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Original Article

Frequency of Nontraumatic Epistaxis in Older Male Patients

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Abstract:

Introduction: *Epistaxis is a common problem which may affect all age groups. It has bimodal presentation.Nontraumatic epistaxis may affect more frequently among older male.*

Objective: *It is important to observe the common factors related with the different etiological types of epistaxis. It is also important to observe the various socio demographic characteristic of the patient with pattern of presentation of the epistaxis.*

Mehods: *Cross-sectional study in tertiary level hospital. From July 2012 to June 2013, 176 participants were selected.*

Results: *Traumatic epistaxis was more frequent (70.51%) among younger age group (age <45yeras), whereas non-traumatic epistaxis was more frequent (72.92%) among older age group (age >45yeras). There was a statistically significant difference between the different age group with their etiology of the epistaxis (P = <0.001).*

Conclusion: *Older males are more prone tonontraumatic epistaxis.*

Key words: *Epistaxis, non-traumatic,*

Introduction:

Epistaxis is a Greek word, means nose bleed.[1] Epistaxis is defined as a bleeding of the nasal mucosa.[2] Clinically any bleeding from the nostril, nasal cavity, or nasopharynx considered as epistaxis.[3]

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Epistaxis may affect all age groups[3]. Study shows it has common bimodal presentation[3, 4]. The prevalence is increased for children less than 10 years of age and then rises again after the age of 35 years.[4]

It is important to locate the site of bleeding in the nose, which can be classified as anterior or posterior bleeding.[5] Anterior bleeding is common in younger age group while posterior bleeding is common in older age group.[2,5] Children and adolescents are more often afflicted with minor episodes of anterior nasal bleeding, whereas the incidence of severe posterior nasal bleeding is greater in those who are more than 50 years old.[6] Anterior epistaxis is far more common than posterior epistaxis, accounting for more than 80% of cases[7], Anterior nosebleeds arise from

damage to Kiesselbach's plexus on the lower portion of the anterior nasal septum, known as the Little's area[4], whereas posterior nosebleeds arise from damage to the posterior nasal septal artery or sphenopalatine artery.[5]

Trauma is considered to be a major aetiological factor for local cause. Traumatic epistaxis is more common in younger individuals (under age 35 years) and is most often due to digital trauma, facial injury, or a foreign body in the nasal cavity.

Non-traumatic epistaxis is more characteristic of older patients (over age 50 years) and may be due to organ failure, neoplastic conditions, inflammation, or environmental factors (temperature, humidity, altitude). Hypertension may not be the cause for initiation of nasal bleed, but the loss of arterial muscle power to contract may result in persistence of bleeding. Rise in blood pressure may or may not be due to anxiety.[8]

This cross sectional study conducted in different major tertiary level hospitals in the Dhaka, Bangladesh, where the attending patients were from all the corners of the country and were more or less representative of all the population of Bangladesh.

During this study ethical implication was thoroughly looked upon. All the data pertinent to the patient will be confidential. The accumulated data will be analyzed by standard statistical method. The result of the study will provide some knowledge about the frequency of epistaxis, pattern of presentation and relation of different demographic and prevailing factors as its etiology that will provide basis for planning of preventive strategies and establishment of treatment guidelines.

To observe the various socio demographic characteristic of the patient with epistaxis.

1. To evaluate prevailing factors in patients with epistaxis.
2. To observe the pattern of presentation of the epistaxis.
3. To find out the common factors associated with the epistaxis.
4. To see the frequency of different factors causing epistaxis.

Methods:

Type of Study: Cross sectional study

Place of Study: Dhaka Medical College Hospital. Dhaka

Shahid Sorwardee Medical College Hospital. Dhaka, Sir Salimullah Medical college & Midford Hospital, Dhaka, Bangabandhu Sheikh Mujib Medical University. Dhaka

Period of study: July 2012 to June2013

Study population**:** Patient with nasal bleeding referred or come individually into the Emergency Department (ED) and admitted in Inpatient department (IPD) of the hospital fulfills the inclusion criteria of this study.

Sample size: 174 patients

Results:

During the period under study, a total 174 patients were studied. There were 128(73.56%) male and 46 females with a male female ratio of 2.78:1. Their age ranged between 4 years and 83 years (mean 43.58 SD±20.74 years). The main aetiology of the cause of epistaxis was grouped into traumatic and non-traumatic epistaxis patient group. Among them 78(44.83%) patient were in traumatic epistaxis patient group and 96(55.17%) patient were in non-traumatic epistaxis patient group.

