

CLINICAL STUDY OF ETIOPATHOGENESIS AND MANAGEMENT OF EPISTAXIS AT A TERTIARY CARE HOSPITAL

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Abstract

Background: Acute hemorrhage or bleeding from nostril, nasal cavity, nasopharynx is called epistaxis. Management of epistaxis include direct therapies such as endoscopic control, indirect therapies such as nasal packing, surgical management such as ligation, embolization, septal surgeries. Present study was aimed to study etiopathogenesis and management of epistaxis at a tertiary care hospital. **Material and Methods:** Present study was single-center, prospective, observational study, conducted patients with complaint of epistaxis. **Results:** In our study out of 200 Cases, majority were male (67.5 %) & Male: Female Ratio was 2.2:1. The age of patients varied from 2 to 78 Years. The age incidence was more in 21-40 years (39%) and 41-60 (36%) years. Etiology of Epistaxis was divided into local and general causes. Local causes included Trauma (33%), Idiopathic (22.5 %), Infections (9%), Tumours (10%), Secondary to DNS (3.5 %) General causes included Hypertension, Bleeding & Coagulation disorders (6.5 %), Drug induced (2%). Trauma constituted majority of cases (33%) followed by Idiopathic cause (22.5%). Most common causes of epistaxis were trauma (33%) followed by Idiopathic cause (22.5 %) were common in 21-40 years age group. Most cases of idiopathic epistaxis were managed conservatively (30 cases), while few required interventions such as anterior nasal packing (9 cases) & electrical cauterization of bleeder (4 cases). Majority of cases are managed by conservative management 85 cases (43%) followed by anterior nasal packing 53 cases (27%). Nasal Bone reduction was done for 18 cases (9%). **Conclusion:** Epistaxis is a common clinical condition seen in all age groups more in the adolescents and young adults. Trauma appeared to be the common cause for epistaxis, followed by idiopathic, hypertension.

INTRODUCTION

Acute hemorrhage or bleeding from nostril, nasal cavity, nasopharynx is called epistaxis. It is derived from Greek word *EPISTAZEIN*.^[1] It is a sign and not a disease per se and attempt should always to be made to find any local or systemic cause. It is a common condition that presents as life threatening emergency dealt by otolaryngologists. There are two types: anterior (the most common in below 40 years), and posterior (above 40 years) and primary and secondary type.^[2]

Fresh blood and clotted blood can also flow down into the stomach and cause nausea and vomiting. Epistaxis can occur at any age but there is bimodal age distribution with peaks in childhood and then in elderly population between 60 to 80 years. It is rarely seen in infants and less

common in early adult.

There is slightly male preponderance. 5 to 10% of the population experiences an episode of epistaxis each year. 10 % of those will see a physician 1% of those seeking medical care will need a specialist. Epistaxis can be unilateral or bilateral. Among case of epistaxis some are minor self-limiting episodes, some are controlled with first aid measures, few require medical attention for underlying cause, few require hospitalization for surgical intervention for control of bleeding.³ Management of epistaxis include direct therapies such as endoscopic control, indirect therapies such as nasal packing, surgical management such as ligation, embolization, septal surgeries. Present study was aimed to study etiopathogenesis and management of epistaxis at a tertiary care hospital.

MATERIAL AND METHODS

Present study was single-center, prospective, observational study, conducted in department of ENT, at MGMH Warangal, India. Study duration was of 2 years (July 2018 to July 2020). Study approval was obtained from institutional ethical committee.

Patients referred to MGMH Warangal among inpatient, outpatient and Emergency department with complaint of Epistaxis, willing to participate in present study were considered for study.

Study was explained to patients in local language & written consent was taken for participation & study. All patients who required surgical intervention was admitted, except those who required chemical cauterization which was done in the outpatient department.

All patients underwent history taking, Clinical examination, routine tests (Complete blood picture with total leucocyte count and platelet count, Bleeding and Clotting time estimation, Erythrocyte Sedimentation tests, Renal function tests, Random blood sugar, HIV and HbsAg), X -Ray Paranasal sinuses, Diagnostic nasal endoscopy, if required

Liver function tests, Ultrasonogram of abdomen, CT scan of Paranasal sinuses.

