

Study of risk factors and treatment methods in patients presenting with epistaxis to a tertiary care hospital in North Karnataka

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Received: 16th May 2022; **Accepted:** 12th December 2022; **Published:** 01st January 2023

Abstract: *Background:* Epistaxis is a common otorhinolaryngological condition. It is often self-limiting, and only 6-10% of individuals seek medical care. Epistaxis is common in children and elderly. It is commonly of anterior type, originating from the Kieselbach plexus following trauma. It can be posterior type, usually in the elderly. Various treatment options are available such as nasal packing, hemocoagulase, cautery, embolization, etc. The causative factors, types of epistaxis and the treatment options employed are variable. *Objectives:* The present study was conducted to know the common type of epistaxis requiring medical attention in the patients attending our tertiary care hospital, the treatment commonly provided and the outcome. *Methods:* Retrospective observational hospital-based study design was used. Data of patients of all age groups and both genders newly presenting with epistaxis to the emergency department from October 2017 to September 2018 were included. Details of causative risk factors, types of epistaxis and treatment given along with the outcome were collected and analyzed. *Result:* Among the 60 patients studied, 44 were male and 16 were female. Anterior epistaxis (75%) was commoner than posterior epistaxis (25%). Predominant causative risk factors for anterior epistaxis were trauma (56%) and conditions with low platelet counts (31%), while hypertension (93%) was the commonest causative risk factor associated with posterior epistaxis. Nasal packing was used to stop epistaxis in 62% of patients irrespective of the cause (51% of anterior epistaxis and 93% of posterior epistaxis). *Conclusion:* Anterior type of epistaxis is common following trauma or platelet disorders. Nasal packing is used as an effective treatment, followed by hemocoagulase and cautery for epistaxis.

Keywords: Epistaxis, Causative Risk Factors, Nasal Packing, Platelet Disorders.

Introduction

Epistaxis is a prevalent otorhinolaryngological manifestation, seen in 10-60% of the general population at least once in their lifetime [1-2]. Most episodes of epistaxis are self-limited and resolve spontaneously [1]. An estimated 6-10% of epistaxis cases require some kind of intervention [1, 3]. Epistaxis can be recurrent in some people [3].

Epistaxis is more common in children and the elderly. It can be anterior or posterior, the anterior type being the commonest [3]. The source in 90% of anterior epistaxis cases is the Kieselbach plexus (Little's area) present on the anterior nasal septum, and it is relatively easier to control [4]. Posterior epistaxis is associated with a higher risk

of airway blockade, aspiration of blood and greater difficulty in controlling the bleeding [5].

The present study was conducted to know the common type of epistaxis requiring medical attention in the patients attending our tertiary care hospital, the treatment commonly provided and the outcome. It is hoped that the results of the study will help in understanding the changing trends in etiopathogenesis of epistaxis and formulate appropriate facility set-up and treatment.

Material and Methods

This was a retrospective observational hospital-based study. Data of patients of all age groups and all genders newly presenting

with epistaxis to the emergency department from October 2017 to September 2018 were included in the study. Epistaxis cases following surgical procedures were excluded.

Data was collected by reviewing the case sheets including basic demographic details (age, gender), type of epistaxis (anterior or posterior), causes for epistaxis, the treatment given and the outcome. The data was tabulated in Microsoft Excel, percentages were calculated and analyzed.

Results

A total of 60 patients were included in the study, of which 44 were males and 16 were females. A total of 43% of the patients were below 30 years, and 33% were in the 51-70 years age group. Anterior epistaxis was seen in 75% (45/60) patients and predominantly in the younger age group (Mean 32.82 years, SD 21.49, range 2-87 years). Posterior epistaxis was seen in 25% (15/60) patients, more common in the older age group (Mean 63.07 years, SD 20.33 and range 3-87 years). Risk factors associated with anterior and posterior types of epistaxis are summarized in table 1.

