



RESEARCH ARTICLE

EPISTAXIS-EVALUATION OF ETIOLOGY MAINLY NON-TRAUMATIC AND ITS ASSOCIATED FACTORS AMONG THE PATIENTS ATTENDING AT TERTIARY HOSPITAL

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ABSTRACT

Background: Epistaxis is defined as any bleeding arising from the nasal mucosa, it is the most vascularization of the nose and paranasal sinuses, which receive blood supply from the internal and external carotid systems. It is the most common ENT emergency situation¹ bearing a prevalence of about 10 to 12%⁴. Its incidence is of 30 cases for every 100,000 inhabitants and more than 87% of the patients seen by the ENT are admitted to a hospital⁸. The objective of this present study was Evaluation of etiology mainly non-traumatic and its associated factors. **Methods:** 58 number of patients were included in this study with Epistaxis. The main outcome of study were etiology, age, sex, Occupation, Seasonal Prevalence, Site of non-traumatic epistaxis, Severity & frequency of non-traumatic epistaxis and treatment modalities. **Result:** The study showed that the commonest cause of non-traumatic epistaxis was idiopathic 29.31%, followed by maggots infestation and rhinosporidiosis 10.34%, Hypertension 8.62%. Beside these, Rhino sinusitis, Haemangioma, Idiopathic blood dyscrasias & topical nasal steroid user presented with showed hypertension, rhinitis and septal pathology found 8.62%, Atrophic rhinitis and Sinusoidal neoplasm 5.17%, Ethmoidal polyp 3.44%, Inverted papilloma 3.44%, Vestibulitis 1.72%. Antrochoanal polyp 5.17%. It was encountered that males were affected twice than the females (2.05:1). Their mean age was 40 years (range 13 to 80 years). Anterior nasal bleeding was noted in majority of the patients (51.72%). Non surgical measures such as observation alone (27.58%), anterior nasal packing (20.68%), posterior nasal packing (8.6%) were the main intervention methods. Surgical measures 25 out of 58 (43.10%) mainly Wide base excision & Electrocauterization of base of Rhinosporidiosis were carried out in 6 cases, Correction of septal abnormalities were carried out in 8 cases. Electrocauterization and biopsy after hospital admission taken in 4 cases. Arterial ligation and endovascular embolization were not performed. **Conclusion:** Epistaxis are very common in male and Their mean age was 40 years. Idiopathic is the most commonest cause of non-traumatic epistaxis. Most case were successfully managed with conservative (Non surgical) treatment.

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INTRODUCTION

Epistaxis is defined as any bleeding arising from the nasal mucosa, it is the most common ENT emergency situation (Siddiqui, 2001-2003), bearing a prevalence of about 10 to 12% (Pallin, 2005). Its incidence is of 30 cases for every 100,000 inhabitants and more than 87% of the patients seen by the ENT are admitted to a hospital (Balbani, 1999). This high frequency found is explained by the rich vascularization of the nose and paranasal sinuses, which receive blood supply from the internal and external carotid systems (Thornton, 2005).

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In a study, it accounted for 46.9% of ORL emergencies in the Obafemi Awolow University Teaching Hospital complex during the period reviewed (January 2003-through December 2005),² 13.3% of ENT emergencies in a Spanish University Hospital 3 and 1 in 200 emergency department visits in the United States (Pallin, 2005). It may present as an emergency, as a chronic problem of recurrent bleeds or may be a symptom of a generalized disorder. It cannot only affect the hemodynamic but may cause great anxiety to patients and their relatives (Nemer, 2008). Epistaxis may be traumatic or non-traumatic origin. Depending on the site it is commonly divided into anterior and posterior epistaxis. Anterior nose bleeds arise from damage to Kiesselbach's plexus on the lower portion of the anterior nasal septum, known as the Little's area, whereas posterior nosebleeds arise from damage to the posterior nasal septal artery. Anterior epistaxis is far more common than