All patients of Idiopathic and Hypertensive Epistaxis and those patients whose bleeding is not controlled by conservative measures and nasal packing are subjected to additional tests like-Coagulation profile, and if found abnormal, serum levels of specific clotting factors are estimated.

Patients treated in the out patient basis by chemical cauterization whenever necessary. with Freshly prepared 10 % silver nitrate solution. Acute Rhinitis, Rhinosinusitis and Atrophic rhinitis cases are treated appropriately by medical treatment. Patients with foreign body nasal cavity, foreign body is removed.

Those patients who required anterior or posterior nasal packing was done in the Emergency operation theatre. Those who required Endoscopic Electro cauterization and Nasal Bone Correction was done in the main operation theatre on the second or third day, i.e. after removal of nasal packing. Data was collected and compiled using Microsoft Excel, analysed using SPSS 23.0 version. Statistical analysis was done using descriptive statistics.

RESULTS

In our study out of 200 Cases, majority were male (67.5 %) & Male: Female Ratio was 2.2:1. The age of patients varied from 2 to 78 Years. The age incidence was more in 21-40 years (39%) and 41-60 (36%) years.

Table 1: Sex and Age Distribution

Age Group	Female	Male	Total	Percentage
0-20	10	20	30	15%
21-40	31	47	78	39%
41-60	18	54	72	36%
61-80	6	14	20	10%

Etiology of Epistaxis was divided into local and general causes. Local causes included Trauma (33%), Idiopathic (22.5 %), Infections (9%), Tumours (10%), Secondary to DNS (3.5 %) General causes included Hypertension, Bleeding & Coagulation disorders (6.5 %), Drug induced (2%). Trauma constituted majority of cases (33%) followed by Idiopathic cause (22.5%).

Table 2: Distribution of Various Aetiologies

Etiology	Male	Female	Grand Total	Percentage
Trauma	47	19	66	33%
Idiopathic	28	15	43	22.5 %
Hypertension	16	8	24	12%
Infections	11	7	18	9%
Tumours	13	7	20	10%
Secondary to DNS & Septal Spurs	5	2	7	3.5 %
Bleeding & Coagulation disorders	9	4	13	6.5 %
Drug Induced	3	1	4	2 %
Post Septoplasty	2	2	4	2 %
Secondary to Rhinolith	1	0	1	0.5 %
Total	135	65	200	100%

Most common causes of epistaxis were trauma (33%) followed by Idiopathic cause (22.5 %) were common in 21-40 years age group.

Table 3: Distribution of Various Etiologies and Age Incidence

Age Group/ Etiology	Trauma	Idiopathic	Hypertension	Infections	Tumours	Secondary to DNS & Septal Spurs	Bleeding & Coagulation disorders	Others	Total
0-20	16	0	0	9	1	0	2	2	30
21-40	30	16	5	7	9	7	3	1	78
41-60	19	23	7	2	8	0	8	5	72
61-80	1	4	12	0	2	0	0	1	20
Total	66	43	24	18	20	7	13	9	200

Most cases of idiopathic epistaxis were managed conservatively (30 cases), while few required interventions such as anterior nasal packing (9 cases) & electrical cauterization of bleeder (4 cases).

Table 4: Treatment Methods for Idiopathic Cases

Treatment	No. of Cases treated
Conservative Management	30
Anterior Nasal Packing	9
Electrical Cauterization Of Bleeder	4
Grand Total	43

Tumours account for 20 cases (10%) among which Benign Hemangioma were 9 cases (45%) and among Malignancy inverted papilloma are 6 cases (30%) which were managed by Endoscopic excision and Anterior Nasal packing. All Hemangioma over Septum (30%) are managed by Endoscopic excision and cauterization of base and of middle turbinate are managed by Endoscopic electric cauterization.

Table 5: Incidence of Tumours

Diagnosis	Male	Female	Grand Total	Percentage
Hemangioma over Middle turbinate Right	2	1	3	15%
Hemangioma over Septum	3	3	6	30%
Inverted Papilloma Right Nasal Cavity	4	2	6	30%
Low grade Mucoepidermoid Sinonasal Malignancy over right side of Septum	1	0	1	5%
NPF	3	1	4	20%
Total	13	7	20	100%

Majority of cases are managed by conservative management 85 cases (43%) followed by anterior nasal packing 53 cases (27%). Nasal Bone reduction was done for 18 cases(9%).

