

Epistaxis - A Study of Etiologies and Management at a Tertiary Care Hospital of Urban Sindh

Muhammad Shafi, Mushtaque Ali Memon, Arsalan Ahmed Shaikh

ABSTRACT

OBJECTIVE: To highlight different etiologies of epistaxis and their management at the setup of a tertiary care level hospital of urban Sindh.

STUDY DESIGN: Descriptive Study.

SETTING: Department of E.N.T. and Head & Neck Surgery, Liaquat University Hospital Hyderabad from June 2011 to May 2013.

METHODOLOGY: A prospective study of 437 patients presented with epistaxis due to different etiologies and its management at the department of E.N.T. and Head & Neck Surgery, Liaquat University Hospital Hyderabad. The patients of all age groups of both the genders were enrolled. All the data was collected on a pre-designed Performa equipped with all the relevant details. Finally all the collected data was then fed into SPSS VER. 16 to have statistical assistance and to construct different graphs and tables.

RESULTS: Spanning over two years period, this study comprised 437 cases. 263(60.2%) were male and 174(39.8%) were female. The age range was 3-77 years with mean age to be 31.66 years. The commonest cause in this study was trauma which affected 155(35.6%) patients. Most of the patients i.e. 324(74.1%) reached us through emergency department. Site of bleeding was anterior in most of the patients, accounting 229(52.4%) patients. Maximum numbers of patients i.e. 163 (37.3%) were managed successfully by anterior nasal packing.

CONCLUSION: Epistaxis constitutes the main bulk of emergency cases attending the E.N.T. department. This study observed trauma to be the commonest cause of epistaxis in our set up. Maximum number of cases required anterior nasal packing as the only measure to be effective and successful from management point of view.

KEY WORDS: Epistaxis, Etiology, Management, Nasal trauma, Nasal packing.

INTRODUCTION

The word "Epistaxis" is derived from the Greek term "Epistazein" which means "to bleed from nose". It is a feature of multiple local and systemic disorders. It is estimated that about 60% of the population experiences epistaxis at some point in their life¹. Though a common presentation and one of the major E.N.T. emergencies, it may prove to be life threatening if not managed properly. The causes of epistaxis may be focal, local or systemic. Focal causes pertain to etiologies located focally in nose. They include trauma to nose, foreign bodies, rhinoliths, nasal myiasis, chronic granulomatous conditions and various benign and malignant tumors of nasal cavity. Local causes include Sino nasal pathologies in the neighborhood of the nose which approach and affect the nose. They include infections and neoplasms of Para nasal sinuses and Nasopharynx. Systemic causes are the conditions of distant organs and systems of the body which affect the nose to cause epistaxis. These include various blood dyscrasias and cardio vascular, hepatic and

renal disorders which may present with expistaxis. In addition to these diverse etiologies, there is still a large group of patients in whom the etiology of epistaxis could not be identified despite significant endeavors. And this group has been labeled as idiopathic.

The management of a patient with epistaxis is usually dictated by the etiology of epistaxis. However, initially the prime purpose of the management is to stop bleeding and to compensate the blood loss if it is substantial and posing threat to life. The initial management to stop the bleeding may be labeled as conservative management. And it includes pinching of nose, cold compresses at nose, chemical or electrical cautery of the bleeding points and anterior or posterior nasal packing. This initial conservative management for most of the times is sufficient and successful in stopping the bleeding. However when it fails or proves insufficient due to the presence of significant medical or surgical pathologies, then further management is tailored in the light of these pathologies. And these

management regimes are then labeled as medical and surgical managements respectively. In addition to the management directed against combating the etiology, another management is collaterally operational which is directed to compensate the excessive blood loss to prevent the hypovolemic state.

Since this is a study of epistaxis which we encountered in our tertiary care set up, therefore different etiologies and their management in our set up is described as they happened. Some of the findings are less or none and some are present and more in this set up when compared with others. For example, due to tertiary care set up, more of traumatic cases are reported. This prospective study was carried out to highlight different etiologies of epistaxis along with their management at a tertiary care level hospital of urban Sindh.

