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Etiological profile and management of epistaxis in Makurdi, North-Central Nigeria: A six year retrospective study.

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Abstract:

Background:

Epistaxis or bleeding from the nose is a fairly common emergency presentation in otorhinolaryngological practice. This study is aimed at determining the etiological profile and management outcome of epistaxis in Makurdi, North-Central Nigeria.

Methods:

This is a six year retrospective review of medical records of all patients with complaints of epistaxis managed at the Ear, Nose and Throat clinics, accident and emergency (A&E) units, ward admissions and theatres of both the Benue State University Teaching Hospital, and Federal Medical Centre, in Makurdi between June 2009 and May 2015. Data retrieved included demographics, cause of epistaxis, associated medical conditions, and drug medications, site of bleeding, treatment protocol and complications.

Results:

A total of 92 patients presented with epistaxis out of 10526 that were attended to at the hospitals during the period under review. There were 3879 cases with nasal pathologies within the same period. There were 60 males and 32 females giving a male-to-female ratio of 1.9:1. Their ages ranged from 6 to 73years with a mean of 22.5+-3.7years. Those most commonly affected were in 4th and 5th decades of life constituting 43.5%. Idiopathic pathologies were the commonest causes accounting for 27.2% followed by cardiovascular factors (hypertension/ atherosclerosis) (25.0%), then trauma (21.7%). Nasal packing was the commonest procedure done which accounted for 65.2%.

Conclusion:

In Makurdi, epistaxis is a significant nasal presentation in the 4th and 5th decades of life with idiopathic pathologies, cardiovascular factors and trauma being the commonest causes. Conservative method of treatment is still very effective in the control of epistaxis prior to treating the cause if known.

INTRODUCTION

Epistaxis or bleeding from the nose is a common feature in several different clinical conditions. It frequently constitutes an otorhinolaryngologic emergency. Reported cases are usually mild, recurrent or severe and life threatening which maybe quite tasking for the care giver and may need adequate resuscitation to stabilize the patient [1,2,3,4]. Epistaxis often causes great worry in both patients and managing physicians.

The frequency is difficult to establish because most cases resolve with self-medication and are not reported. However, it is reported that 60% of the population will experience epistaxis in their lifetime with 6% of them requiring medical attention[5].

.Furthermore, most reports from Europe and America gave a general incidence of 10%-15% of the population [6,7]. Epistaxis tends to be slightly higher in males (58%) than in females (42%) and affects all age groups with bimodal age distribution with peaks in young children/ adults and in the sixth decade of life [1-3,5-6]. It may occur anytime of the year but several studies reported higher incidence during the hot, dry and cold winter periods of the year [3,5,8].

The nasal mucosa is highly vascular receiving blood supply from branches of both the internal and external carotid arteries with extensive anastomosis. Epistaxis maybe classified into primary, or secondary, childhood or adulthood and anterior or posterior bleeds depending on the part of the nasal cavity from which the bleeding comes. Anterior nosebleeds are most common among children and constitute about 85%-95% of cases. The bleeding maybe arterial from the Kiesselbach's plexus or venous from retrocolumellar vein and are easily accessible and treatable. On the other hand the posterior epistaxis which accounts for 5%-15%, occurs more commonly in the elderly where there arise usually from the woodruff plexus. There are difficult to view and treat and are usually associated with hypertension, atherosclerosis and conditions that decrease platelet and clotting function [5,6,8,9]. The causes of epistaxis could be due to local or systemic factors or maybe idiopathic.

Regarding treatment, various protocols are used to control epistaxis depending on the type, severity and cause of bleeding. The aims are to control bleeding, treat underlying cause, minimize cost, reduce hospital stay, and avoid complication. Resuscitative measures may be employed where necessary. Different workers reported varying degrees of success with the different treatment modalities bearing in mind the aims of therapy. The treatment protocols are basically divided into medical or conservative and surgical intervention methods. The medical or conservative methods include pressure on the nostrils, nasal packs, cauterization (chemical or electrical) while surgical approaches involve ligation or embolization or cryotherapy of feeder vessels and septoplasty [9-12].

The aim of this study is to present the etiological profile and management outcome of epistaxis in Makurdi and compare our findings with those of other centers.

PATIENTS AND METHODS

This is a six year descriptive retrospective analysis of patients who presented with epistaxis at both the Benue State University Teaching Hospital (BSUTH) and the Federal Medical Centre (FMC), in Makurdi, between June, 2009 and May, 2015. Makurdi is the capital of Benue State and has two tertiary institutions with functional Ear, Nose and Throat units during the period under review.