Table I

Age distribution of the patient according to different sex (n=174)

Age(years)	Male	%	Female	%	Total	%
<16	19	14.84	8	17.39	27	15.52
16-30	16	12.50	8	17.39	24	13.79
31-45	21	16.41	9	19.57	30	17.24
46-60	31	24.22	12	26.09	43	24.71
>61	41	32.03	9	19.57	50	28.74
Total	128	100.00	46	100.00	174	100.00

Chi-square= 2.802 with 4 degrees of freedom. (P = 0.591)

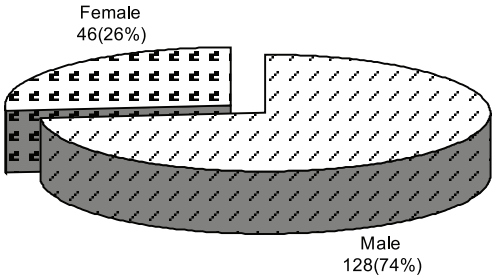

Fig.-1: *Sex distribution of the patient (n=174)*

Age ranged between 4 years and 83 years (mean 43.58 SD±20.74 years). Average age of male patient was 46.47 SD±19.89 and female patient 36.91 SD±19.35.There was a statistically significant difference between the male and female patient regarding their age (t=2.815 with 172 degrees of freedom, P = 0.005, 95% confiden ce interval for difference of means: 2.855 to 16.263.). 93(53.45%) patient were more than forty five years of age.

There was bimodal peak age distribution, one in young age (10-20 years) and others in older age (50-70 years).

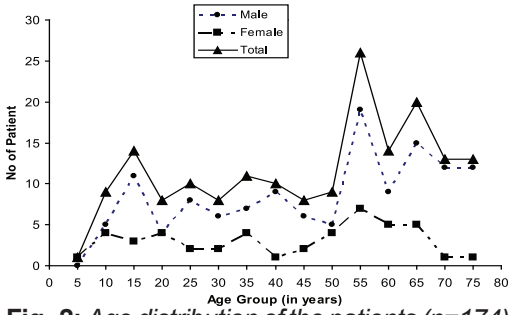

Fig.-2: *Age distribution of the patients (n=174)*

Table-II

Etiological factors of Epistaxis (n=174)

Type	No	%	Total	%
Traumatic			78	44.83
Nose prick	4	2.30		
FB	5	2.87		
Nose blow	4	2.30		
Blant injury	27	15.52		
Sharp injury	9	5.17		
Penitrating	5	2.87		
Multiple injury	12	6.90		
Iatrogenic	12	6.90		
NonTraumatic			96	55.17
Local				
Infective	5	2.87		
Vascular	2	1.15		
Neoplastic	12	6.90		
Other	2	1.15		
Total	21	12.07		
Systemic				
HTN	26	14.94		
Bleeding disorder	7	4.02		
Idiopathic	34	19.54		
Leukemia	3	1.72		
Others	5	2.87		
Total	75	43.10		
Total			174	100.00

z= 1.204; P = 0.228

There was no significant difference in the proportions of traumatic and nontraumatic aetiological group among the patient with epistaxis (P = 0.228).

Table III

Relation of different age group of the patient with different etiological factors of Epistaxis (n=174)

Age	Traumatic	%	Non-Traumatic	%	Total	%
<16	15	19.23	12	12.50	27	15.52
16-30	20	25.64	4	4.17	24	13.79
31-45	20	25.64	10	10.42	30	17.24
46-60	15	19.23	28	29.17	43	24.71
>61	8	10.26	42	43.75	50	28.74
Total	78	100.00	96	100.00	174	100.00

Chi-square= 39.949 with 4 degrees of freedom. (P = <0.001)

Traumatic epistaxis was more frequent (70.51%) among younger age group (age <45yeras), whereas non-traumatic epistaxis was more frequent (72.92%) among older age group (age >45yeras). There was a statistically significant difference between the different age group with their etiology of the epistaxis (P = <0.001).