PATIENTS AND METHODS

This is a prospective study of the patients presented with epistaxis and managed at the department of E.N.T. and Head & Neck Surgery, Liaquat University Hospital Hyderabad from June 2011 to May 2013. All the data was collected on a pre-designed Proforma which included demographic profile, possible etiology, anatomical location of bleeding site, mode of patient's access, basic vitals, bleeding status and management details. The pathway of access of the patients was trifocal i.e. they attended either through emergency, through outpatient department or they reached us through referral from other departments or hospitals. On coming in contact with the patient, relevant history was taken and in addition to taking measures to control the bleeding, initial assessment regarding the hemodynamic status of the patient and the gravity of the bleeding was also done. If the patient was stable and bleeding posing no any immediate threat, then history was taken in detail. However in the face of heavy bleeding posing threat to life, then preference was given to control the bleeding and rectifying the hypovolemia. Once got controlled situation, detailed examination was undertaken to locate the site of bleeding and to identify the possible cause of epistaxis including any trauma, infection, any drug induced etiology, any nasal pathology or any local or systemic disease, possibly responsible for epistaxis. Special hematological and radiological investigations were ordered on clinical suspicion regarding any specific etiology of the epistaxis. Similarly, a note of the management procedures to control the epistaxis was also made. It included any conservative measures like

nose pinching, cautery and anterior or posterior nasal packing beside certain specifically directed medical or surgical management procedures. All the collected data was then fed into SPSS VER. 16 to have statistical assistance and to construct different graphs and tables.

RESULTS

This was a prospective study which spanned over two years from June 2011 to May 2013. During the study period, a total of 437 patients presented with epistaxis to our department. 263(60.2%) were male and 174 (39.8%) were female, showing male to female ratio to be 1.51:1. The age range was 3-77 years with mean age to be 31.66 years. Grouping the patients into 10 years stacks, maximum number of the patients in a single group were 87(19.9%) in the age group 11-20 years (Figure I). In the current study, a total of 20 causes of epistaxis were recognized in addition to a substantial number of the patients with no obvious etiology (Table I). This latter group was then labeled as idiopathic. In our study the idiopathic group comprised 61(14%) patients and it occupied the position of second commonest cause of epistaxis. The commonest cause in this study was trauma which affected 155 (35.6%) patients. However in this study, four distinct forms of trauma were recognized i.e. accidental trauma, assault trauma, digital trauma and trauma due to nasal ornaments. Among these four subgroups of trauma etiology, most of the patients were the victims of sustaining accidental trauma and they accounted 75(17.2%) patients. As regards the patients' mode of access, it was trifocal. Most of the patients i.e. 324 (74.1%) reached us through emergency department. This was followed by those referred from other departments or hospitals i.e. 66 (15.1%). Least number of the patients i.e. 47(10.8%) accessed us from outpatient department (Figure II). Site of bleeding was anterior in most of the patients. It accounted 229(52.4%) patients in comparison to posterior bleeding which was documented in 61(14%) patients. The site of bleeding remained unrecognized in 147(33.6%) patients.

The mode of management was a modified form of what was adopted by Fatakia et al². The management was done under the headings of initial conservative management, medical management and surgical management which in this study accounted to be 319 (73%), 19(4.3%) and 99(22.7%) respectively. The initial conservative management was followed in a cascading pattern and the achievements were depicted in table II.

TABLE I: ETIOLOGY OF EPISTAXIS

Etiology of Epistaxis	Frequency	Percentage
Trauma due to accidents	75	17.2%
Assault trauma	33	7.6%
Digital trauma	37	8.5%
Trauma due to nasal ornaments	10	2.3%
Septal deflections & spurs	24	5.5%
Septal perforations	11	2.5%
Rhinosinusitis	11	2.5%
Nasal myiasis	05	1.1%
Rhinolith	07	1.6%
Septal bleeding polyps	04	0.9%
Nasal masses	19	4.3%
Nasopharyngeal angiofibroma	06	1.4%
Systemic drug induced	09	2.1%
Local drug induced	05	1.1%
Nasal foreign bodies	18	4.1%
Post nasal surgical	14	3.2%
Atherosclerosis/hypertension	39	8.9%
Hepatic disorders	23	5.3%
Renal disorders	12	2.7%
Blood disorders	14	3.2%
Idiopathic	61	14.0%
Total	437	100%

