



A Retrospective Analysis of Aetiology and Management of Epistaxis in a South-Western Nigerian Teaching Hospital

Une Analyse Rétrospective d'Étiologie et une Direction d'Epistaxis à un Hôpital Enseignant nigérian Sud-ouest

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ABSTRACT

BACKGROUND: Epistaxis is a common otolaryngological emergency and is often due to lesions within or around the nose and systemic conditions. Controlling epistaxis presents a challenge in the underdeveloped, resource-poor centres where there are limited facilities.

OBJECTIVE: To describe the aetiopatogenesis of epistaxis in our hospitals.

METHODS: This was a retrospective review of the cases of epistaxis managed at the Obafemi Awolowo University Teaching Hospitals Complex (OAUTHC), Ile Ife, over a three-year period: January 2003 – through December, 2005). Information on sociodemographic characteristics, clinical presentation and management of epistaxis was obtained from the hospital records both in the accident and emergency units and the ENT out-patient clinic.

RESULTS: A total of 106 cases were managed during the period. The peak age incidence was in the 21-40-year group. There was a significant male preponderance, ratio 3.4:1. Trauma contributed to 75 (70.9%) of the cases managed. Maxillofacial injuries were the most common injury encountered (50.7%). This was mainly secondary to the road traffic accident (RTA). Malignant neoplasms were the second most common aetiological factor seen in this study while idiopathic causes were the third most common. There were two cases with systemic problems associated with renal failure. Nasal packing was adequate to control the epistaxis in most cases. Nasal packing was done with gloved finger cots and vasellinated gauze. Two patients (1.9%) had external carotid artery ligation. Eleven patients (10.4%) received blood transfusion.

CONCLUSION: Epistaxis is a common presentation of head and neck trauma. Non-surgical control of epistaxis (nasal packing) is adequate in many cases. Reducing the incidence of trauma from RTA will reduce the incidence of emergency epistaxis in our centers. *WAJM 2009; 28(3): 165–168.*

Keywords: Epistaxis, emergency, trauma, nasal packing, aetiology.

RÉSUMÉ

CONTEXTE: Epistaxis est une urgence otolaryngologique commune et est souvent en raison des lésions dans ou autour du nez et des conditions systémiques. Le contrôle epistaxis présente un défi dans les centres peu développés, pauvres de la ressource où il y a l'équipement limité.

OBJECTIF: décrire l'aetiopatogenesis d'epistaxis à nos hôpitaux.

MÉTHODES: c'était une révision rétrospective des cas d'epistaxis dirigé à l'Obafemi Awolowo le Complexe d'Hôpitaux d'Enseignement d'université (OAUTHC), Ile Ife, sur une période(un point) de trois années : le janvier de 2003 - jusqu'au décembre de 2005). Information sur les caractéristiques sociodémographique, la présentation clinique, et la direction(gestion) d'epistaxis a été obtenue des dossiers(archives) de l'hôpital tant dans l'accident que dans les unités d'urgence et la clinique de consultation ENT.

RÉSULTATS: un total de 106 cas a été dirigé pendant la période(le point). L'incidence d'âge maximale était dans le 21 groupe de 40 années. Il y avait une prépondérance mâle significative, le rapport 3.4:1. Le trauma a contribué 75 (70.9 %) des cas dirigés. Les blessures de Maxillofacial étaient (50.7 %) rencontrés de la blessure la plus commune. C'était principalement secondaire à l'accident de circulation (RTA). Les néoplasmes malfaisants étaient le deuxième facteur aetiological le plus commun vu dans cette étude pendant que les causes d'idiopathic étaient le troisième plus commun. Il y avait deux cas avec les problèmes systémiques associés à l'échec rénal. L'emballage nasal était adéquat pour contrôler l'epistaxis dans la plupart des cas. L'emballage nasal a été fait avec les lits de bébé(camp) de doigt gloved et la gaze vasellinated. Deux patients (1.9 %) avaient l'artère de carotide externe ligation. Onze patients (10.4 %) transfusion sanguine reçue.

CONCLUSION: Epistaxis est une présentation commune de trauma de cou et de tête. Le contrôle non-chirurgical d'epistaxis (l'emballage nasal) est adéquat dans beaucoup de cas. Réduction de l'incidence du trauma de RTA réduira l'incidence d'urgence epistaxis dans nos centres. *WAJM 2009; 28(3): 165–168.*

Mots clé : Epistaxis, urgence, trauma, emballage nasal, étiologie.