Table V

Presentation of a patient with Traumatic epistaxis (n=78)

Presentation	Number	Percentage
Local Pain	71	91.03
Unconscious	4	5.13
Other injury	33	42.31
Nasal obstruction	56	71.79
Nasal deformity	35	44.87
Shock	3	3.85
Other	8	10.26

Local pain (91.03%), nasal obstruction, (71.79%) nasal deformity (44.87%) associated other maxillofacial injury (42.31%) was more frequent in traumatic patient

Table V

Sites of different etiological types of epistaxis

Sites	Traumatic	%	NonTraumatic	%	Total	%
Anterior	54	69.23	24	25.00	78	44.83
Posterior	5	6.41	46	47.92	51	29.31
Diffuse	19	24.36	26	27.08	45	25.86
Total	78	100.00	96	100.00	174	100.00

Chi-square= 44.199 with 2 degrees of freedom. (P = <0.001)

Significantly anterior epistaxis is common among the traumatic epistaxis (69.23%) and posterior epistaxis in nontraumatic epistaxis (47.92%). About 25.86% patient the exact site was not detected as there was diffuse bleeding

Table VI

Sides of different etiological types of epistaxis (n=174).

Type	Traumatic	%	Non-traumatic	%	Total	%
Unilateral	56	71.79	77	80.21	133	76.44
Left	33	42.31	44	45.83	77	44.25
Right	23	29.49	33	34.38	56	32.18
Bilateral	22	28.21	19	19.79	41	23.56
Total	78	100	96	100	174	100.00

Chi-square= 1.256 with 1 degrees of freedom. (P = 0.262)

133 (76.44%) patients were presented with unilateral nasal bleeding. Left side was slight predominate to the right side of the nose, left to right side ratio was 1.37:1 with no significant difference in the proportions (z= 0.926; P = 0.355.)

Discussion:

During the period of study, a total 174 patients were studied. The main aetiology of the cause of epistaxis was grouped into traumatic and non-traumatic epistaxis. Among them 78(44.83%) patient were in traumatic epistaxis patient group and 96(55.17%) patient were in non-traumatic epistaxis patient group.

Male were affected more frequently than female. There were 128(73.56%) male and 46(26.44%) females with a male female ratio of 2.8:1.

A male preponderance was documented in literature where M:F were 1.38:1[9], 1.56:1[10], 2:1 [11]. In some reports where no significant sex difference exists.[9,11] After 50 (in geriatric age) no significant deference between sex as reported,[12] the ratio is close to 1:1.[13] It is possible that the female pre-menopausal state may provide a significant protection from this disease. The mechanism for this is unknown, but may be secondary to a direct effect of oestrogen on the nasal mucosa or vasculature, or the healing of vessels in this region. Alternatively, this observation may simply be a reflection of protection the pre-menopausal state provides against cardiovascular disease in general.[12]

Their age ranged between 4 years and 83 years (mean 43.58 SD±20.74 years). Average age of male patient was 46.47 SD±19.89 and female patient 36.91 SD±19.35.There was a statistically significant difference between the male and female patient regarding their age (P = 0.005).There was a bimodal peak age distribution, One in young age (10-20 years) and other in older age (50-70 years). 93(53.45%) patient were more than forty five years of age.

There was bimodal distribution in the age of onset of epistaxis reported from north American, Europe[13,14] and in sub-continent.[14,15]

The higher prevalence in younger males is most probably related to more exposure to trauma on account of active involvement in out-door activities; sports, traveling and inter-personal violence. Whereas, in the older age group vascular pathology and hypertension are responsible in the majority. Some authors portray epistaxis as a disease of the young, whereas others have noted epistaxis to be more common in the elderly.[16] The study shows an increase frequency between the age of 15-25 years[17] and later from 45 to 65 years with no evidence of sex predilection. In Dehradun, India study most of the patients was older than 40years (63.64%) with a mean

age of 47.8 which correlates with other reports which showed that epistaxis is a geriatric problem.[18]

Among the 174 patient with epistaxis 132 (75.86%) were urban and 42(24.14%) were rural. Significantly more patient were from urban resident (z=5.971; P= <0.001). Regarding etiology (p=0.123) and sex distribution (p=0.575) there were no significant differences between urban and rural habitat.

In another study in Pakistan there was 72(84.7%) urban inhabitant, and the remaining 13 patients (15.2%) were rural.[19] In India, majority of the patients were from urban area, 68(77.27%) .[20]

This may due to the difficulties in transportation in addition to that most patients from rural areas are managed by local health centers and not referred to the hospital especially if one remember that, in general nose bleed in the young person either are easy to treat or stop spontaneously.

Patient with epistaxis were more frequent from the month of September to March (autumn to spring). Peak incidence was in the month of November. 103 (59.19%) patient with epistaxis attended in the autumn and winter season. Among them 58(33.33%) patient were attended in autumn and 45(25.86%) patient in winter.