FIGURE I: AGE GROUP OF PATIENTS

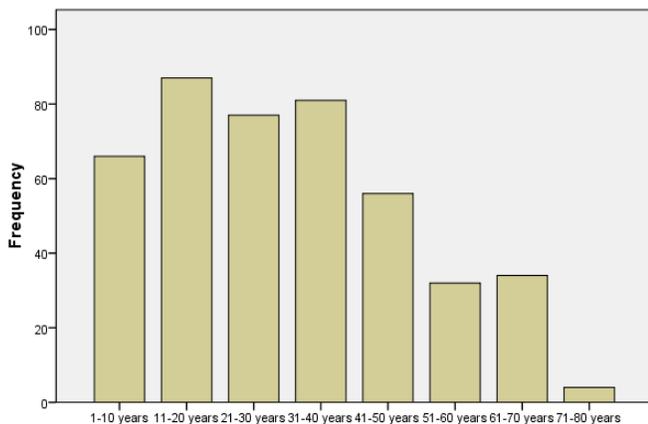
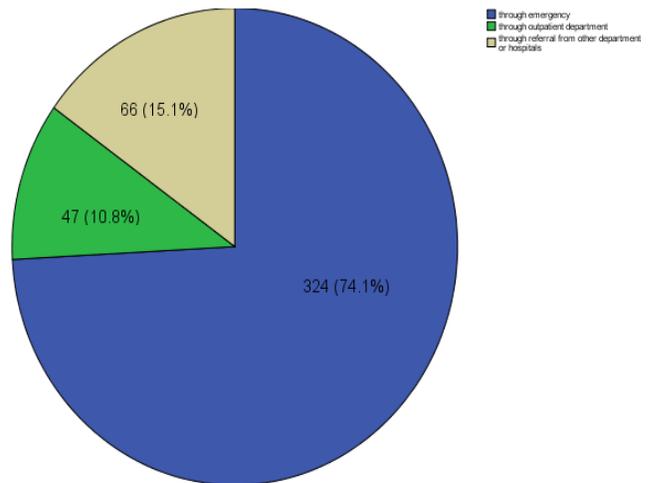


TABLE II: MANAGEMENT OF EPISTAXIS

Management Procedure	Frequency	Percentage
Conservative measures	319	72.99%
Nose pinching/cold compresses	60	13.72%
Chemical/electrical cautery	46	10.52%
Anterior nasal packing	163	37.3%
Post nasal packing	50	11.44%
Medical management	19	4.35%
Surgical management	99	22.65%
Surgical repair/correction	45	10.3%
Excision of nasal masses	19	4.35%
Foreign body removal	18	4.11%
Removal of rhinolith	07	1.60%
Excision of nasopharyngeal angiofibroma	06	1.4%
Diathermy excision of bleeding polyps	04	0.91%
TOTAL	437	100%

FIGURE II: ACCESS PATHWAY



DISCUSSION

Epistaxis is the most common E.N.T. emergency³. In most of the studies in world literature males are declared to be predominant victims of epistaxis than females and the same consistent pattern is displayed in our study also. This may be because of males being more exposed to trauma and other environmental hazards than females due to the difference in their life style⁴. All the age groups of both genders are affected

by the epistaxis³ and the same has been endorsed in the current study. In this study it was observed that about 70% of the patients were below the age of 40 years and 30% were above the age of 40 years. This finding was in agreement with the study by Gilyoma⁵ and Eziyi⁶ but is in contrast with study by Kotecha⁷ who observed more than 70% of the patients to be above the age of 60 years. The low age incidence, as in ours, might be attributed to the more of the patients being victims of trauma which was usually more common in young age groups. Likewise the old age incidence might be attributed to the more of the patients being victims of vascular and neoplastic pathologies which were usually more common in old age groups.