Table 6: Various Treatment Methods

Treatment	Male	Female	Grand Total	Percentage
Conservative Management	57	28	85	43%
Chemical Cauterization	1	2	3	2%
Endoscopic Excision & Electrical Cauterization	4	7	11	6%
Anterior Nasal Packing	39	14	53	27%
Anterior & Posterior Nasal Packing	3	2	5	3%
Endoscopic Excision & Anterior Nasal Packing	11	6	17	9%
Nasal Bone Fracture Reduction	14	4	18	9%
Removal under GA	1		1	1%

DISCUSSION

In the present study age of the patients ranged from 2 to 78years, more common among age group 21-40 years in present study is Comparable to Swapna UP et al.,^[4] The present study shows that epistaxis is most common in the age distribution 2nd decade and once again the incidence increases after 4th decade onwards. Varshney et al.,^[5] J. Sreenivasa Rao.,^[6] Akinpelu OV et al.,^[7] study has most common age group 41-50 yrs. J. Sreenivasa Rao.,^[6] has reported (60%) cases and Varshney et al.,⁴ reported (73%) cases, Bhadouriya SS.,⁸ has most common age group as 11-20yrs.

The number of males in the present study was 138(69%) and the females were 62(31%) with a male to female ratio of (2.2:1) which is comparable to study done by Gulshan Hussain,^[9] Vivek Kumar,^[10] Irene Monjas,^[11] & Sampiethaya S et al.^[12]

In the present study incidence of trauma accounts for (33%) cases which is on the higher side which is similar to study by Bhadouriya SS^[8] (35%). A similar Study by Akinpelu OV et al.,^[7] showed traumatic epistaxis in (70.9%) of cases, Varshney et al.,^[5] study showed (5.7%) cases of trauma, Gulshan Hussain^[9] study showed (50.79%) cases, In Kumar V et al.,^[10] study showed (19.11%) cases of trauma, Pandey A et al.,^[13] showed (11.11%)

cases of trauma, Sharma.K et al.,^[14] (16.46%) cases of trauma, J.Sreenivasa Rao et al.,^[6] (20%) cases. This shows increased trauma cases due to RTA & assaults.

In present study idiopathic cases account of 43 cases (22%) most patients are age group 41-69 yrs. Values are comparable with similar study done by Waseem Ahmad Shah.,^[15] (25.45%) & Chaiyasate SS.,^[16] (25.45%).

But in studies conducted by Varshney.,^[4] (35.23%) cases, Sampigethaya et al.,^[12] (8.3%) cases, Akinpelu OV et al.,^[7] (6.6%) cases, Bhadouriya SS.,⁸ (7%) cases, Ramesh Parajuli^[17] (38.09%), Swapna UP et al.,^[4] (6%), J.Sreenivasa Rao et al.,^[6] (6%) & Vivek Kumar et al.,^[10] (7.84%),

In present study hypertension accounts for 24 cases (12%) which is comparable to similar study done by Bhadouriya SS^[8] (10%). Varshney et al.,^[5] (31.8%), Sampigethaya S et al.,^[12] (20%), J.Sreenivasa Rao,^[6] (24%),Waseem Ahmad Shah et al.,^[15] (25.43%), Ramesh Parajuli^[17] (27.38%), Pandey.A et al.,^[13] (44.44%) & Sharma.K et al.,^[14] (59.20%), This is due to increase in non-communicable diseases like obesity, hyperlipidemia, diabetes, stressful life.

In present study infections accounts for 18 cases(9%) which is comparable to similar study done by J.Sreenivasa Rao ^[6] (10%), Sampigethaya S et al.,^[12] (12%). In study done by Pandey A et al.,^[13] (44.44%), Sharma. K et al.,^[14] (4.10%), Bhadouriya SS ^[8] (4%), Swapna UP et al.,^[4] (22%) & Varshney et al.,^[5] (19.32%) In present study tumours accounts for 20cases(10%) which is comparable to similar study done by Vivek Kumar et al.,^[10] (8.33%), Bhadouriya SS^[8] (9%), J.Sreenivasa Rao^[6] (8%), Sampigethaya S et al.,^[12] (13%), Swapna UP et al.,^[4] (12.5%) & Waseem Ahmad Shah et al.,^[15] (0.87%).