Cause	Anterior epistaxis	% (n=45)	Posterior epistaxis	% (n=15)	Total	% (n=60)
Trauma	25	56	0	00	25	42
HTN	1	02	14	93	15	25
Dengue	6	13	0	00	6	10
Platelet Dis	8	18	0	00	8	13
Spontaneous	5	11	0	00	5	8
Aneurysm	0	00	1	07	1	2
Total	45	100	15	100	60	100

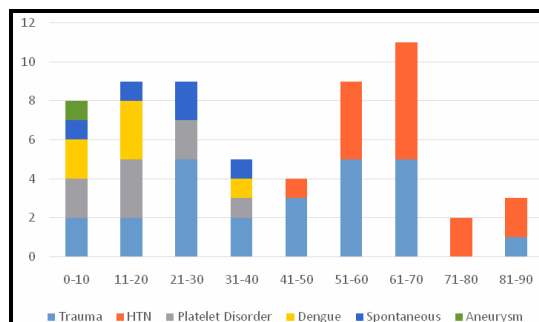
Age-wise distribution of various risk factors associated with epistaxis in this study is depicted in graph 1. Overall, trauma (42%) and hypertension (25%) were the most common causative risk factors observed, followed by platelet disorders/idiopathic thrombocytopenic purpura (15%) and dengue (10%).

Predominant causative risk factors for anterior epistaxis were trauma (56%, 25/45) and conditions with low platelet counts (31%, 14/45), while hypertension (93%, 14/15) was the commonest causative risk factor associated with posterior epistaxis. In 5 patients, the cause could not be determined conclusively, and one patient had an aneurysm.

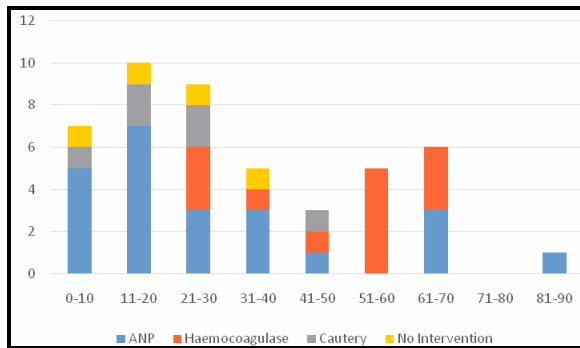
Age-wise choice of treatment for Anterior Epistaxis is shown in graph 2. Nasal packing was used to stop epistaxis in 62% (37/60) patients irrespective of the cause. 51% (23/45) patients with anterior epistaxis received anterior nasal packing (ANP) and 93% (14/15) patients with posterior epistaxis received posterior nasal

packing (PNP). Other treatment options used were hemocoagulase (Inj Botropase), cauterization and embolization. Age-wise treatment given is depicted in graph 2. Single intervention directed to stop epistaxis along with appropriate treatment of the primary cause was sufficient in controlling epistaxis in all the patients except for one child aged 3 years, where the cause was an aneurysm and along with nasal packing, embolization had to be done.

Graph-1: Age wise distribution of risk factors associated with epistaxis



Graph-2: Age wise choice of treatment for Anterior Epistaxis



Discussion

Epistaxis is estimated to account for 0.5% of all emergency visits to a hospital and 1/3rd of all emergency visits related to the otorhinolaryngology department. As most of the epistaxis resolve spontaneously, around 0.2% of epistaxis patients need inpatient admission and aggressive treatment [6]. Epistaxis in children needs to be evaluated thoroughly as it could be the first manifestation of an underlying bleeding disorder[7].

The majority of the epistaxis is anterior type, mostly involving the Kieselbach plexus. Posterior epistaxis accounts for around 5% to 10% of nosebleeds that are from posterior sites on the lateral nasal wall or nasal septum and are not visible by anterior rhinoscopy. Posterior epistaxis originates from branches of the internal maxillary, sphenopalatine, and descending palatine arteries. As hemostasis can be challenging to achieve with posterior epistaxis, the distinction between anterior and posterior epistaxis is vital in guiding management [1].

In the present study, epistaxis was found to be commoner in males (73%) than in females (27%). Anterior epistaxis (75%) was commoner than the posterior type (25%). Incidence was highest in two age groups, less than 30 years and 50-70 years. Studies have shown that the incidence of epistaxis is highest in two age groups, children younger than ten years and adults between 70 and 79 years of age. Incidence has been found to be generally higher among males than females [1].

