



Epistaxis in the University of Port Harcourt Teaching Hospital: Aetiological Profile and Management

Ibekwe Matilda Uju^{1*} and O. Ikenga Victor²

¹*Department of Ear Nose and Throat Surgery, University of Port Harcourt Teaching Hospital, Port Harcourt, Nigeria.*

²*Department of Surgery, Rivers State University, Port Harcourt, Nigeria.*

Authors' contributions

This work was carried out in collaboration between both authors. Author IMU designed the study, performed the literature search, wrote the protocol and wrote the first draft of the manuscript. Author OIV managed the analyses of the study. Both authors read and approved the final manuscript.

Article Information

DOI:10.9734/JAMMR/2020/v32i430404

Editor(s):

(1) Dr. Bhat Sangeeta Govinda, Amrita Vishwa Vidyapeetham, India.

Reviewers:

(1) J. N. Nwosu, University of Nigeria, Nigeria.

(2) Neelima Gupta, Delhi University, India.

Complete Peer Review History: <http://www.sdiarticle4.com/review-history/55634>

Original Research Article

Received 19 January 2020

Accepted 25 March 2020

Published 31 March 2020

ABSTRACT

Background: Bleeding from the nose is one of the commonest emergencies that could present in a typical ear, nose and throat clinic. It is often a frightful experience for both the patient and relations, especially in severe cases.

Aim: To determine the aetiological profile, the management and outcome in patients that presented with epistaxis in University of Port Harcourt teaching hospital.

Patients and Methods: This was a retrospective study of patients with complaints of epistaxis that were managed within the period of January 2006 to January 2018 in the Ear, Nose and Throat (ENT) department, including referrals from the accident & emergency department and children emergency ward. Data on demographics, aetiology, associated clinical features, treatment modalities and outcome of such treatments were all collated. These were analyzed using IBM statistical package for social sciences SPSSversion 20and results presented in simple descriptive tables.

Results: There were altogether 196 patients studied, 95 males and 101 females, giving a male to female ratio of 1:1.06. The age range was from 1 to 81 years. Age group 30-39 was the most affected with 22.29% Aetiological factors were; hypertension in 9.2% trauma in 11.2%, idiopathic in

*Corresponding author: E-mail: ibekwe_uju@yahoo.com;

most; 58.2%, chronic rhinosinusitis in 18.4%. Conservative medical therapy was the commonest treatment modality; 68.38%. Anterior nasal packing in 26.5% while 4.1% had posterior packing. Anterior aspect of the nose was the commonest site of bleed recorded in 160 cases.

All the patients had a favourable outcome.

Conclusion: Epistaxis in this environment still presents as a common emergency and in the majority of the case, the cause is not known, however, trauma appears to be one of the commonest cause implicated in our setting. The young adults appear to be the ones mainly affected.

Keywords: Epistaxis; bleeding; chronic rhinosinusitis; aetiological profile.

1. INTRODUCTION

Epistaxis dates as far back as 1867 in the medical literature. And it is one of the commonest emergencies in otorhinolaryngology [1,2]. It is a common condition with a bimodal age distribution, occurs frequently in the young and the old [3,4]. It is known that about 60% of people in their lifetime experience epistaxis and 6% will require medical attention [5,6].

Epistaxis can be classified into anterior and posterior forms [7,8]. Anterior bleeds are responsible for about 80% of epistaxis and arises from the anterior septum also called little's area [9]. While posterior stems from posterior septal artery which forms the Woodruff's plexus [9]. Anterior bleed occurs more commonly among children and young adults and may sometimes be self-limiting; posterior bleeds, on the other hand, is seen more frequently in the elderly characterized by profuse bleeding and often requires nasal packing and sometimes arterial ligation [8].