In present study DNS and septal spurs accounts for 7 cases (4%) which is comparable to similar study done by Vivek Kumar et al.,^[10] (5.88%), BhadouriyaSS^[8] (5%), J.Sreenivasa Rao^[6] (4%) & Sharma.K et al.,^[14] (3.7).

In present study bleeding disorders accounts for 13 cases (7%) which is comparable to similar study done by Pandey A et al.,^[13] (6.67%), Waseem Ahmad Shah et al.,^[15] (6.14%) & Ramesh Parajuli^[17] (8.33%). In present study drug induced cases accounts for 4 cases (2%) which is comparable to similar study done by J.Sreenivasa Rao^[6] (2%), Bhadouriya SS ^[8] (2%) & Sampigethaya S et al.,^[12] (1.7%).

In present study post septoplasty cases account for 4 cases (2%), where as in study done by Gulshan Hussain^[9] post septoplasty cases account for (1.27%), J.Sreenivasa Rao^[6] post septoplasty cases account for(4%). In present study cases secondary to foreign body account for 1% cases, where as in other studies cases account for Vivek Kumar et al.,^[10] (3.43%), J. Sreenivasa Rao ^[6] (4%), Bhadouriya SS^[8] (6%) & Pandey A et al.,^[14] (8.80%).

In present study 85 cases (43%) are managed conservatively which is comparable to similar study by J.Sreenivasa Rao^[6] (42%), Sharma.K et al.,^[14] (50%) In present study chemical cauterization was done in 3 cases (2%), in other studies chemical cauterization accounts for 7.21% cases Gulshan Hussain^[9], 6% cases J.Sreenivasa Rao^[6] & 21% cases Bhadouriya SS^[8].

In present study Electric cauterization was done in 11cases (6%), In other studies electric cauterization accounts for 0.5% cases in Gulshan Hussain^[9], electric cauterization was done in 6% cases in study by J.Sreenivasa Rao^[6], in 3% cases in study by Bhadouriya SS^[8], in 2.38% cases in study by Ramesh Parajuli^[17] & in 5% cases in study by Sampigethaya S et al et al.,^[12]. In the present study, Cauterization (Chemical+Electric) was done for 14 Cases (7%), which is similar to Study done by Sharma.K et al.,^[14] (4.9%)

In the present study, anterior nasal packing was done for 53Cases (27%), which is similar to study done by J. Sreenivasa Rao^[6] (30%) & Waseem Ahmad Shah et al.,^[15] (31.57%). Anterior and Posterior nasal packing was done for 5 Cases (3%), which is similar to Study done by J.Sreenivasa Rao.,^[6] (4%), Bhadouriya SS.,^[8] (4%).

In the present study, Endoscopic Excision of tumours was done for 18 Cases(9%). In similar study, by Bhadouriya SS^[8] endoscopic excision was done for (3%)cases, 4 % J.Sreenivasa Rao^[6], 2.38% cases in study by Ramesh Parajuli^[17], 4.7% cases in study by AkinpeluOV et al.,^[7]

In the present study endoscopic Excision and internal maxillary artery ligation was done for 1 Cases (1%), where as in similar Study done by Akinpelu V et al.,^[6] internal maxillary artery ligation was done in 2% cases, and in study done by Vivek Kumar et al.,^[14] internal maxillary artery ligation was done in (1.96%) cases.

We should manage a case of epistaxis in an orderly manner and every effort should be made to find out the cause before deciding to go to the next modality of management. Endoscopic surgical technique for epistaxis control requires good knowledge of vascular supply of nose. Every center should have a management protocol for epistaxis for proper standardization and evidence-based treatment

CONCLUSION

Epistaxis is a common clinical condition seen in all age groups more in the adolescents and young adults. Trauma appeared to be the common cause for epistaxis in this study followed by idiopathic, hypertension. Recurrent epistaxis was mostly associated with presence of tumour mass in nasal cavity. Management of epistaxis with a standard approach is vital for favourable outcome in emergency situations. Ascertaining the etiology of

epistaxis and locating the source of bleeding must be done meticulously.

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