The state has an area of about 34,059km2 and is located in the North Central region of Nigeria. It has a population of about 5 million people who are mainly farmers, civil servants and traders. These hospitals also receive patients from parts of the neighboring States of Nassarawa, Cross-river, Taraba and Kogi. Ethical clearance was obtained from the Research and Ethical Review Committee of the Benue State University Teaching Hospital, Makurdi which also covers the Federal Medical Centre.

.Information extracted from the medical charts of the patients included age, sex, type of epistaxis, cause of epistaxis, month of presentation, treatment modality employed, co-morbid pathology, drug medication, resuscitative measures undertaken and/or complication. Also retrieved were examination findings, results of investigations such as full blood count, platelet count, liver function tests and X-ray paranasal sinuses. Our centers lacked facility for doing clotting profile so was not routinely requested for our patients. Other investigations such as urea, electrolytes and creatinine, electrocardiography and bone marrow aspiration cytology were only done based on the clinical situation.

Data collected were analyzed and expressed as percentages for categorical variables and means ± SD was used to describe continuous variables. The results were displayed in tables and charts.

RESULTS

A total of 92 patients presented with epistaxis, out of 10526 that were attended to at the ear, nose and throat units of these hospitals during the period under review. There were 3879 of them with nasal conditions. This gives the incidence of 0.87% for the total number of patients and 2.37% for those with nasal diseases in the study period respectively. There were 60 males and 32 females giving a male-to-female ratio of 1.9:1. Their ages ranged from 6 to 73years with a mean of 22.5±3.7years. The highest incidence was found in the 4th (26.1%), 5th (17.4%) and 2nd (15.2%) decades of life respectively (see Fig.1).

Fig.1). There was seasonal variation in terms of period of presentation of epistaxis with highest recorded in the last quarter of year 39(42.4%) especially in December, followed by the first quarter 24(26.1%) [see Fig.2]. Regarding the causes of epistaxis, idiopathic pathologies accounted for 25 (27.2%), cardiovascular factors 23(25%) and trauma 20(21.7%) respectively (see table I). For treatment modality, conservative method was the most frequent with anterior nasal packing accounting for 33(36.0%), anterior and posterior nasal packing 27(29.0%) and cauterization 17(19.0%) [i.e. chemical and electro cauterization] see Fig.3.

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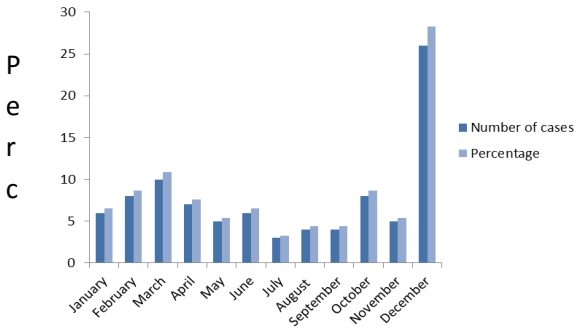

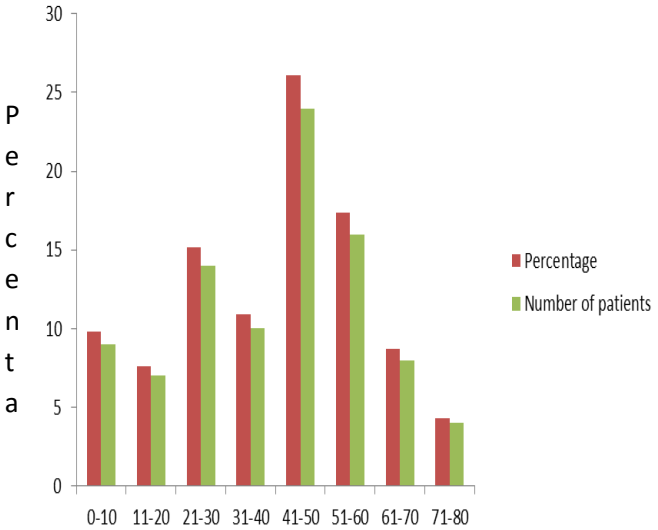

Fig 1: Age distribution of patients with Epistaxix

Table I: Causes of Epistaxis	Number of cases (Percentages)
Idiopathic	25(27.2)
Cardiovascular Diseases (Hypertension/Atherosclerosis)	23(25.0)
Trauma	20(21.7)
Sports- 4	
Assault- 2	
RTA- 14	
Neoplastic	13(14.1)
Sinonasal- 7	
Nasopharyngeal carcinoma- 5	
Juvenile nasopharyngeal angiofibroma- 1	
Rhinosinusitis	9(9.8)
Blood Dyscrasia	2(2.2)
TOTAL	92(100)