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Abbreviations: CT, Computed Tomography; ENT, Ear, Nose and Throat; OAUTHC, Obafemi Awolowo University Teaching Hospitals Complex; ORL, Otorhinolaryngology; RTA, Road Traffic Accident.

INTRODUCTION

Epistaxis is a common presentation at ear- nose- and -throat units, in both out-patient department and emergency rooms.¹ The average patient with epistaxis is usually frightened by the bleeding that they tend to seek help early although some workers have reported that only 10% of individuals with epistaxis looked for medical help.² The nose is a highly vascularised organ and receives blood supply from branches of both the internal and external carotid arteries.

The causes of epistaxis have been broadly classified into local causes (relating to problems in the nose, paranasal sinuses and the nasopharynx) while systemic causes. common among the systemic causes are cardiovascular problems like hypertension, blood dyscrasias and the use of oral anticoagulant.³

In children bleeding from the nose is often caused by simple trauma caused by nose picking. However other life threatening causes may be responsible. Bleeding from the nose can be life threatening especially in the emergency room when profuse epistaxis can lead to shock and death.

An appropriate management of epistaxis involves a careful initial assessment which will vary according to the need for immediate intervention. Patients with ongoing bleeding often require an immediate arrest of the bleeding before a detailed history can be obtained. Whereas patients who present with a history of having bled from the nose can be thoroughly assessed and investigated immediately. The goal of management is usually to control an ongoing bleeding and identify the site and cause of bleeding which should then be addressed. Various methods have been used to achieve this goal, including nasal packing, arterial embolisation, endoscopic cautery and arterial ligation. Limitations in the availability of sophisticated methods of controlling epistaxis exist in most centers in developing countries. The use of cryotherapy, posterior endoscopic cautery and arterial embolisation have been found useful in well established centers in the developed countries.⁴ The use of these is not so common in our center.

This study aims at reviewing the pattern of presentation of epistaxis, the etiology, different management options and outcomes of management in our center.

SUBJECTS, MATERIALS AND METHODS

This was a retrospective review of cases of epistaxis managed in the Accident and Emergency unit of the Obafemi Awolowo University Teaching Hospitals Complex, OAUTHC, Ile-Ife over a three-year period January 2003–December 2005. Ile Ife, where the OAUTHC, is situated is a semi-urban community with an estimated population of Dwellers in Ile-Ife are predominantly farmers and traders. OAUTHC, a University Hospital, serves not only this community, but several surrounding communities. The records of cases of epistaxis managed in our unit during this period were retrieved. Information on socio-demographic characteristics (age, sex, occupation) were retrieved as well as duration of epistaxis before presentation, causes of epistaxis and the modalities of management were also entered into the data form.

The data was analyzed using the SPSS version eleven. The results are presented in percentages and frequencies.

RESULTS

A total of 106 cases of epistaxis were managed over the three-year period. There were 226 cases of ORL emergencies during this period. Therefore epistaxis constituted 46.9% of all ORL emergencies in our center. Seventy-eight (73.6%) of these were managed at the accident and emergency unit. Twenty-eight were managed in the ENT OPD.

There were eighty-two (77.4%) males and twenty-four (22.6%) females giving a male to female ratio of 3.4:1. Their ages ranged between 4–81 years. The peak incidence was between 21–40 years. (Table 1).

Aetiological Pattern

Seventy-five (70.9%) of the cases had epistaxis secondary to trauma with road traffic accident (52, 49.1%) topping the list (see Fig. 1). The patients had various forms of injuries ranging from

isolated nasal injuries, head injuries with fracture to the anterior cranial fossa floor. Thirty-eight (35.8%) of the cases seen had epistaxis secondary to maxillofacial injuries, sixteen (42.1%) out of these had Le Fort injuries. The rest (22,57.9%) had soft tissue injuries.

Five (4.7%) had inflammatory conditions responsible for their epistaxis. Tumors accounted for epistaxis in seventeen (16.0%) patients fourteen (13.2%) of which were malignant neoplasms. Two patients had benign neoplastic nasal polyps, one patient had chondroma, two patients had malignant neoplastic nasal polyps, seven, (6.6%) patients had nasopharyngeal carcinoma and five patients (4.7%) were diagnosed with malignant sino-nasal tumors.