Higher incidence of admitted cases was seen in winters in other study.[21] Episode of epistaxis was more in autumn and winter months and low during summer and rainy months found in another study.[22,23] The effect of decreased ambient humidity leads to reduced nasal humidification. Dry air facilitates excoriation and cracking of the nasal mucosa. This subsequently reduces local wound healing mechanisms, and any local traumatic or inflammatory event has an increased ability to disrupt the nasal mucosa. Some other report the incidence increases in hot dry climate [22,24] also in rainy season in Nigeria.[25]

The etiological profile of epistaxis has been reported to vary with age and anatomical location (Pallian DJ 2005). Among the study patient, 78(44.83%) patient were in traumatic epistaxsis patient group and 96(55.17%) patient were in non-traumatic epistaxis patient group.

The present study shows that the most common cause of epistaxis was trauma (44.83%) followed by idiopathic(19.54%) and hypertension(14.94%), which is consistent with other studies in developing countries.[12,18] This is in discordance with what was found in the Eastern part of Nigeria where it represented the dominant form.[5,11] Findings in most western literature, cites idiopathic causes as the commonest, followed by trauma.[8,12]

Among the non-traumatic epistaxis patient group, 21(12.07%) patient had local cause and 75(43.10%) patient had systemic cause. Idiopathic cause was the most common (19.54%) cause followed by hypertension (14.94%) and nasal neoplastic disease (6.90%) in non-traumatic epistaxis patient group.

This trauma varied from minor injury such as digital trauma to varying degrees of nasal injury from road traffic injury. The nose being a prominent feature on the face is highly susceptible in craniofacial injury. Most of our patients with epistaxis from trauma were actually victims of road traffic injury. Trauma being the most common cause of epistaxis can partly explain the frequency of this problem in males. This group is the adventurous group in our community. They are often on the road in search of economic well-being thereby making them prone to such accidents. High incidence of traumatic epistaxis resulting from road traffic crashes

in our study calls for urgent preventive measures targeting at reducing the occurrence of RTCs in order to reduce the incidence of epistaxis in this region.

Hypertension being the third commonest cause in this report (14.94%) shows epistaxis as evidence of poor blood pressure control. In Nigeria, some patients of epistaxis occurred when hypertension was not controlled due to cessation of antihypertensive drug therapy.[23] Varsney and Saxena (2005) in India recorded hypertension as the second commonest cause of epistaxis after idiopathic causes while Chaiyasate et al (2005) in Thailand reported hypertension to be the commonest cause of epistaxis followed by idiopathic causes.[12,14] The need for regular blood pressure check and compliance to antihypertensive medications must be emphasized. Epistaxis and arterial hypertension are frequent in the population, more evident in patients with severe epistaxis, with prevalence of 24 to 64% in these cases.[24]

Traumatic epistaxis was more frequent (70.51%) among younger age group (age <45yeras) a. whereas non-raumatic epistaxis was more frequent (72.92%) among older age group (age >45 yeras). There was a statistically significant difference between the different age group with their aetiology of the epistaxis (P = <0.001).

Traumatic epistaxis was more frequent (83.33%) among male patient (p=0.014).

The male preponderance in this study may be attributed to high incidence of traumatic epistaxis which tends to affect young males because of their frequent involvement in high risk behaviour. Young males are the most active in the population and so are more vulnerable to trauma from nose picking especially among children, fights, road traffic accident with maxillofacial injuries causing epistaxis.

Non-traumatic cause of epistaxis was significantly common among the older male patient (p=<0.012). Most of the older patients have the history of longstanding hypertension, atherosclerosis, chronic disease (liver and kidney) and neoplastic pathology.

Significantly anterior epistaxis is common among the traumatic epistaxis group (69.23%) and posterior epistaxis in non-traumatic epistaxis group (47.92%). About 25.86% patient the exact site was not detected as there was diffuse bleeding.

Little's area was the most frequent (79.49%) site in anterior epistaxis.

133 (76.44%) patients were presented with unilateral nasal bleeding. Left side was slight predominate to the right side of the nose, left to right side ratio was 1.37:1 with no significant difference in the proportions (z= 0.926; P = 0.355.)

Conclusion:

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 centers where there are limited facilities. A high incidence in young adults was reported with preponderance of males over females. Occurrence of different types of epistaxis was strongly related with the certain demographic factors like age, sex, season of the year and habitat of the patient. This study supports the credibility of conservative management procedure in the treatment of epistaxis. Simple nasal packing is the commonly practice conservative method with high success. Hence, this approach should be the preferred option in the management of epistaxis especially in developing countries.

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