Different studies in the world literature have reported different etiologies to be the commonest. Nasal trauma had been found to be the commonest cause of epistaxis in our study accounting 155(35.6%) of the patients. This was in agreement with the studies by Hussain⁴, Gilyoma⁵, Eziyi⁶, Siddiqui⁸, Maqbool⁹ and Abbas¹⁰ who also found trauma to be the commonest etiology of epistaxis in their studies accounting 159 (50.79%), 32(30.8%), 75(70.8%), 125(35.7%), 27 (49.07%) and 17(28.33%) patients respectively. No any etiology was detected in the studies by Varshney¹, Kotecha⁷, Arshad¹¹ and Kodiya¹² who reported Idiopathic to be the commonest etiology in their studies with statistics being 31(35.23%), 361(38.7%), 34 (31.19%) and 45(45.55%) respectively. Hypertension was the commonest etiology of epistaxis in the studies by Chaiyasate¹³ and Hanif¹⁴ with frequencies being 18 (32.72%) and 98(48%) respectively.

Looking universal throughout the studies in literature, anterior bleeding was more common than posterior bleeding^{1,4,8,13,14,15}. Our study also endorsed this observation with anterior bleeding occurring in 229 (52.4%) patients in comparison to posterior bleeding which was documented in 61(14%). The site of bleeding remained unrecognized in 147(33.6%) patients.

The management format in this study was a modified adoption from the study by Fatika et al³. The initial conservative management comprised cascading-measures with 60(13.7%) patients with epistaxis been controlled by pinching of nose and cold compresses. 46(10.5%) required cautery to control epistaxis because the bleeding point was identified and it was accessible for chemical or electrical cautery. For chemical cautery we used silver nitrate which proved very effective to stop the isolated bleeding points. Cautery was used to control anterior & accessible bleeding points by Hussain⁴ and Siddiqui⁸ in frequencies 14 (4.47%) and 50(14.3%) respectively. Where the bleeding was anterior and diffuse, anterior nasal packing was done to control the bleeding. We used polyfax

ointment and liquid paraffin soaked ribbon gauze to pack the nose which imparted satisfactory results without any untoward effects. In our study, anterior nasal packing was effective in controlling the epistaxis in 163 (37.3%) patients. Hussain⁴, Gilyoma⁵, Siddiqui⁸, and Kodiya¹² have reported the use of anterior nasal packing in their studies in 168 (98.2%), 40 (38.5%), 80(22.85%) and 13(52%) patients respectively.

We had to resort to post nasal packing in 50(11.4%) patients due to the bleeding being posterior. This looks to be out-numbering other studies on the subject but the reason might be more of the post nasal pathologies in this study. Hussain⁴ did post nasal packing in 3(1%), Gilyoma⁵ in 12(11.5%), Kotecha⁷ in 67 (9.3%), Siddiqui⁸ in 20(5.71%) and Kodiya¹² in 4(16%) patients.

Medical treatment was instituted in 19(4.3%) patients in this study. It was in the form of anti-coagulants, anti-hypertensive medications, blood transfusion and the specific therapies for nasal myiasis and hepatic and renal disorders. In medical disorders like blood dyscrasias, and hepatic and renal disorders, we deliberately avoided local interventions like cautery and nasal packing to avoid further damage to the nasal mucosa. We tried to control the bleeding in such situations by nasal pinching, cold compresses and local vasoconstrictor sprays along with systemic approach using anticoagulants and blood transfusion etc.

In this study, surgical management had to be instituted in 99(22.7%) patients because of the existing surgical problems. We had to employ various surgical interventions including surgical repair/correction of intra nasal defects, excision of nasal, para nasal and post nasal masses and removal of the foreign bodies and rhinoliths. Surgical intervention was employed by Varshney¹, Siddiqui⁸ and Arshad¹¹ in 26(29.55%), 145 (41.5%) and 20(18.35%) patients respectively.