It has a lot of precipitating factors and these are classified into local and systemic. The local factors include inflammatory, infective, trauma, some anatomic variations for example; septal deviations, chemical, climatic changes, neoplasm, foreign body etc. Systemic factors are hypertension, vascular heart disease, liver, kidney diseases etc [10]. Trauma, especially digital i.e. nose picking is the commonest cause of bleeds in children [9]. However systemic diseases such as hypertension and others affecting blood clotting and the integrity of blood vessels are more common risk factors in the adults [11]. It is also known that some medications such as nasal drops, sprays, blood-thinning drugs can cause epistaxis [12]. Epistaxis can be a one-time condition, however, it can also be recurrent in which case it could be due to the existence of a local nasal or nasopharyngeal disease such as polyps or other benign or

malignant lesions [13] Juvenile angiofibroma though not very common, can be a cause of recurrent epistaxis in children [14] It has also been documented that in up to 80-90% of the bleeds, the cause is unknown [9].

Interestingly, the treatment of this condition was recorded in literature as early as in 1901 with Adrenaline use for severe bleeds by McKenzie while the first surgical treatment was done in the mid nineteenth century for posterior epistaxis [15,16]. In the recent times however, the management of the epistaxis patient involves the usual airway, breathing and circulation protocol [7]. It also involves proper cleaning and the use of local anesthetic which helps in visualizing bleeding points, therefore, making cautery of such spots possible [9]. Most of these bleeds are managed by modalities such as; nasal compression by pinching, nasal packings and cautery. However some may be refractory to these treatments and therefore may require formal surgical intervention under general anaesthesia. These options include; diathermy, septal surgery, different arterial ligations, as well as embolization of vessels [17,18,19].

2. PATIENTS AND METHODS

This was a retrospective study of patients with complaints of epistaxis that were managed within the period from January 2006 to January 2018 in the Ear, Nose and Throat (ENT) department, including referrals from the accident & emergency department and children's emergency ward. They had their medical records which was the source of the data, retrieved. All the patients had investigations done to determine their haemodynamic states as well as those geared at making diagnosis of the underlying cause; namely complete blood counts, haemoglobin levels, platelet counts, bleeding time, clotting time, prothrombin time, electrolytes, urea and creatinine, liver function tests, radiological investigations such as computerized

tomograms of the paranasal sinuses etc. These are tailored to each individual patient's requirement. Patients with incomplete records were excluded from the study as well as patients that had nose bleed secondary to nasal surgeries of any kind. Ethical approval was sought and obtained from the hospital ethical committee. Data on demographics, aetiology, associated clinical features, treatment modalities and outcome of such treatments were all collated. These were analyzed using IBM statistical package for social sciences SPSS version 20 and results presented in simple descriptive tables.

3. RESULTS

There were altogether 196 patients that met the inclusion criteria and these were studied. There were 95 males and 101 females, giving a male to female ratio of 1:1.06. The age range was from 1 to 81 years. The Age group between 30-39 was the most affected with n=45, 22.29 while age 80 years plus were the least population

least affected (n=11, 5.61%) (Table 1) Aetiological factors were hypertension that was implicated in n=18, 9.2% trauma was seen in n=22, 11.2% In majority of the cases the cause was not known n=114, 58.2% The second commonest cause, however, was chronic rhinosinusitis in 18.4% of the patients (Table 2). Conservative medical therapy was the commonest treatment modality used for these patients n=134, 68.38%. About 52 patients, 26.5% was treated with anterior nasal packing while 4.1% had posterior packing done and chemical cautery in 1.02%. (Table 3) Anterior aspect of the nose was the commonest site of bleed recorded in 160 cases. The site could not be ascertained in 26 cases (Fig. 1). Posterior nose was the site in n=10, 5.10% there was only one case of blood transfusion recorded; 0.51%

All the patients had favorable outcome as the epistaxis was controlled and definitive treatment for the underlying cause instituted. There was mortality recorded in this study.