posterior epistaxis (Pope, 2005 and Nemer, 2008). The causes of epistaxis may be classified into local and systemic causes. (Akinpelu, 2009; Brazilian Journal of Otolaryngology, 2013; Danielides, 2002; Thornton, 2005; Santos, 2002) both of which are mostly non-traumatic origin. The etiology vary with age and anatomical location. Local causes are inflammatory-infectious (rhinitis, rhinosinusitis), anatomical (septal deviation and perforation), foreign body, chemical or climatic agents and nasal tumors (nasopharyngeal angiofibromas, nasal polyposis, inverted papilloma, carcinoma). (Danielides, 2002; Thornton, 2005; Santos, 2002). Systemic causes are hypertension, blood dyscrasias, drugs (acetylsalicylic acid, anticoagulants, non-hormonal anti-inflammatory, antibiotics), neoplasms etc. Severe epistaxis may be associated to prevailing factors such as systemic arterial hypertension and coagulopathy (Danielides, 2000; Thornton, 2005; Santos, 2002). Blood vessel atherosclerosis at the woodruff plexus and the Osler-Rendu-Weber disease or Systemic telangiectasia also included in some studies (Roithmann, 2006; Santos, 2005; Pope, 2005 and Balbani, 1999). Non-traumatic epistaxis that occurs in children usually is mild and originates in the anterior nose, whereas epistaxis that occurs in older individuals is more likely to be severe and to originate posteriorly. Epistaxis poses a greater risk in elderly people in whom clinical deterioration may progress rapidly if the blood loss is significant. 26 One study shows that epistaxis secondary to trauma topping the list (70.9%). Other causes are tumor (16%), inflammatory condition of the nose (4.7%). Uraemia (1.9%) etc 1. Another study shows that 70.8% patients had traumatic, 22.6% atraumatic and 7% idiopathic epistaxis. 9 Non-traumatic cause of epistaxis however were found to be more common in another work (Jr. Epidemiology of epistaxis in US emergency department 1992-2001 by Pallin Dj, Ching YM, McKay MP, Emond JA, Pelletier AJ, Camargo CA) 2. Idiopathic causes are also common in some studies (Akinpelu, 2003). The treatment of non-traumatic epistaxis requires a systematic and methodical approach, and options vary according to the cause, location, and severity of the hemorrhage. Both conservative and surgical treatment modalities have been used in the treatment of non-traumatic epistaxis (Pope, 2005 and Nemer, 2008). Most of the underlying causes of non-traumatic epistaxis are preventable. A clearer understanding of the causes, treatment and outcome of these patients is essential for establishment of preventive strategies as well as treatment guidelines (Akinpelu, 2009 and Nemer, 2008).

Aims of Study

The aims of study are: To observe the evaluation of etiology mainly non-traumatic and its associate factors on the basis of Age, Sex, Occupation, Seasonal prevalence, Site, severity & frequency of epistaxis and modalities of treatment.

MATERIAL AND METHODS

This prospective cross sectional study was done in the Department of Otolaryngology and Head-Neck Surgery of Chattagram Maa Shishu-O-General Hospital (CMSOGH) of Chittagong, during the period from December 2012 to November 2014 with a view to find out the Evaluation of Etiology mainly non-traumatic and its associated factors of patients of Epistaxis. Altogether 58 conveniently selected cases of Epistaxis of different age and sex group had been studied. Mainly non-traumatic and associated factors were included in the study. Traumatic causes were excluded from the study.

Data were collected in a predesigned form. No data or information was collected without permission of patients, participation of this study is fully voluntary. Data were analyzed by using computer based Statistical Package of Social Science (SPSS, Version 20) programme. Catagorical variables was presented in the form of frequency and percentage. Quantitative data were presented in the form of mean and standard deviation.

