

Original article

Assessment of Conservative, Medical and Surgical treatment modalities in epistaxis in Indian set up

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Abstract:

Introduction: Epistaxis is the most common otolaryngological condition, affecting up to 60% of the population during their lifetime, with 6% requiring medical attention. This study aimed to compare effectiveness of Conservative, medical and Surgical treatment modalities in epistaxis in Indian set up.

Methods: A prospective study was conducted in our tertiary care hospital. These patients were admitted from the emergency department (ER), from the outpatient department (OPD), or as referrals from other departments. Patients of all ages were included. All epistaxis patients presenting to the hospital during the study period , were wilfully included only. These patients were compared effectiveness of Conservative , Medical and Surgical treatment modalities in epistaxis in Indian set up.

Results: In our study, regarding treatment modalities, conservative/nonsurgical method was sufficient to control epistaxis in most of our patients. Among the conservative methods, observation alone without active intervention was carried out in 8 % patients. However, 61% patients were treated with anterior nasal packing. Anterior nasal pack was kept in situ for 48 hours while posterior nasal pack was removed after 72 hours. Broad spectrum antibiotic was used in patients with nasal packing to prevent infectious complications.

Conclusion: Anterior nasal packing (Medical management) was the most common treatment method applied in these patients. Broad spectrum antibiotics found supportive role in prevention of infection.

Keywords: Epistaxis , otolaryngological emergency , hypertension, trauma , coagulopathy

Introduction:

Epistaxis is the most common otolaryngological condition, affecting up to 60% of the population during their lifetime, with 6% requiring medical attention.¹ It is usually treated with simple conservative measures, but is occasionally may observe a life-threatening condition. Identifying the cause is important because it reflects the patient's treatment plan.² Epistaxis can be caused by both systemic and local factors. Local causes include inflammatory, infectious, traumatic, anatomical (deviated nasal septum, septal spur), chemical or climatic changes, neoplasms, and foreign body. Similarly, systemic causes of epistaxis include

hematological diseases causing coagulopathy, cardiovascular diseases such as hypertension and vascular heart disease, liver disease, kidney disease and anticoagulant drugs. However, in the majority (80-90%) of patients, no identifiable cause is found and it is labelled as "idiopathic".³ Nose blowing, excessive coughing in chronic obstructive pulmonary disease (COPD), straining with constipation and benign prostatic hyperplasia (BPH), and heavy lifting are aggravating factors for epistaxis. Treatment of a patient with epistaxis in any age group begins with resuscitating the patient, identifying the site of bleeding, stopping the bleeding, and treating the underlying cause. There

is no definitive protocol for the treatment of epistaxis, although various treatment methods are available for treatment, ranging from local pressure, local vasoconstrictor, nasal congestion, cautery (chemical/electrical), to embolization or vascular ligation.^{4,5} This study aimed to compare effectiveness of Conservative, medical and Surgical treatment modalities in epistaxis in Indian set up.

Material and methodology:

This prospective study was conducted in our tertiary care hospital at Department of ENT . These patients were admitted from the emergency department (ER), from the outpatient department (OPD), or as referrals from other departments. Patients of all ages were included.

Selection criteria Inclusion criteria –

- All epistaxis patients presenting to the hospital during the study period, were wilfully included only.

Exclusion criteria –

- Patients who were lost to follow-up.
- No willing to participate

Written informed consent was obtained from all these patients.

All patients underwent routine examinations such as complete blood count, hemoglobin level, platelet count, random blood sugar, serum electrolytes, urea, creatinine, routine urinalysis and blood grouping.

A coagulation profile such as prothrombin time, activated plasma thromboplastin time, and bleeding and clotting time was also performed. Computed tomography (CT) was performed in selected cases to assess neoplasms of the nose and paranasal sinuses; and nasopharynx. Further examinations were ordered based on the history and clinical examination of possible etiology and comorbidity. In addition, additional investigations such as chest X-ray, electrocardiogram (ECG) and serological tests were required to determine eligibility for procedures requiring general anesthesia, i.e. conventional posterior nasal packing and surgical methods to control epistaxis. The patient's treatment began with simultaneous examination and treatment. First, patients were examined by anterior rhinoscopy to identify the bleeding site. Treatment of patients with epistaxis included conservative, medical and surgical treatment depending on requirement.

Results:

A total of 100 patients had epistaxis; 74 were males and 26 were females.

Table 1) Distribution of patients on the basis of etiology

S NO.	Etiological factor	Number of patients	Percentage
1	Idiopathic	55	55
2	Hypertension	22	22
3	Trauma	16	16
4	Coagulopathy	7	7

In our study, most common cause of epistaxis was idiopathic (55%) followed by hypertension (22%), trauma (16%), and coagulopathy (7%).