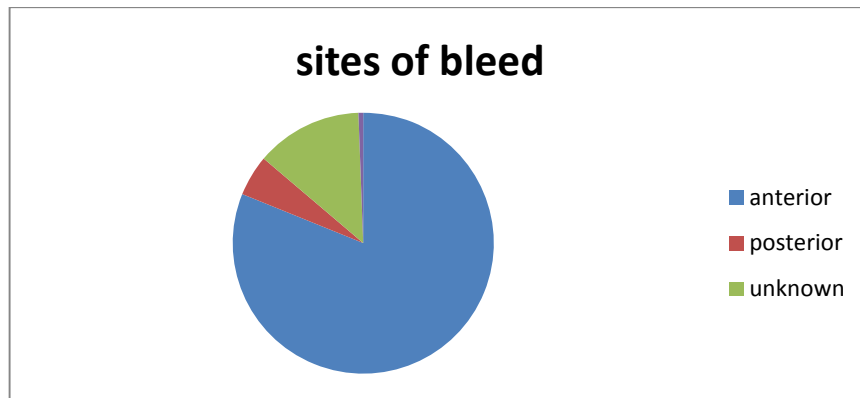


Fig. 1. Sites of bleed in the patients

Table 1. Age distribution of subject

Age group (years)	Frequency	Percentage (%)
0-9	18	9.18
10-19	23	11.74
20-29	30	15.31
30-39	45	22.96
40-49	16	8.16
50-59	15	7.65
60-69	20	10.20
70-79	8	9.18
80+	11	5.61
Total	196	100

Table 2. Aetiological factors

Variables	Frequency	Percentage %
Trauma	5	
-RTA	3	
-Falls	10	
-nose picking	4	
-Assault	22	11.2
Hypertension	18	9.2
Chronic rhinosinusitis	36	18.4
Tumors	6	3.1
Idiopathic	114	58.2
Total	196	100

Table 3. Treatment modalities in these patients

Variables	Frequency	Percentage
Medical treatment	134	68.38
-Antibiotics		
-anti-hypertensives		
-Antihistamines		
-Decongestants		
-Vitamin and analogues		
Nasal packing		
Anterior	52	26.5
Posterior	8	4.1
Chemical cautery(silver nitrate)	2	1.02
Total	196	100

4. DISCUSSION

The current study found females to be more affected than males among the study population of 196. This is in contrast with most other studies where the incidence is higher in males [10,20, 21]. The male preponderance was attributed to the males being more robust and engaging more in conditions that could predispose to epistaxis, however, this was not the case in the present study. There were no bimodal peaks in age presentation recorded unlike in some other studies [10,22]. The age group of 30-39 was the most affected followed by age 20-29 years. This was similar to the findings of some other studies in Nigeria; Akinpelu et al and Eziyi et al. had 21-40 years as the commonest age affected while Adoga et al. also had the 3rd decade mostly affected in their study [23,24,21]. Also, Gilyoma&Chalya in Northwestern Tanzania, had 31-40 years [25] as the group affected most.

In majority of the patients studied, the cause of the nasal bleed could not be ascertained, 58.2%. This was also noted by other researchers [21,26]. A study in India also could not find the cause in about 38.09% [22]. In contrast, however, Akinpelu et al. found idiopathic cause

to be third commonest cause [23]. Infective and inflammatory causes such as chronic rhinosinusitis ranked second in the present study. This condition does not readily feature as a cause of epistaxis in most of the available studies however Iseh et al. and Kodyia et al. in their studies in Sokoto and Kaduna respectively, both in Nigeria, found it the 4th commonest cause of epistaxis [27,28]. Trauma was seen as the third most common cause of nose bleed this study. It was also noted as a common cause in some other works; An earlier work in southwestern Nigeria showed trauma to be the highest cause in 70.9% of their cases. While it ranked the second commonest cause of epistaxis in some other studies [21,27,28]. The type of trauma however differed in the different studies, the present study recorded nose picking while Akinpelu had maxillofacial injuries secondary to RTA as the commonest type of trauma [23]. It is known that trauma as a cause is commoner in the young [29,30].

Systemic causes such as hypertension was seen as third commonest implicated factor in the study similar to other local studies [27,28]. It however appears to be second highest cause in some international works [31]. Hypertension has been

documented a common cause of epistaxis in the elderly and it is thought to be due to the increased fragility of the blood vessels that could arise from long standing elevated blood pressure in these patients [32]. Malignancies of the nose and nasopharynx were all implicated in the aetiology of epistaxis but in the present study it represents only 3.1% of the cases. In most of these works, therefore, idiopathic, trauma and hypertension appear to be commonly associated factors with epistaxis [10,21,25,27,31].

The anterior nose appears to be the site of the bleeds in most of the cases; 81.63% which is similar to the finding of Adoga et al but with a higher prevalence in comparison [21]. This could be because in the present study, the children and young adults made up most of the population and it is known that anterior bleeds is seen more in children and young adults [29]. In 26 cases in this study compared to 13 in the study by Adoga et al. the site of bleeding could not be identified [21].