RESULTS

The outcome of the study was as follows: Table 1, showed The commonest cause of non-traumatic epistaxis was idiopathic, 17 cases out of 58 (29.31 %), followed by maggots infestation and rhinosporidiosis, 6 cases each (10.34%), hypertension 5 cases (8.62%) rhinitis and septal pathology found in 5 cases each (8.62%), Atrophic rhinitis found in 3 cases (5.17%), sinunasal neoplasm 3 casae (5.17%), Antrochoanal polyp in 3 cases (5.17%), Ethmoidal polyp in 2 cases (3.44%), Inverted papilloma in 2 cases (3.44%), Vestibulitis in 1 cases (1.72%). Beside these, Rhino sinusitis, Haemangioma, Idiopathic blood dyscrasias & topical nasal steroid user presented with epistaxis found in 1 cases each (1.72%).

Table 1. Causes of non-traumatic epistaxis

| Cause | No | % |
|---|-----------|-------------|
| Idiopathic | 17 | 29.31% |
| Maggots | 6 | 10.34% |
| Rhinosporidiosis | 6 | 10.34% |
| Hypertension | 5 | 8.62% |
| Allergic rhinitis only or combination (with DNS /HTN/ septal ulcer & Rhino sinusitis) | 5 | 8.62% |
| Atrophic rhinitis | 3 | 5.17% |
| Sinunasal malignancy | 3 | 5.17% |
| Antrochoanal polyp | 3 | 5.17% |
| DNS | 2 | 3.44% |
| Ethmoidal polyp | 2 | 3.44% |
| Inverted papilloma | 2 | 3.44% |
| Steroid spray | 1 | 1.72% |
| Vestibulitis | 1 | 1.72% |
| Idiopathic blood dyscrasias | 1 | 1.72% |
| Haemangioma | 1 | 1.72% |
| Total | 58 | 100% |

Table 2. Age and sex distribution of the patients with non-traumatic epistaxis

| Age | Male | % | Female | % | Total | % |
|--------------|-----------|---------------|-----------|---------------|-----------|-------------|
| 0-20 | 15 | 25.86 % | 5 | 8.62% | 20 | 34.48% |
| 21-40 | 13 | 22.41 % | 7 | 12.06% | 20 | 34.48% |
| 41-60 | 4 | 6.89% | 4 | 6.89% | 8 | 13.79% |
| 61-80 | 7 | 12.06% | 3 | 2.58% | 10 | 17.24% |
| Total | 39 | 67.24% | 19 | 32.76% | 58 | 100% |

(Total no. of patients, n=58)

Out of 58, non-traumatic epistaxis was encountered in male 39 cases (67.24%) and female 19 cases (32.76%). Younger group are more susceptible for non-traumatic epistaxis in both sexes. Non-traumatic epistaxis found to be more common in people of poor socioeconomic condition and underprivileged people (eg- labourer, farmer, house wife) than affluent and conscious people (service holder & Students). Non-traumatic epistaxis is found to be more prevalent in winter and autumn than other season particularly summer probably due to increasing drying effect of nasal mucosa. The impact of ambient temperature and humidity showing high prevalence of epistaxis. 38 out of 58 (65.51%) were presented in between December to February during the study period.

Table 3. Occupational variation among the patients of non-traumatic epistaxis

| Occupation | No of the patients | Percentage % |
|------------|--------------------|--------------|
| Student | 14 | 24.13% |
| Service | 02 | 3.44% |
| House wife | 15 | 25.86% |
| Business | 6 | 10.34% |
| Labour | 10 | 17.24% |
| Farmer | 07 | 12.06% |
| Others | 4 | 6.89% |
| Total | 58 | 100 % |

(Total no. of patients,n=58)

Table 4. Seasonal prevalence of non-traumatic epistaxis

| Months | Cases | % |
|------------|----------|--------|
| December | 16 | 27.58% |
| January | 12 | 20.68% |
| February | 10 | 17.24% |
| March | 12 | 20.68% |
| April | 6 | 10.34% |
| May | 2 | 3.44% |
| Six months | Total 58 | 100% |

(Total no. of patients, n=58)

Anterior epistaxis is found to be more common 30(51.72%) than posterior 13 (22.41%). Undetectable site or diffuse bleeding was found in 15(25.86%) cases. Left side got more involved than right side in this study. Profuse to moderate amount of bleeding seen in 25 cases (43.10%). Most of them are due to idiopathic, hypertension and Maggots infestation, Small amount of bleeding in 8 cases (13.79%), scanty bleeding as well as blood stained discharge was found in 25 cases (43.1%) are due to some polypoidal masses, sinu nasal neoplasm, local infection and allergic conditions.