Table 2) Distribution of patients on the basis of treatment

S NO.	Etiological factor	Number of patients	Percentage
1	Anterior nasal packing. (medical treatment)	61	61
2	Chemical cautery	12	12
3	Electrocautery	2	2

4	Posterior nasal packing (medical treatment)	14	14
5	Endoscopic sphenopalatine arterial ligation	3	3
6	Conservative treatment (Only active observation)	8	8

Regarding treatment methods, most (61%) of our patients required anterior nasal packing. Chemical cautery was sufficient to stop bleeding in 12% of patients while electrocautery and posterior nasal packing were performed in 2% and 14% patients, respectively. 3% patients required endoscopic sphenopalatine arterial ligation. Regarding the etiology, exact cause of epistaxis could not be ascertained in 55 % patients. Regarding treatment modalities, conservative/nonsurgical method was sufficient to control epistaxis in most of our patients. Among the conservative methods, observation alone without active intervention was carried out in 8 % patients. However, 61 % patients were treated with anterior nasal packing. Anterior nasal pack was kept in situ for 48 hours while posterior nasal pack was removed after 72 hours. Broad spectrum antibiotic was used in patients with nasal packing to prevent infectious complications.

Discussion:

A number of treatment methods like conservative treatment , medical treatment , surgical treatment , use of broad spectrum antibiotic etc have been used to control epistaxis, ranging from pinching the nose to ligation of blood vessels.^{6,7} The way to treat epistaxis depends on the location, severity and etiology of the bleeding. Treatment modalities can be broadly divided into non-surgical and surgical approaches. ⁸Non-surgical/conservative modalities include digital nasal compression, local vasoconstrictor, local cautery (chemical or electrical), and nasal congestion (anterior or posterior). If the bleeding site is visible, the bleeding site can be cauterized either by chemical cauterization using silver nitrate, chromic acid, or trichloroacetic acid, or by electrocautery using bipolar diathermy. In our institute, we normally use silver nitrate for chemical cauterization.

In our study, a total of 100 patients had epistaxis, with 74 males and 26 females showing a male predominance. The average age of the patients was recorded as 41.55 years. In our study, the most common cause of epistaxis was idiopathic

(55%), followed by hypertension (22%), trauma (16%), and coagulopathy (7%). Regarding treatment methods, the majority (61%) of our patients required anterior nasal obstruction. Chemical cautery was sufficient to stop bleeding in 12% of patients, while electrocautery and posterior nasal packing were performed in 2% and 14% of patients, respectively. Endoscopic ligation of the sphenopalatine artery was necessary in 3% of patients.

In our study, in terms of etiology, it was not possible to determine the exact cause of epistaxis in 55% of patients.^{8,9} Regarding treatment modalities, a conservative/non-surgical method was sufficient to control epistaxis in most of our patients. . Of the conservative methods, only observation without active intervention was performed in 8% of patients. However, 69% of patients were treated with an anterior nasal inlay. The anterior nasal pad was left in situ for 48 hours, while the posterior nasal pad was removed after 72 hours. 10A broad-spectrum antibiotic has been used in patients with nasal congestion to prevent infectious complications.¹¹

In the current study, the most common frequency of epistaxis was anterior epistaxis, age above 40 years, with male predominance, these observations were almost comparable with those of some studies ^{9, 10, 11}, but other studies ^{12, 13} disagreed with this age group, since they found that the highest incidence was found in the younger age group, the reason was that most of their patients had a traumatic etiology, which is usually found in a young active population.

Gilyoma JM et al ¹² found that a total of 104 patients with epistaxis were studied. Men were affected twice as often as women (2.7:1). Their mean age was 32.24 ± 12.54 years (range 4 to 82 years). The modal age group was 31-40 years. The most common cause of epistaxis was trauma (30.8%), followed by idiopathic (26.9%) and hypertension (17.3%). Anterior epistaxis was noted in the majority of patients (88.7%). Non-surgical

measures such as observation alone (40.4%) and anterior nasal obstruction (38.5%) were the main intervention methods in 98.1% of cases. Surgical measures, especially intranasal tumor resection, were performed in 1.9% of cases. Arterial ligation and endovascular embolization were not performed. The complication rate was 3.8%. The overall average length of hospitalization was 7.2 ± 1.6 days (range 1 to 24 days). Five patients died for a mortality rate of 4.8%

Johnson et al,¹³ who used bipolar electrocautery to control epistaxis in their patients, concluded that electrocautery had a longer epistaxis-free period and a lower recurrence rate compared with chemical cautery. Most of the underlying causes of epistaxis are preventable.¹⁰ A clearer understanding of the causes, treatment, and

outcomes of these patients is essential for determining prevention strategies and treatment guidelines. Such data are lacking in our setting because there is no local study that has been conducted on this topic. This study was conducted in our setting to identify the etiological profile and determine the outcome of treatment in these patients. The results of this study will provide a basis for planning prevention strategies and establishing treatment guidelines that are useful in the Indian setting.

Conclusion:

Anterior nasal obstruction was the most common treatment method applied in these patients. Broad spectrum antibiotics found supportive role in prevention of infection.

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