CONCLUSION

Epistaxis constitutes the main bulk of the emergency cases attending the E.N.T. department. Prompt and vigilant attention with appropriate management avoids morbidity and potential mortality. We recommend that all the emergency units of the hospitals must be equipped with facilities to examine and manage the patients with epistaxis from the point of view of the provision of instruments and required accessories.

REFERENCES

1. Varshney S. Saxena RK. Epistaxis: A Retrospective Clinical Study. Indian J Otolaryngol. & Head & Neck Surg. 2005 Apr-Jun; 57(2):125-129.

2. Fatakia A, Winters R, Amedee RG. Epistaxis: A Common Problem. The Ochsner Journal. 2010; 10(3):176-178.
3. Iqbal SM, Hussain SI, Hirani I, Malik S. Etiology and management outcome of epistaxis in a tertiary care hospital- Our experience. Pak J Otolaryngol. Apr. 2008; 24(2):15-8.
4. Hussain G, Iqbal M, Shah SI, Said M, Sanaullah, Khan SA, Iqbal M, Zaman J. Evaluation of aetiology and efficacy of management protocol of epistaxis. J Ayub Med Coll Abbottabad 2006;18(4):62-65.
5. Gilyoma JM, Chalya PL. Etiological profile and treatment outcome of epistaxis at a tertiary care hospital in Northwestern Tanzania: A prospective review of 104 cases. BMC Ear, Nose and Throat Disorders 2011, 11:8.
6. Eziyi JAE, Akinpelu OV, Amusa YB, Eziyi AK: Epistaxis in Nigerians: A 3-year Experience. East Cent Afr J Surg. 2009; 14(2):93-98.
7. Kotecha B, Fowlerr S, Harkness P, Walmsley J, Brown P, Topham J. Management of epistaxis: a national survey. Ann R Coll Surg Engl 1996;78: 444-6.
8. Siddiqui R, Ghauri RA, Rafique M. Pattern of epistaxis and its treatment modalities: The Hyderabad experience. JLUMHS 2006 May-Aug; 5(2):58-61.
9. Maqbool M, Ahmed I, Hameed A. Trauma: the most common cause of epistaxis in children and young adults. Pak Postgrad Med J. Dec. 2000; 11(4):127-8.
10. Abbas N, Hussain I, Amjad M, Akhtar FP. Aetiological incidence of epistaxis in various age groups and sex at Mayo Hospital, Lahore. Ann King Edward Med Uni. Oct-Dec. 1998; 4(4): 18-9.
11. Arshad M, Ahmed Z, Ali L. Epistaxis: An experience with over 100 cases. RMJ. 2007;32(2):142-5.
12. Kodiya AM, Labaran AS, Musa I, Mohammed GM, Ahmed BM. Epistaxis in Kaduna, Nigeria: a review of 101 cases. African Health Sciences 2012 Dec; 12(4):479-482.
13. Chaiyasate S, Roongrotwattanasiri K, Fooanan S, Sumitsawan Y. Epistaxis in Chiang Mai University Hospital. J Med Assoc. Thai 2005; 88(9):1282 -6.
14. Hanif M, Rizwan M, Rabbani MZ, Chaudhri MA. Common causes of epistaxis – A two years' experience at Rawalpindi General Hospital. J Surg Pak. Jun 2001; 6(2): 2-3.
15. Khan MI, Marwat M, Khattak RA. Causes and management of epistaxis at a district hospital. Rawal Med J. 2003 Jan-Mar;38(1):48-51.



AUTHOR AFFILIATION:

Dr. Muhammad Shafi (*Corresponding Author*)

Assistant Professor, Department of E.N.T
Liaquat University of Medical & Health Sciences
(LUMHS), Jamshoro, Sindh-Pakistan.
E-mail: shafinabishaikh@yahoo.com

Dr. Mushtaque Ali Memon

Assistant Professor, Department of E.N.T
LUMHS, Jamshoro, Sindh-Pakistan.

Dr. Arsalan Ahmed Shaikh

Senior Registrar, Department of E.N.T
LUMHS, Jamshoro, Sindh-Pakistan.