Table 5. Site of non-traumatic epistaxis

| Site | No | % |
|-----------|-----------------------|--------|
| Anterior | 30(Right 14, Left 16) | 51.72% |
| Posterior | 13 | 22.41% |
| Diffuse | 15 | 25.86% |
| Total | 58 | 100% |

(Total no. of patients, n=58)

Table 6. Severity and frequency of non-traumatic epistaxis

| Type | No | % |
|-----------------------------|----|--------|
| Profuse | 25 | 43.10% |
| Small | 8 | 13.79% |
| Scanty | 15 | 25.86% |
| Blood stained/Mixed pattern | 10 | 17.24% |

(Total no. of patients, n=58)

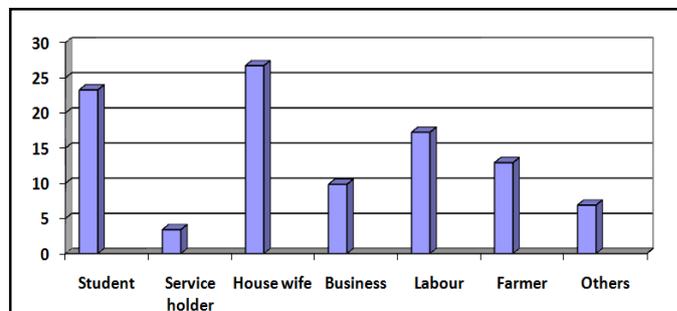
Table 7. Treatment modalities for non-traumatic epistaxis

| Surgical | Non-surgical |
|---------------------------|---------------------------------|
| Rhinospordiosis: 6 | ANS-pack: 12 |
| Septal surgery: 8 | PNS-pack: 5 |
| Antrochoanal polyp: 3 | (& Blood transfusion: 21 cases) |
| Ethmoidal polyp: 2 | Observation only: 16 |
| Inverted papilloma: 2 | |
| Electrocautery: 1 | |
| Biopsy(After admission) 3 | |
| Total surgical: 25 | Total non surgical: 33 |

(Total no. of patients=58)

Non surgical measures such as observation alone 16 cases (27.58%), anterior nasal packing 12 cases (20.68%), posterior nasal packing 5 cases (8.6%) were the main intervention

methods. Surgical measures 25 out of 58 (43.10%) mainly Wide base excision & Electrocauterization of base of Rhinospordiosis were carried out in 6 cases, Correction of septal abnormalites were carried out in 8 cases. Electrocauterization and biopsy after hospital admission taken in 4 cases. Non traumatic epistaxis found to be more common in people of Poor Socioeconomic Condition and under privileged people (eg Labourer, Farmer, house wife) than affluent and Concious people like (Service holder & Students).

**Figure 1. Occupational variation of the patients with non-traumatic epistaxis**

DISCUSSION

In this review, non-traumatic epistaxis was found to be more prevalent in the young adults, although overall epistaxis was more common found by Eziyi et al at younger age group but contrary to findings by Pallin et al (Pallin, 2005), who found a bimodal age-related frequency with peaks among those younger than 10 years and aged 70-79 years. Varshney and Saxena 16 in India reported most of their patients to be older than 40 years which correlates with other reports which showed that epistaxis is a geriatric problem. The lower age incidence in our study mbe attributed to the fact that the majority of our patients had idiopathic epistaxis and others commonly due to inflammatory-infectious, polyps and other benign neoplastic conditions. In the present study, non-traumatic epistaxis was found to affect more males than female population, with a male to female ratio of 2.05:1. The similarity of male preponderance of generalized epistaxis has been documented in literature (Eziyi, 2009; Mgbor, 2004; Huang, 2002; Kaygusuz, 2004). Globally there is a male preponderance in epistaxis except in the geriatric age group in some reports where no significant sex difference exists 16. The present study shows inflammatory condition, various neoplastic conditions, polyps which is consistent with other studies in developing countries that the most common cause of non-traumatic epistaxis was idiopathic followed by infection (Eziyi, 2009; Chaiyasate, 2005 and Labaran, 2008). Hypertension in this report shows epistaxis as evidence of poor blood pressure control and Maggots infestation mainly due to poor environmental hygienic condition.