Uraemia secondary to chronic renal failure was responsible in two (1.9%) of the cases. Thirty-one patients had epistaxis in a non traumatized face or nose. Out of these a previous bleed from 1 to 10 episodes has been experienced in these patients.

Investigations

Packed cell volume was found to be significantly low in eleven (10.4%) patients requiring blood transfusion. Apart from this, there was no other abnormality found in the full blood count result of the patients. Radiological investigations (x-ray of the sinuses, post nasal space, cranial CT where necessary and affordable) confirmed the presence of the various fractures already outlined. All the patients had plain x-rays done,

Table 1: Age and Sex Distributions

Age (Years)	Male	Female
0–5	1	1
6–10	2	3
11–15	2	0
16–20	4	1
21–30	29	1
31–40	22	5
41–50	10	3
51–60	4	4
61–70	7	4
71–80	1	1
>80	0	1

nine patients (8.5%) had CT scan done, three (2.8%) of these had nasopharyngeal carcinoma while six (5.7%) had sinonasal tumours.

Examination under anesthesia with biopsy for histopathological examination confirmed the diagnosis in all the neoplastic cases.

Control of Epistaxis

Control of bleeding at the A and E was achieved by putting nasal packs (anterior and/or posterior). Anterior nasal packing was done using vaselinated gauze (22, 20.8%) and gloved finger cots (42, 39.6%), while posterior nasal packing was achieved using vaselinated gauze (5, 4.7%) or the balloon of Foley's catheter (21, 19.8%). Where needed, a reinforcement dressing was put over the anterior nares. Other forms of treatment included the use of systemic decongestants (Pseudoephedrine), a platelet aggregator (dycinone).

Two (1.9%) of our patients had external carotid artery ligation when the nasal bleeding failed to stop in spite of adequate nasal packing.

Treatment of Primary cause of Epistaxis

Subsequent treatment of the underlying problems depended on the primary cause of nose bleeding and this included internal fixation of maxillofacial fractures (16; 15.1%), intranasal polypectomy and ethmoidectomy (5, 4.7%), external ethmoidectomy 2 (1.9%), nasal

bone fracture reduction (2, 1.9%). The fourteen cases with malignant neoplasms also had radiotherapy as part of their treatment.

Follow Up

Average follow up period was seven weeks (2 – 19 weeks). Recurrence of nose bleeds during the follow up period was seen twenty two (20.8%) patients but only five (4.7%) of these required packing. The rest were managed with cautery using silver nitrate stick, trichloroacetic acid, application of Vaseline in the vestibule, and local and systemic nasal decongestants.

DISCUSSION

Epistaxis is the most common rhinologic emergency encountered in most centers. It accounted for 46.9% of ORL emergencies in our center during the period reviewed. Emergency room visits prior to admission was noted in 68.6% of epistaxis cases managed in General Hospital in Taiwan.⁵ In a Spanish University Hospital, 13.3% of ENT emergencies were cases of epistaxis.² It accounted for 1 in 200 emergency department visits in the United States.⁶

This study shows that the young age group presented more with epistaxis (about 54%) and trauma was a leading cause of epistaxis. Epistaxis visits to our emergency rooms were most common in the 21–40 years age group. This is because road traffic accidents with various injuries of the facial skeleton and the head was a leading cause of nose bleeds in this report. Increased risk for RTA has been well documented in this particular age group.⁷

The findings in this study is different from reports of other workers who found epistaxis more in patents older than forty years,^{5,8} especially in the developed countries.^{2,9,10}

Earlier reports from other centers in Nigeria: Lagos, Enugu, found a similar age incidence.^{17,12} Cardiovascular problems were mainly responsible for epistaxis amongst the above 40 years age group.^{9,10} High blood pressure was not a common problem amongst the cases we managed. The ages above forty years constituted 20.8% of the patients we managed for Epistaxis. In this age group, neoplasms,

hypertension and rhinitis were the causes of epistaxis seen.

Eight children (0.08%) were seen in this study, this is perhaps underreported. Also profuse epistaxis not amenable to the usual home remedies is rare in the children in this area. One of the children had a bleeding disorder while, another had epistaxis secondary to trauma. Neoplasm was the single highest aetiological factor of epistaxis presenting in our children emergency room.