The protocol of the treatment in these patients was to control bleeding, aim at decreasing hospital stay and limit complications in the most available way. Majority of these patients were managed conservatively with good outcome. Other researchers documented similar experience [21,27]. However, nasal packing was commonly done in these cases with anterior nasal packing being the commonest type as seen in similar works [22,23,28]. In most of the patients, the treatments do actually overlap, for instance, the patients with nasal packs also had antibiotics and other medical therapy. The posterior nasal packings were often done using Foley's self-retaining urethral catheter and then reinforced with an anterior packing in addition.

In the present study, the prevalence of blood transfusion among these patients was 0.51% which is considered low in comparison to Adoga et al rate of 34.8% [21]. This may be due to the fact that the study by Adoga et al. had more cases of posterior nasal bleed that tend to be more severe and requiring transfusion. This could be due to the fact that the percentage of their subjects with posterior bleeds which has been documented to be more severe than the anterior type was higher. It is known that though epistaxis is a common emergency worldwide, it can become life threatening when it presents in a poor resource hospital settings with little or no facilities for proper management [25]. Fortunately, there was no mortality recorded in the present study in contrast to others [21].

5. LIMITATIONS

The medical records of some of the patients may lack some vital information.

6. CONCLUSION

Epistaxis in this environment still presents as a common emergency and in majority of the case, the cause is not known however, trauma appear to be one of the commonest cause implicated in our setting. The young adults appear to be the ones mainly affected. Medical conservative management was the main option of treatment employed, but all had very good outcome.

DISCLAIMER

The products used for this research are commonly and predominantly use products in our area of research and country. There is absolutely no conflict of interest between the authors and producers of the products because we do not intend to use these products as an avenue for any litigation but for the advancement of knowledge. Also, the research was not funded by the producing company rather it was funded by personal efforts of the authors.

CONSENT

As per international standard or university standard written participant consent has been collected and preserved by the author(s).

ETHICAL APPROVAL

Ethical approval was sought and obtained from the hospital ethical committee.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

REFERENCES

1. Thompson J. Epistaxis and the means of arresting it, British Medical Journal. 1867;2:498.
2. Egger M, Smith GD, Altman DG. Systematic reviews in health care: Meta-analysis in context. London: BMJ Publishing group; 2001.

