Hand Dominance and Blood Group: Association in Epistaxis

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Abstract The present work was undertaken to study the association of epistaxis with hand dominance and blood group. The present cross sectional study was conducted among 360 cases of epistaxis who reported to the E.N.T outpatient department of tertiary care centre in central India during the period of July 2014 to July 2015. Examination was carried out by self prepared Performa which included demographic information, detailed history and clinical examination findings. Total of 360 patients were included in the study, the mean age being 31.2 years of which there were 208 males and 152 female. Most of the patients (48.9 %) presented with 4–6 episodes of nasal bleed per year. In present study, local trauma (22.2 %) followed by nose picking (16.7 %) were the commonest local etiological factors while Idiopathic thrombocytopenic purpura, pancytopenia etc. (15.6 %) being the commonest of general causes followed by hypertension (13.4 %). The study showed highly significant association of A⁺ blood group with epistaxis ($p = 0.002$). Most of the patients (54.8 %) presented bleeding episodes mainly in summer season. In our study we found statistically significant

($p = 0.0001$) association of hand dominance and side of nasal bleeding. Anterior nasal bleeding was significantly more presenting symptom in all epistaxis patients. This study underlines the importance of epistaxis as the most frequent emergency diagnosis in ENT. The observed association of A⁺ blood group and Hand dominance in epistaxis provokes to have further large scale studies in this area.

Keywords Epistaxis · Handedness · Blood group

Introduction

Stedman's Medical Dictionary defines epistaxis as bleeding from the nose. It is derived from the word 'Epistazo' where epi means 'above' and stazo means 'to fall in drops' [1]. Hippocrates (500 BC) was the first to appreciate that pressure on the alae nasi was an effective method of controlling nose bleeds. He was the first to describe vicarious menstruation [2].

Epistaxis is one of the commonest medical emergencies that place considerable demands on otorhinolaryngologist. Furthermore, according to the data of the French national medical statistical centre (PMSI 2002), death occurred in 38 patients as a direct consequence of epistaxis in 2002. That fact alone confirms the vital risk of this pathology. It is thought to occur more frequently in males than in females, and there is an increasing incidence with age [3, 4].

In this key clinical areas are the Little's area and the Woodruff's plexus. Little's area lies in the anteroinferior part of septum; a common site of anterior epistaxis in children and young adults. Woodruff's plexus lies just inferior to the posterior end of inferior turbinate; gives rise to posterior epistaxis in adults [5].

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The causes of epistaxis are numerous which can be divided into local and general causes. In over 80 % of cases, the aetiology remains obscure, with the remainder being attributed to craniofacial trauma, anticoagulant therapy or blood dyscrasias [6, 7].

There is no established literature regarding the definitive correlation between various causative factor and epistaxis. The present work was undertaken to study the association of epistaxis with hand dominance and blood group.

Materials and Methods

The present cross sectional study was conducted among all the patients reported to the E.N.T outpatient department (O.P.D.) of tertiary care centre in central India with the chief complain of epistaxis. Study was undertaken during the period of July 2014 to July 2015. Total 395 patients were recruited for the study during this period. Out of 395 patients of epistaxis 35 patients were excluded as they presented following recent nose and paranasal sinus surgeries so, 360 patients of both sexes and all age groups presenting with epistaxis were included in this study.

As soon as the patient presented to the hospital, priority was given to arrest the bleeding and to improve the general condition of the patient. Suction of the nasal cavity was done to localise the site of bleeding. Where the bleeding was from Little's area, the site was cauterized with 15 % silver nitrate or 50 % trichloro acetic acid (TCA); where the site was not localised and the patient presented with anterior epistaxis, anterior nasal packing was done with BIPP/Sofradex ribbon gauze or merocel packs. In cases of continued bleeding or posterior epistaxis or both, post nasal packing with Foley's catheter was done.

Once the bleeding was controlled, detailed clinical history and examination was carried out by self prepared Performa which included demographic information and detailed history and clinical examination findings. Informed consent was taken from each patient prior to the clinical examination. Ethical clearance was obtained from institutional ethical committee.

Patients were interrogated for any meteorological factor being responsible for epistaxis. Patients were specifically asked for hand dominance and Blood group was checked for each patient. All routine blood investigation and special investigation, wherever required were done.

Statistical analysis was done using Statistical Package of Social Science (SPSS Version 19; Chicago Inc., USA). Data comparison was done by applying specific statistical tests i.e. Chi Square test to find out the statistical significance of the comparisons. Quantitative variables were compared using mean values and qualitative variables using proportions. Significance level was fixed at $p \leq 0.05$.