The male preponderance seen in this review compares well with other reports on epistaxis from Enugu and Lagos.^{11,12} This was also observed by Vaamonde *et al.*² The reason for this is similar to that for increased RTAs in males as more males are exposed to traffic as drivers (of vehicles and motorcycles) and as frequent travelers in motor vehicles for work and leisure activities.⁷

Trauma was the most common aetiological factor seen in this series, this was the same with the findings of Ijaluola and Okeowo.¹¹

Facial injuries are commonly seen from Road Traffic Accident. The nose being the most prominent part of the face is frequently involved in trauma to the face.¹³ Non-traumatic causes however were found to be more common in the work of Pallin *et al.*⁶ The traumatic cases were however found to be of younger age group. This agrees with our findings.

Neoplasm was the next common cause of epistaxis that we saw. This include both benign and malignant neoplasms. Nasopharyngeal carcinoma, sino-nasal tumors were common among this group. Sinonasal chondroma was seen in a nine year old male with recurrent epistaxis. Idiopathic was the third most common cause closely followed by inflammatory sino-nasal problems. Anterior epistaxis was seen in two thirds of the patients we managed. This agrees with existing literature.¹⁴

However a far less proportion (5%) was found to be posterior epistaxis in the work of Viducich *et al.*⁹

The management of profuse epistaxis in the emergency room is quite challenging especially when sophisticated facilities for endoscopic cautery, arterial embolisation, cryosurgery are not immediately available. Anterior and

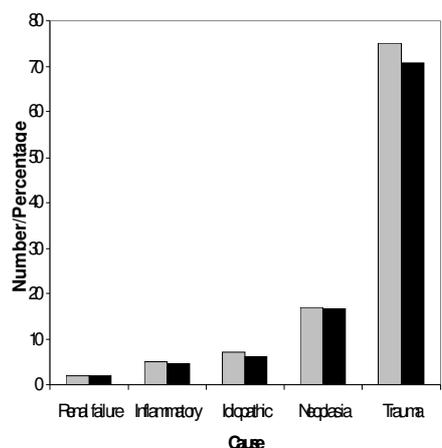


Fig 1. Aetiological factors in Epistaxis at Ile-Ife, Southwestern Nigeria (Absolute numbers in grey and percentages in black). Trauma was responsible for the large majority of cases.

posterior nasal packing are relied on therefore. This was found to be effective in a significant number of our patients. Non-interventional treatment (nasal packing and electrocauterisation) were found to be effective in 73.3 % of cases in a similar report by Huang and Shu.⁵

However posterior epistaxis requires surgical management more than anterior epistaxis.^{14,15}

The two cases we managed with external carotid artery ligation were posterior epistaxis. Barlow et al found that there is increased need for surgical intervention in the management of posterior epistaxis.¹⁴

Fifty-nine percent of posterior epistaxis in their center required surgical intervention. Seventy two out of the seventy eight cases (92.3%) managed in the emergency room were successfully managed conservatively. Our experience shows that conservative management is arguably sufficient in the management of most cases of epistaxis. This was also expressed in the findings of other workers.^{10,16,17,18}

Hospitalization was necessitated in a large percentage of our patients. Most of the cases of trauma were from road traffic accidents and there were other injuries associated with them. Patients with isolated nasal bone fractures were not require hospitalisation, however all patients with head or maxillo-facial injuries were hospitalized for further management. Patients with isolated nasal bone fractures had nasal packs inserted following reduction of the nasal fracture. Profuse epistaxis in our emergency rooms were first managed by anterior and posterior nasal packing with gloved finger cot / vasellinated gauze and Foley's catheter respectively.

Conclusion

Trauma is a common and preventable cause of epistaxis requiring hospitalization, also common are neoplastic diseases of the nose and paranasal sinuses.

Nasal packing is used commonly to control anterior epistaxis in our patients who require hospitalization. Posterior packing with Foley's catheter balloon. These have been found to be effective in our emergency room even in the management of profuse epistaxis.

Trauma with a male preponderance is the leading cause of epistaxis. Neoplasms are however the most common cause above the age of forty years. Our experience shows that conservative approach is arguably sufficient in the management of most cases of epistaxis.

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