patients were subjected to investigations of hematological parameters and radiological evaluation. Blood samples were taken and sent for base line haemoglobin estimation and blood grouping and cross matching when indicated. Other relevant investigations were ordered based on clinical suspicion regarding a particular aetiology.

The diagnosis of epistaxis was based on clinical history, physical findings, laboratory and radiological investigations with examination under anaesthesia of the nose, nasopharynx and biopsy. All patients were treated conservatively initially and surgical intervention was considered only when conservative means failed to control the epistaxis. Conservative (non-surgical) treatment included cauterization of the bleeding site using chemical cautery, anterior nasal packing and posterior nasal packing. Surgical treatment included resection of intranasal tumors.

Arterial ligation and endovascular embolization were not performed as there were no patients with intractable epistaxis. Successful treatment was defined as no recurrent epistaxis following pack removal or no readmission with epistaxis within 24 hours of hospital discharge.

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RESULTS: During the period under study, a total of 114 patients were studied. Eighty-eight (77.19%) patients presented through the accident and emergency units and 26 (22.8%) presented in the otorhinolaryngology Clinic. There were 74 males (64.91%) and 40 females (36.08%) with a male to female ratio of 1.8:1. Their ages ranged between 4 and 82 years (TABLE 1).

AGE GROUP	MALES	FEMALES	TOTAL NO. (%)
05 - 10	13	07	20 (17.5)
11 - 20	12	06	18 (15.7)
21 - 30	06	04	10 (8.7)
31 - 40	05	03	08 (7.1)
41 - 50	08	04	13 (11.4)
51 - 60	11	05	15 (13.1)
61 - 70	13	07	20 (17.1)
>70	06	04	10 (8.7)
TOTAL	74	40	114 (100)

**TABLE 1. DISTRIBUTION OF STUDY POPULATION
ACCORDING TO AGE AND SEX**

The commonest cause of epistaxis was trauma (46.22%) followed by hypertension (25.43%) and idiopathic (18.43%) TABLE 2. All patients with non-traumatic epistaxis had previous history of nasal bleeding ranging from one to five episodes.

CAUSE OF EPISTAXIS	NUMBER	PERCENTAGE (%)
TRAUMA	47	41.22
HYPERTENSION	29	25.43
IDIOPATHIC	21	18.42
UPPER RESPIRATORY TRACT INFECTION	07	06.14
BLEEDING DIATHESIS	07	06.14
HEPATIC /RENAL DISORDER	02	01.75
SINO- NASAL MALIGNANCY	01	0.87

TABLE 2: CAUSE OF EPISTAXIS

According to the bleeding site, 79 patients (69.29%) had anterior nasal bleeding, 24 (21.05%) had posterior bleeding and the remaining 11(9.64%) patients had non-identifiable bleeding sites (Table 3). The right nasal cavity (60.75%) was more affected than the left (39.24%). Bilateral involvement was recorded in 35 (30.70%) of cases.

TYPE OF EPISTAXIS	NUMBER	PERCENTAGE (%)
ANTERIOR	79	69.29
POSERIOR	24	21.05
MIXED	11	9.64
TOTAL	114	100

TABLE 3: TYPE OF EPISTAXIS

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Non-surgical measures were the main intervention methods in 99.12% of cases. Of this, local cauterization (59.64%) and anterior nasal packing (31.57%) were most common non-surgical measures. Surgical measures mainly tumor resection was carried out in 0.87% of cases (Table 4). Prophylactic broad spectrum antibiotics were prescribed in all patients who had nasal packing, local cauterization and those who underwent surgical resection of intranasal tumors.

TREATMENT MODALITY	NUMBER OF PATIENTS	PERCENTAGE (%)
SILVER NITRATE CAUTERY	68	59.64
ANTERIOR NASAL PACKING	36	31.57
POSTERIOR NASAL PACKING	09	07.89
SURGICAL INTERVENTION	01	0.87

TABLE 4: TREATMENT MODALITY

Success rates for various treatment modalities are shown in table 5 below.