3. Fishpool SJ, Tomkinson A. Patterns of hospital admission with epistaxis for 26,725 patients over an 18-year period in Wales, UK. *Annals of the Royal College of Surgeons of England*. 2012;94:559-562.
4. Viehweg TL, Roberson JB, Hudson JW. Epistaxis: Diagnosis and treatment. *Journal of Oral and Maxillofacial Surgery: Official Journal of the American Association of Oral and Maxillofacial Surgeons*. 2006;64:511-518.
5. Petruson B, Rudin R. The frequency of epistaxis in a male population sample. *Rhinology*. 1975;13(3):129-133.
6. Small M, Murray JA, Garen AG. A study of patients with epistaxis requiring admission to hospital. *Health Bulletin*. 1982;40(1):20-29
7. Lee KJ. *Essential of otolaryngology: Head & neck surgery (10th Edn)* USA: McGraw Hill; 2012.
8. Walker TWM, MacFarlane TV, McGarry GW. The epidemiology and chronobiology of epistaxis: An investigation of Scottish hospital admissions 1995-2004. *Clinical Otolaryngology*. 2007;32(5):361-365.
9. Pope LE, Hobbs CG. Epistaxis: An update on current management. *Postgraduate Medical Journal*. 2005;81:309-314.
10. Pallin DJ, Chng YM, McKay MP, Emond JA, Pelletier AJ, Camargo CA. Epidemiology of epistaxis in US emergency Medicine. 2005;46(1):77-81.
11. Purkey MR, Seeskin Z, Chandra R. Seasonal variation and predictors of epistaxis. *The Laryngoscope*. 2014;124: 2028-2033
12. Livesey JR, Watson MG, Kelly PJ, Kesteven PJ. Do patients with epistaxis have drug-induced platelet dysfunction? *Clinical Otolaryngology and Allied Sciences*. 1995;20:407-410.
13. Middleton PM. Epistaxis, *Emergency medicine Australasia. EMA*. 2004;16:428-440.
14. Nicolai P, Schreiber A, Villaret AB. Juvenile Angiofibroma: Evolution of management. *Int J Pediatr*. 2012;412-545.
15. McKenzie D. Suprarenal gland extract in the epistaxis of haemophilia. *British Medical Journal*. 1901;1:1009-1010.
16. David ED. Ligation of the internal maxillary artery through the antrum for uncontrollable epistaxis (specimens and instruments) *Proceedings of the Royal Society of Medicine*. 1945;38:619-620.
17. Kellick N, Malik V, Kumar BN. Nasal packing for epistaxis: An evidence-based review. *British Journal of Hospital Medicine*. 2014;75:143-144.
18. Romagnoli M, Marina R, Sordo L, Gaini RM. Indicators for selective arterial embolization in the treatment of epistaxis. *Acta Otorhinolaryngologica italica: Organoufficiale Della Societaitaliana di Otorinolaringologia e Chirurgia Cervico-Facciale*. 2000;20:330-335.
19. Trotter MI, De R, Drake-Lee A. Evidence-based management of epistaxis in adults. *British Journal of Hospital Medicine*. 2006; 67:651-653.
20. Mgbor NC. Epistaxis in Enugu: A 9 year review. *Nigerian Journal of Otorhinolaryngology*. 2004;1(2):11-14.
21. Adoga AA, Kokong DA, Joyce GM, Emoche TO, John PY. Epistaxis: The demographics, etiology, management and predictors of outcome in Jos, North-central Nigeria. *Annals of Afr Med*. 2019;18(2):75-79.
22. Parajuli R. Evaluation of etiology and treatment methods for epistaxis: A review at a tertiary care hospital in central Nepal *Int J of Otolaryngol*. 2015;2015:1-5.
23. Akinpelu OV, Amusa YB, Eziyi JA, Nwawolo CC. A retrospective analysis of aetiology and management of epistaxis in a South- Western Nigerian teaching hospital. *West Afr J Med*. 2009;28(3):165-168.
24. Eziyi JA, Akinpelu OV, Amusa YB, Eziyi AK. Epistaxis in Nigerians: A 3 year experience. *East Cent Afr J Surg*. 2009;14: 93-98.
25. Gilyoma JM, Chalya PL. Etiological profile and treatment outcome of epistaxis at a tertiary hospital in North Western Tanzania: A prospective review of 104 cases. *BMC Ear nose throat Disord*. 2011; 11:8.
26. Christenson NP, Smith DS, Barnwell SL, Wax MK. Arterial embolization in the management of posterior epistaxis. *Otolaryngol Head Neck Surg*. 2005;133(5): 748-753.
27. Iseh KR, Muhammad Z. Pattern of epistaxis in Sokoto, Nigeria: A review of 72 cases. *Annals of Afr Med*. 2008;7(3):107-111.
28. Kodiya AM, Labaran AS, Musa E, Mohammed GM, Ahmad BM. Epistaxis in Kaduna, Nigeria: A review of 101 cases. *Afr Health Sci*. 2012;12:479-482.

29. Ciaran SH, Owaun H. Update on management of epistaxis. *West London Medical Journal*. 2009;1:33-41.
30. Anie TM, Arjun MG, Andrews JC, Vinaya kumar RA. Descriptive epidemiology of epistaxis in a tertiary care hospital. *Int J Adv Med*. 2015;2:255-259.
31. Varshney S, Saena RK. Epistaxis: A retrospective clinical study. *Indian Journal of Otolaryngology and Head and Neck Surgery*. 2005;57(2):125-129.
32. Iqbal M, Ahmed W. Epistaxis: Its incidence in IDPS of North Waziristan Agency. *World J Med Sci*. 2015;12:336-340.

© 2020 *Uju and Victor*; This is an Open Access article distributed under the terms of the Creative Commons Attribution License (<http://creativecommons.org/licenses/by/4.0>), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

Peer-review history:
The peer review history for this paper can be accessed here:
<http://www.sdiarticle4.com/review-history/55634>