The management of non-traumatic epistaxis is done in conventional way and well summarized in an age-old dictum: resuscitate the patient, establish the bleeding site, stop the bleeding and treat the cause of epistaxis (Daudia, 2009). Dealing with a patient recommends universal precautions for all health care personnel involved in the care of these patients, including face mask, gowns, hair coverage, and double-gloving. The key to controlling most epistaxis is to find the site of the bleeding and cauterizing with silver nitrate or bipolar diathermy (Daudia, 2009 and Rodney, 2009). Treatment

modalities can be separated into two groups; nonsurgical/conservative and surgical/interventional approaches. Nonsurgical approach has been reported to stop the bleeding in most of the cases 56.89% in present study which is found similar to another study (Rodney, 2009). Anterior nasal packing was the most frequent modality of treatment in this study. This form of treatment was reported as an effective treatment in some centers (Brazilian Journal of Otolaryngology, 2013). Posterior nasal packing was performed. Anterior nasal packing was used in 12 patients and only one patient need repacking (95.6%) successful of them, while posterior nasal packing was successful in 100% of the cases where it was tried. Urvashi et al (Urvashi, 2004), reported successful use of anterior nasal packing in 83.5% case while posterior nasal pack was successful in 95.6% of cases. Nasal packing has the advantage of easy placement and removal; there was no need for an anesthetist or theatre space for that treatment. It is also affordable to the patients. Complications of nasal packing include septal hematoma, sinusitis, syncope during insertion of nasal pack, pressure necrosis of the alae nasi, toxic shock syndrome (Urvashim, 2004). Most of our patients did not suffered this due to adequate precautions such as technique of insertion of the pack, use of antibiotics and nasal decongestant were administered as some of the adjunct treatment to forestall this. Cautery of the bleeding site can be performed chemically, electrically or with laser 25 though we used only electrical cautery. Cauterization in the form of electrical cautery should be carried out for those patients where the bleeding points could be identified during examination. Only one case was managed by electrocautery. We did not encounter any post cautery complications such as septal perforation or cartilage exposure. In this study, surgical treatment was done in 43.10 % of patients who presented with bleeding intranasal tumors, polyps and septal abnormalities and it was successful in 100% of them. No surgical ligation of any vessel was carried out on any patient in this study. The use of antimicrobial prophylaxis in the presence of nasal packing for the treatment epistaxis remains controversial (Daudia, 2009; Awan, 2001; Biswas, 2006). Most of literatures recommend that patients with high risk nasal packing should be started on prophylactic antibiotics, due to an increased risk for sinusitis and toxic shock syndrome. Blood soaked pack and raw mucosal surface are good media for bacterial multiplication resulting in infection including sinusitis and sometimes toxic shock syndromes (Abhay-Gupta. 1999).

Conclusion

Though a limited number of cases (58) included in the study, yet on the basis of this study it can be concluded that Epistaxis are very common in male and Their mean age was 40 years. Idiopathic is the most commonest cause of non-traumatic epistaxis and found to be more common in people of poor socioeconomic condition and underprivileged people .Anterior epistaxis is found to be more common posterior. Most case were successfully managed with conservative (Non surgical) treatment.

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One more article are waiting to be Published

- A.Q. Chowdhury, Epistaxis- Evaluation of Etiology mainly non-traumatic and its associated factors among the Patient attending at Tertiary Hospital.