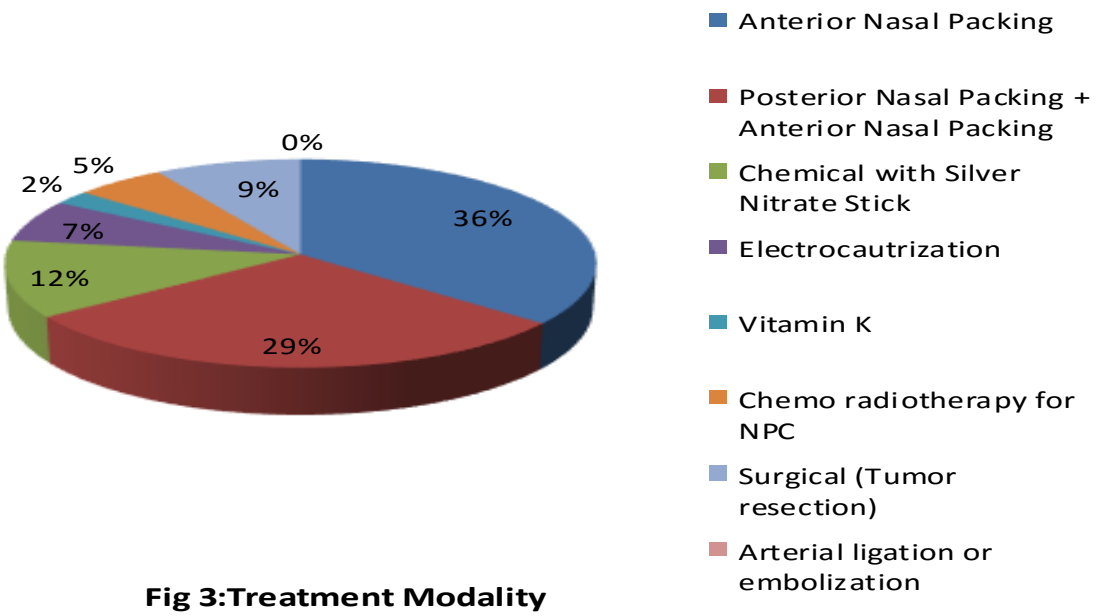

Fig 3:Treatment Modality

DISCUSSION

Though the incidence or prevalence of epistaxis is difficult to establish worldwide, it is a common presentation in otorhinolaryngological practice. Our study found an incidence of 0.87% of the total number of cases seen and 2.37% for nasal diseases during the study period. This is similar to the findings of Varshney and Saxena[5] in India who found 0.84% and 3.60% respectively. However, it is slightly higher than that of Kodiya et al[8] in Kaduna (0.50%) and lower than that of Iseh and Mohammed[4] in Sokoto (1.9%). This discrepancy maybe due to differences in the sample sizes. We also found a male preponderance of 1.9:1, which agrees with the findings of many authors such as Varshney and Saxena[5] (1.38:1), Iseh and Mohammed4 (1.7:1), Kodiya et al8 (1.4:1) and Hussain et al13 (2.15:1.04). Again these differences have to do with sample sizes. From our study, epistaxis in Makurdi affected more the 4th and 5th decades of life accounting for 43.5% of our patients. This is similar to the findings of Varshney and Saxena[5] who recorded 55.68% in these age groups but contrasted with that of Iseh and Mohammed[4] and Kodiya et al[8] who reported majority in younger age groups of less than 20 years (45.8%) and (40.6%) respectively.

We recorded the highest number of cases in the months of October to December 39(42.4%) and January to March 24 (26.1%). Whereas Kodiya et al8 documented peak periods in the months of October to December and April, Varshney and Saxena[5] recorded peaks in the months of January to March (46.59%). Both studies however agreed that the peak periods were in the cold, dry and hot seasons which were similar to our findings. The reason for this higher incidence in these periods was further alluded to by Bhatia and Varughese14 in his study in Jos who attributed it to higher wind velocity and dryness which encourages crust formation in the nasal cavity.

.In addition to this the increased road traffic accidents in the months of October to December may have contributed to the peak recorded in our study.