Epistaxis can be divided into primary or secondary types. Primary epistaxis is idiopathic

and spontaneous. Secondary epistaxis has clear and definite causes like trauma or anticoagulation use. Causes of epistaxis can also be divided into local causes (eg, trauma, digital manipulation, mucosal irritation, septal abnormality, inhaled corticosteroids, chronic use of nasal cannula, inflammatory diseases, tumors), systemic causes (eg, blood dyscrasias, arteriosclerosis, alcoholism, hypertension, vascular malformations or hereditary hemorrhagic telangiectasia), and idiopathic causes.

Local trauma is the commonest cause (36%), followed by facial trauma, foreign bodies, nasal or sinus infections, and prolonged inhalation of dry air. Children usually present with epistaxis due to local irritation or recent upper respiratory infection [2]. In this study, trauma is consistently associated with epistaxis in all age groups. Trauma was the commonest cause (56%) of anterior epistaxis. Hypertension was found in 93% of cases of posterior epistaxis. Disorders of platelets were seen in 33% of anterior epistaxis cases, 13% of them were due to dengue and 18% were idiopathic thrombocytopenia.

Several studies have shown an association of hypertension with posterior epistaxis and the prevalence of hypertension in patients with epistaxis has been reported to be between 24% and 64% [4, 8]. But the causative nature of hypertension in producing posterior epistaxis is unclear and needs further exploration [1, 8].

The epistaxis cases presented to the hospital, mostly to the emergency department, were treated as per the site and cause of the epistaxis. The anterior epistaxis was successfully managed with anterior nasal packing (51%), hemocoagulase (Inj. Botropase) (29%), cautery (13%) and in the remaining 9% of individuals no intervention was needed. Among the 15 cases of posterior epistaxis, 14 responded to posterior nasal packing, and one case needed embolization.

The treatment options available for epistaxis can be divided as medical, nonsurgical interventional, and surgical options, and they have their own advantages, disadvantages, complications, and success rates [4, 9-10].

Recommended guidelines for anterior epistaxis include direct compression of nasal alae with head tilted forwards (effective in 20%), topical medication and cautery, nasal packing, evaluating if patient is on anticoagulation therapy and postepistaxis care to prevent rebleeding [11].

A randomized control study has concluded that in patients presenting to an emergency department with atraumatic epistaxis that is not controlled with simple first aid measures, topical tranexamic acid applied in the bleeding nostril on a cotton wool dental roll is not superior to anterior nasal packing in arresting the bleeding [12].

For the patients analyzed in this study too, accepted standard step-wise outpatient conservative measures were tried in the beginning, followed by more invasive methods to achieve haemostasis [1]. External compression by simple pinching of nares was tried, when not successful, anterior nasal packing or hemocoagulase injection was done. Anterior nasal packing, the most common therapy for epistaxis, has some limitations, including the potential for reduced ventilation and sleep apnoea, the need for analgesics and, in some cases, the need for prophylactic antibiotics [2].

Financial Support and sponsorship: Nil

Posterior epistaxis is often brisk, and as the location is not easily accessible, it is usually difficult to visualize the site of bleeding. Compared to the anterior epistaxis, patients with posterior epistaxis are more likely to require hospitalization and are twice as likely to require nasal packing [13-14]. Chemical cautery is usually not possible for posterior epistaxis because the source of bleeding is rarely identified [15].

Conclusion:

In our tertiary care center, age groups up to 30 years and 50-70 years are commonly presenting with epistaxis requiring intervention in the hospital. In younger age groups trauma and conditions with low-platelet count were common associated factors, while hypertension was the commonest associated factor in the elderly. Anterior epistaxis was commoner and mostly managed by anterior nasal packing followed by hemocoagulase injection. Most of the posterior epistaxis were managed by posterior nasal packing. Conditions with Low-platelet count need further evaluation in our setting. Further prospective analysis with bigger sample size will yield more reliable results.

Conflicts of interest: There are no conflicts of interest.

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Cite this article as: Gouripur K, Patil MN and Malashetty S. Study of risk factors and treatment methods in patients presenting with epistaxis to a tertiary care hospital in North Karnataka. *Al Ameen J Med Sci* 2023; 16(1):65-69.

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