SUCCESS RATE	NUMBER OF PATIENTS	PERCENTAGE (%)
SILVER NITRATE CAUTERY	60	88.23
ANTERIOR NASAL PACKING	29	80.55
POSTERIOR NASAL PACKING	09	100
SURGICAL INTERVENTION	01	100

TABLE 5: SUCCESS RATE OF VARIOUS TREATMENT MODALITIES

DISCUSSION: Epistaxis is the manifestation of multiple local and other systemic disorders of the body.⁽¹⁰⁾ The age range of our patients is almost similar to that reported in local and foreign literature.^(11,12) Contrary to our results, in a study by Awan et al all of the patients were from pediatric age group. Our study results showed a bimodal presentation of epistaxis among the patients, which is has also been reported in literature.⁽¹²⁾

The increased incidence of epistaxis in younger age is because of sports injuries and road traffic accidents due to their aggressive life style. On the other hand, the increased incidence in old age is probably due to vascular pathologies, hypertension and malignancy.⁽¹¹⁾ In the present study, epistaxis was found to affect more males than females, with a male to female ratio of 1.8:1. This male preponderance has also been found in other studies.^(12,13,14) Globally there is a male preponderance in epistaxis except in the geriatric age group in some reports where no significant sex difference exists.⁽¹⁵⁾

The male preponderance in this study may be attributed to high incidence of traumatic epistaxis which tends to affect young males because of their frequent involvement in high risk taking behaviour. Young males are the most active in the population and so are more vulnerable to trauma from nose picking especially among children, fights, road traffic accident with maxillofacial injuries causing epistaxis. The present study shows that the most common cause of epistaxis was trauma followed by idiopathic and hypertension, which is consistent with other studies in developing countries.^(16,17) This trauma varied from minor injury such as digital trauma to varying degrees of nasal injury from road traffic injury. The nose being a prominent feature on the face is highly susceptible in craniofacial injury.

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Most of our patients with epistaxis from trauma were actually victims of road traffic injury. Trauma being the most common cause of epistaxis can partly explain the frequency of this problem in males. Hypertension being the second commonest cause in this report shows epistaxis as evidence of poor blood pressure control. Varsney and Saxena⁽¹⁵⁾ also recorded hypertension as the second commonest cause of epistaxis while Chaiyasate et al⁽¹⁸⁾ reported hypertension to be the commonest cause of epistaxis followed by idiopathic causes. The need for regular blood pressure check and compliance to antihypertensive medications must be emphasized.

In our study, anterior epistaxis was more common (69.29%) than posterior type (21.05%). This finding is in tandem with existing literature.^(12,17) These findings differed from some studies, which showed that posterior epistaxis was more common.⁽¹⁹⁾

The management of epistaxis is well summarized in an age-old dictum: resuscitate the patient, establish the bleeding site, stop the bleeding and treat the cause of epistaxis.⁽²⁰⁾ Dealing with a patient with active severe epistaxis can be bloody. The authors recommend universal precautions for all health care personnel involved in the care of these patients, including face mask with shields, gowns, hair coverage, and double-gloving. The goal of treatment include: hemostasis, short hospital stay, low complication and cost effectiveness of the method of therapy.^[5,15,20]

Treatment modalities can be separated into two groups; Nonsurgical/non-interventional /conservative and Surgical/interventional approaches. Non-surgical approach has been reported to stop the bleeding in more than 80-90% of cases.^[21]

Regarding control of nasal bleeding, we used 3 conservative modalities in a stepwise fashion: initially chemical cauterization (silver nitrate) if bleeding point was visible, anterior nasal packing if bleeding was profuse, and posterior nasal packing if anterior nasal packing failed. The same approach to control epistaxis was also followed by Rope et al as well.⁽²²⁾ Chemical cauterization was used in 59.64% in our patients. The overall success rate for cauterization was higher (88.2%) than that reported by Razdan et al⁽²³⁾ (72.07%). Anterior nasal packing was used in 31.57% of our patients with success rate of 80.55%. Gilyoma et al⁽²⁴⁾ had used anterior nasal packing for 38.5% of his patients with success rate of 92.5% which are higher to our results.

Posterior nasal packing was used in 7.89% of patients with a success rate of 100%, similar to other studies.^(22,24) We used ribbon gauze impregnated with antibiotic ointment for nasal packing to minimize the risk of toxic shock syndrome.⁽¹¹⁾ In this study, surgical treatment was done only in 0.87% of patients who presented with bleeding intranasal tumor with 100% success rate. Similar finding was also reported in Iseh Kr et al.⁽²⁵⁾ In our series, no surgical ligation of vessel was required. Arterial ligation is necessary in intractable cases of epistaxis when conservative measures fail. Currently, endoscopic approach and intervention radiology have made arterial ligation safer and faster in the management of epistaxis. There was no mortality recorded in this series.

CONCLUSION: Trauma resulting from road traffic crash (RTC) remains the most common etiological factor for epistaxis in our setting. Multiple methods for treating epistaxis are available, and occasionally more than one treatment is used. Our experience shows that conservative approach is arguably sufficient in the management of most cases of epistaxis without the need for surgical intervention. Non-surgical treatment is useful to arrest nasal bleeding and it is safe and cost-effective, and surgical intervention should be the last resort. Reducing the incidence of trauma from RTC will reduce the incidence of emergency epistaxis.

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