The common causes of epistaxis in Makurdi, from this study are idiopathic [25](27.2%), cardiovascular [23](25.0%) and trauma 20(21.7%). Many studies from different parts recorded idiopathic as the common cause of epistaxis. These include Mgbor[3] in Enugu, Iseh and Mohammed[4] in Sokoto, Kodiya et al[8] in Kaduna, Okoye et al[15] in Port-Harcourt, Varshney and Saxena[5] in Dehradun, India. Equally, Hussain et al[13] and Varshney and Saxena[5] in their studies also found cardiovascular causes as the second commonest similar to ours. The 25% of our patients with cardiovascular disease either gave positive history of hypertension prior to onset or were found to have raised blood pressure at the time of presentation. However, it remained to be established whether the hypertension was causal or an after effect of the epistaxis as many of the patients were agitated. This was corroborated by Page et al[17] who accidentally found 43% of their serious spontaneous epistaxis patients to have hypertension with no history of the disease but quickly pointed out that hypertension per se did not appear to be a statistically significant causal factor.

Our study contrasted with those of Chaiyasate et al[16] in Chiang Mai University, Thailand, Hussain et al[13] in Abbottabad and Akinpelu et al[18] in Ile-Ife.

Whereas Chaiyasate et al reported cardiovascular causes to be the commonest followed by tumor in their series, Hussain et al and Akinpelu et al documented trauma as the leading cause followed by malignant neoplasms then idiopathic. Trauma was the third commonest cause of epistaxis in our environment

Management of epistaxis is broadly classified into conservative and surgical methods. Appropriate treatment protocol depends on the source, severity and cause of bleeding with the aim of achieving control, treat underlying cause, minimizing cost and avoid complications. Nasal packing has the advantage of easy placement and removal, and is effective in controlling majority of epistaxis when bleeding is profuse or there is failure in identifying or accessing bleeding point [5,13]. In our study anterior nasal packing was the main stay of controlling epistaxis and was effective in 33 (36.0%) patients. This is similar to reports by Iseh and Mohammed4, Varshney and Saxena5, Kodiya et al[8] and Okoye et al[15], who reported that 42.6%, 43.18%, 52% and 50% respectively of their patients had their epistaxis controlled with this method. These percentages formed the majority of their study populations.

Posterior nasal packing was used in 29.0% of our patients with good effect. Whereas, this is similar to the finding by Okoye et al[15] (26.67%), other workers such as Iseh and Mohammed4 (1.4%), Varshney and Saxena5 (1.14%), Kodiya et al[8] (16%), reported lower values. Perhaps the added advantage of using endoscopes for most of our patients in localizing the bleeding points may have accounted for the higher yield. The nasal packs were left in-situ for 48 hours and the patients were given prophylactic antibiotics.

.Other treatment modalities recorded in our study included cauterization (19.0%), surgical tumor resection (9.0%) and chemo radiotherapy for nasopharyngeal carcinoma (5.0%). Two (2.0%) patients with blood dyscrasia were given vitamin K supplement alongside multiple cross-matched blood transfusions by the managing physicians but they still died resulting in a mortality of 2.2% in our series. The [4](4.4%) patients with sports injuries equally received multiple cross-matched blood transfusions and had their bleeding controlled with cauterization and nasal packing. Two of these patients developed intranasal adhesions which were later released with good effect. None (0%) of our patients had arterial ligation or embolization.

There are recent advances in the management of epistaxis reported by some workers. These include the use of fibrin glue to control epistaxis by Vaiman et al[19] in which they found complete and immediate hemostasis in 92.5% of their patients. Furthermore, they reported good healing of the bleeding sites, no swelling, crusts, plaques, secondary bleeding or atrophy of the nasal mucosa after 3months of follow-up as compared with the other methods. As laudable as this finding is, our center lacks fibrin glue which form part of our limitation for this study.

Webb et al[20] also reported on the successful use of silver nitrate to cauterize bleeding in the posterior nasal cavity. This they did with the silver nitrate stick sheathed within a cut segment of N-G tube and endoscopically advanced within the nose until the bleeding vessel was visualized and the stick pushed out to cauterize it.

Although we have endoscopes, we lack the expertise for this method so we relied on nasal packing. Also Van Wyk et al[21] in their study argued against hospital admission for patients with nasal packs. They reported that these patients recuperate faster at home and avoid the risk of hospital acquired infections. But due to the peculiar poor sanitary conditions in many homes coupled with difficult terrain and transport shortages, we could not risk discharging our patients' home after applying nasal packs.

CONCLUSION

Epistaxis is a common nasal presentation in the fourth and fifth decades of life in our environment with idiopathic, cardiovascular and trauma being the commonest causes. Despite modern approaches to the management of epistaxis, conservative methods still remain very effective in the control of epistaxis prior to treating the cause if known.

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