

# Epistaxis: Etiology and Management

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**This prospective study was conducted in ENT department at Lahore General Hospital Lahore with objectives to evaluate the patients for various etiological factors and to study the effects of various treatment modalities. The most common cause of epistaxis was trauma and bleeding usually stopped by conservative measures. The most common medical condition associated with epistaxis was hypertension, which responded well to medical treatment. Non-surgical treatment was effective in majority of our patients; surgical treatment was considered in cases of failure of non-surgical methods.**

**Key words: Epistaxis, Hypertension, Surgical treatment, Aetiological factors.**

Epistaxis "bleeding from the nose" is mentioned in medical literature dating back to very early times<sup>1</sup>. It is a common disorder; up to 60% population will have at least one attack of epistaxis in their lifetimes<sup>2,3</sup>.

In majority of cases cause of epistaxis cannot be found, this variety of epistaxis is called as idiopathic or spontaneous epistaxis. Epistaxis can result either from localized or systemic diseases. Most causes are of local origin among which trauma and nose picking is the commonest especially in younger patients<sup>1,5</sup>.

Treatment of epistaxis depends upon detailed history, clinical examination and relevant investigations. In minor nose bleed conservative measures will be sufficient to stop the bleeding. In severe nose bleed other measures in the form of chemical cauterization, nasal packing, balloon tamponade or posterior endoscopic cauterization of bleeding point can be performed. The patients in which above measures fail, surgery in the form of ligation or embolization of bleeding vessels can be performed.

## Material and methods:

One hundred cases of epistaxis were studied in ENT Department at Lahore General Hospital Lahore, from March 1999 to December 2002. Most of the cases were referred from casualty department and few from outpatient department.

All the patients were evaluated by taking detailed history, clinical examination and relevant investigations. Important aspects of history included age, sex, occupation, site of bleeding, time and duration of bleeding, blood loss, provocative cause, family history and social history. Examination of Ear, Nose and Throat, as well as general physical and systemic examination was performed.

Laboratory investigations included, complete blood count (CBC), bleeding and clotting profile in all patients. Platelet count, coagulation factors, and serology in selected cases. Radiological studies included x-ray Para nasal sinuses, postnasal space, chest, skull base x-ray and CT-Scan/MRI was performed if required. Angiography was performed in selected cases.

Treatment depends upon certain factors i.e. age of the patient, cause and site of bleeding, amount of blood loss

and general condition at presentation. Every patient was managed individually keeping in view the above parameters.

In minor nose bleed conservative measures were sufficient to stop the bleeding i.e. reassurance to the patient, cold sponging, nose pinching or placing a cotton pledget soaked in local anesthetic and vasoconstrictor for 5-10 minutes.

In severe epistaxis conservative measures were ineffective, chemical cauterity was used where bleeding point was localized. Anterior nasal packing was carried out where bleeding point was not localized or did not respond to cauterity.

Posterior nasal packing with folleys catheter along with anterior nasal packing was done in patients with posterior nasal bleeding. Postnasal pack was employed after surgery and when nasal packing with folleys catheter failed. Ligation of the bleeding vessels was carried out when non-surgical methods failed. Underlying cause was also treated when identified.

In cases of moderate to severe bleeding patients were immediately hospitalized, a good I/v line was maintained and blood samples drawn for baseline hemoglobin, blood grouping and cross matching. Pulse and blood pressure of the patients was monitored and amount of blood loss measured. After assessment resuscitation was done according to individual demand of the patient.

Antibiotic was used in cases with nasal packing and those who underwent surgery. Sedatives were also used with caution especially in hypertensive and old age patients.

## Results

Out of hundred cases, 64 were male and 36 female. The age of the patients ranged from 2 to 75 years with average age of 45. Various aetiological factors identified are shown in table 1. Among these trauma was the commonest accounting for 35% followed by infection 27%, idiopathic 17%, hypertension 15%, tumors 2%, drugs, renal disease, maggot nose and DNS 1% each. 96 out of hundred cases were treated with non-surgical methods and only 4 patients

were treated surgically. In surgically treated patients one patient was female and three were male.

Among non-surgical methods, anterior nasal packing was carried out in 44 patients, chemical cautery 32, folleys catheter with anterior nasal packing 11, postnasal plug along with anterior nasal packing in 3 and 6 patients were treated by conservative measures alone. Among surgical methods excision of angiofibroma was carried out in 2 patients, one patient required ligation of external carotid artery and anterior ethmoidal artery and one patient underwent septal surgery (Table 2).

In this study surgically treated patients were found to have longer hospital stay (8 days) than non-surgically treated patients (4 days) (Table 3). Blood transfusion was required in 66% of surgically treated while 18% in non-surgically treated patients (Table 4).