Results

A total of 360 new cases of epistaxis were included in the study with the exclusion of patients with recent nasal and paranasal surgeries. In our study minimum age of the patient was 5 years and the maximum age of patient was 65 years with the mean age being 31.2 years of which there were 208 males and 152 female patients but there is no statistically significant sex predilection of epistaxis. Most of the patients (48.9 %) presented with 4–6 episodes of nasal bleed per year. In the present study, local trauma (22.2 %) followed by nose picking (16.7 %) were the commonest local etiological factors for epistaxis (Fig. 1) while bleeding disorders like Idiopathic thrombocytopenic purpura, pancytopenia etc. (15.6 %) being the commonest of general causes followed by hypertension (13.4 %) but there is significant difference in the etiologies of male and female patients of epistaxis ($p = 0.022$) (Fig. 2). The study showed highly significant association of A⁺ blood group with epistaxis ($p = 0.002$) (Table 1). In our study we found statistically significant ($p = 0.001$) association of hand dominance and side of nasal bleeding, we found left sided nasal bleeding in 86.6 % cases of right handed patients and 58.3 % left handed patients had right sided nasal bleed (Table 2). Eventhough most of the patients (54.8 %) presented bleeding episodes mainly in summer season but there is no statically significant ($p = 0.127$) association of seasonal distribution and epistaxis (Table 3). Anterior nasal bleeding was significantly more presenting symptom (69 %) in all epistaxis patients (Fig. 3).

Discussion

The present study showed epistaxis being more common in 2nd and 3rd decade (62.2 %). Amusa et al. [8] had a similar findings of around 40 % cases until 3rd decade. In our study 50 % patients reported more episodes in summer season while 21.1 % had no seasonal preference, these findings are in contradiction to study done by Danielides et al. [9] with 18 % whole year and 9 % in warm period but

Fig. 1 Local etiological factors of epistaxis

Fig. 2 General etiological factors of epistaxis

Table 1 Association between epistaxis and blood groups

Blood groups	Male n (%)	Female n (%)	Total n (%)	Chi square value	p value
A ⁺ ve	92 (44.3 %)	64 (42.1 %)	156 (43.3 %)	22.0	0.002 (HS)
B ⁺ ve	20 (9.6 %)	32 (21.1 %)	52 (14.4 %)		
AB ⁺ ve	12 (5.8 %)	20 (13.2 %)	32 (8.9 %)		
O ⁺ ve	30 (28.8 %)	24 (15.8 %)	84 (23.3 %)		
A ⁻ ve	10 (4.8 %)	6 (3.9 %)	16 (4.4 %)		
B ⁻ ve	9 (4.3 %)	3 (1.9 %)	12 (3.3 %)		
AB ⁻ ve	02 (0.9 %)	2 (1.3 %)	4 (1.2 %)		
O ⁻ ve	3 (1.5 %)	1 (0.7 %)	4 (1.2 %)		

there was no statistically significant association in both the studies.

In earlier studies by Amusa et al. [8] Trauma (70.9 %) which included the local trauma as well as nose picking was the commonest cause and these findings are similar to our study which showed 38.9 % cases of epistaxis

Table 2 Association between hand dominance and side of bleeding

Hand dominance	Right side N (%)	Left side N (%)	Both N (%)	Total N (%)	Chi square value	p value
Right handed	68 (21.7 %)	188 (60.3 %)	56 (17.9 %)	312 (86.6 %)	30.2	0.001 (HS)
Left handed	28 (58.3 %)	12 (25 %)	8 (16.7 %)	48 (13.3 %)		
Total	96 (26.6 %)	200 (55.6 %)	64 (17.8 %)	360 (100 %)		

Table 3 Seasonal Distribution of epistaxis among study subjects

	Male N (%)	Female N (%)	Total N (%)	Chi square value	p value
Summer	114 (54.8 %)	66 (43.4 %)	180 (50 %)	5.70	0.127 (NS)
Winter	28 (13.5 %)	32 (21.1 %)	60 (16.7 %)		
Monson	24 (11.5 %)	20 (13.2 %)	44 (12.2 %)

Fig. 3 Site of bleeding among epistaxis patients

following trauma while the study by Varshney et al. [10] found Idiopathic as the commonest cause.

None of the studies till now reported gender difference in the etiologies of epistaxis. Our study showed statistically significant difference among males and females, $p = 0.02$ for local causes and $p = 0.006$ for General causes. Hussain et al. [11] showed 71.6 % cases presented with anterior bleed which is in concordance with our study (69.4 %). In the earlier studies by Joice et al. [12] and Hardyck et al. [13] no significant association was found between side of nasal bleeding and hand dominance but the present study showed highly significant ($p = 0.001$) association between right handedness and left sided nasal bleed.

Conclusion

This study underlines the importance of epistaxis as the most frequent emergency diagnosis in ENT. The observed association of A⁺ve blood group and Hand dominance in epistaxis provokes to have further large scale studies in this area.

Compliance with Ethical Standards

Conflict of interest Leena Jain declares that she has no conflict of interest. Sadat Qureshi declares that he has no conflict of interest. Ashish Maurya declares that he has no conflict of interest. Shalini Jadia declares that she has no conflict of interest. Mrityunjay S declares that he has no conflict of interest.

Ethical Approval All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

Informed Consent Informed consent was obtained from all individual participants included in the study.

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