Table 1 Aetiological factors

Aetiological factors	n=
Trauma	35
Infection	27
Idiopathic	17
Hypertension	15
Neoplasm	02
Maggot	01
Drugs	01
DNS	01
Renal disease	01

Table 2. Treatment modalities

Treatment modalities	n=
<b>Non surgical</b>	
Anterior nasal packing	44
Chemical cautery	32
Folleys catheter with anterior nasal packing	11
Posterior nasal packing along with anterior nasal packing	3
Conservative measures	6
<b>Surgical</b>	
Excision of angiofibroma	2
Ligation of external carotid artery and anterior ethmoidal artery	1
Septal surgery	1

Table 3. Hospital stay

Treatment modalities	n=
Chemical cautery	30 minutes
Nonsurgical	4 days
Surgical	8 days

Table 4. Transfusion requirement

Treatment modalities	%age requirement
Surgically treated	66
Non-surgically treated	18

## Discussion

In this study majority of our patients were of younger age group between 10 to 40 years, with male predominance (64%). This data closely correlate with Talat study<sup>6</sup> but

was in contrast to the age pattern seen in published material from the west where more than 50% patients were older than 50 years<sup>7, 8, 9, 10</sup>.

The commonest cause in this study was found to be trauma (35%), which is similar to other reported series,<sup>5, 6, 11</sup> but not so in Jackson KR<sup>4</sup> study where idiopathic variety was commonest. Second most common cause found in this study was upper respiratory tract infections (17%). These results closely correlate with Maqbool<sup>11</sup> study in which URTI was seen in 21.8% of the patients, but was in contrast to Talat<sup>6</sup> study where prevalence of inflammatory disease process as a cause of epistaxis was not so marked.

Idiopathic variety of epistaxis was seen in 17% of the patients in which no predisposing or exciting cause could be found. This is comparable to other studies,<sup>5, 6</sup> but differ from observation of Small et al<sup>3</sup>. Hypertension as the cause of epistaxis was seen in 15% of the patients (previously diagnosed cases). Weiss<sup>12</sup> in his study concluded that epidemiologically hypertension was not related to a greater incidence of epistaxis. Treatment of hypertension in these patients was the necessary part of initial treatment.

Two patients presented with recurrent epistaxis and nasal obstruction. Examination revealed a globular mass in the nasopharynx. Both of the patients were in the age group between 15 to 20 years. CT-Scan and angiography was done to know the exact extent of tumor and feeding vessels. Excision of these tumors was carried out through transpalatal approach and biopsy revealed angiofibroma. Other studies reported surgery to be the mainstay of treatment and transpalatal approach was found to be the best for tumor confined to nasopharynx<sup>13, 14</sup>.

One patient presented with recurrent epistaxis and examination of nose revealed DNS. O'Reilly et al<sup>15</sup> in his study concluded that the anterior epistaxis was commonly attributed to septal deviation.

Maggot nose was seen in one patient, which was treated by local removal of maggot and antibiotic.

A uremic patient was referred from urology department. In uremia epistaxis was due to dysfunction of platelets. Anterior nasal packing was done to stop the bleeding. One patient had a history of prolong use of NSAIDS for joint pain. NSAIDS produced a significant platelet dysfunction, which should be considered in multifactorial etiology of epistaxis.<sup>16</sup>

In this study of hundred patients, six cases presented with minor nosebleed and conservative measures were found sufficient to stop the bleeding. Similar results were seen by Kremple et al<sup>17</sup>.

Chemical cautery was used in 32 patients and found to be effective in 26 with success rate of 86.6%. Similar success rate was reported in other studies<sup>17, 18</sup>.

Anterior nasal packing (impregnated with BIPP) was carried out in 44 patients in whom the bleeding point could not be found or it did not respond to cautery. It was found to be very effective method having the advantage of easy

placement and removal. Its main disadvantage was discomfort to the patient. This observation was exactly the same made by Monux<sup>19</sup> in his study.

Folleys's catheter with anterior nasal packing was used in 11 patients presenting with profuse and posterior nasal bleeding. It was very effective, easier to insert and less traumatic than gauze packs. Mc Ferran and Edmonds<sup>20</sup> advocated that inflatable balloon catheter were less traumatic than gauze packs and were easy to insert.

Posterior nasal packing along with anterior nasal packing was done in 3 patients, one patient failed to respond to other treatment modalities and two patients had surgery (excision of angiofibroma). It was observed that postnasal packs were very effective but required general anesthesia and longer hospitalization as mentioned in other studies<sup>21, 22</sup>

Surgical intervention (ligation of external carotid and anterior ethmoidal artery) was carried out in one patient, in which other treatment modalities failed. It was successful but was associated with longer hospital stay. Kotech et al<sup>23</sup> in his study noted that 5-15% patients required some sort of surgical treatment, Arterial ligation required when conventional methods to stop the bleeding failed.

Septal surgery was performed in a young patient having DNS and non-surgical methods failed to stop the bleeding. Premachanda<sup>22</sup> in his study found that patient with gross DNS often could not be managed by selected cautery or packing and the septal deviation must be corrected to arrest the hemorrhage.

The hospital stay in different comparative studies was higher in surgically treated patients than the patients treated non-surgically<sup>24, 25, 26</sup> In the present study surgically treated patients stayed in the hospital between 6-16 days with a mean of 8 days whereas non-surgically treated patients had a short hospital stay with a mean of 4 days. Recurrence and anemia were the major complications. There was no mortality during the procedures adopted to stop the bleeding.

### Conclusion

Epistaxis is a common clinical problem in our country, more common in males than females. Trauma is the most common cause of epistaxis followed by infections and idiopathic variety. Most of the patients can be managed well with non-surgical methods with less hospital stay and less complications. Surgical treatment should be reserved only for profuse epistaxis, refractory to other treatment modalities. Arterial ligation is carried out when conventional methods to stop the bleeding fail.

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