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Original Research Article

Management of pediatric epistaxis in different age group in a tertiary care centre

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ABSTRACT

Background: Epistaxis is a common otorhinological emergency seen in children. Aetiology and treatment differ in different age group.
Methods: A retrospective study conducted in a tertiary care hospital and data of pediatric patients (under 18 year) admitted with epistaxis were divided into three different age group. Group A (2 years to <5 years), group B (5 to <12 years) and group C (12 years to 18 years) and analysed.
Results: Out of 216 total patients male outnumbered female in all age groups. Trauma including nose picking was most common cause in all the three age groups (54%, 45.4% and 31% respectively). 2nd most common cause noted was blood dyscrasia in group A (17.5%), idiopathic in group B (23.8%) and group C (22.5%). Tumours accounted for 11.3% of patients in group C. Observation alone (i.e. nasal mucosal hydration, use of topical decongestants, topical antibiotics) were the main intervention needed (70% in group A, 50% in group B and 28% in group C). Nasal packing and other methods were needed mainly in the older age groups. 61% of traumatic patients managed with observation alone whereas 55.8% of inflammatory group and 66.7% of blood dyscrasia group needed nasal packing for control of epistaxis.
Conclusions: Trauma including nose picking is the most common cause of pediatric epistaxis among all age groups and usually managed well with observation alone. Nasal packing and other invasive treatment modalities are mostly needed in older age group of pediatric patients and those with non-traumatic causes of epistaxis.

Keywords: Aetiology, Age group, Children, Epistaxis, Management

INTRODUCTION

Epistaxis is a common problem in pediatric population. Most are spontaneous, anterior and self-limiting. Gently pressing the nasal ala for 5-10 minute is usually all that is required. Up to 60% of children will have had at least one nosebleed by age ten. Commonly occur between the ages of 3 and 8 years, the incidence declines in adulthood. However 50% of all adults presenting with epistaxis had epistaxis during childhood.[1] Children younger than 2 years rarely present with epistaxis.[2] Epistaxis also occurs more frequently in dry environments such as in the desert or in the winter in the cooler climates, where, the lack of humidity dries the mucosa of the anterior nasal septum. Most often, these nosebleeds tend to be minor and are relatively easily managed with pressure or stop spontaneously.[3] Nonetheless; epistaxis may herald a developing neoplasm, particularly if bleeding is predominantly unilateral and is associated with a history of nasal obstruction. The etiological profile of epistaxis has been reported to vary with age and anatomical location. The treatment of epistaxis also requires a systematic and methodical approach and options vary according to the cause, location, and severity of the haemorrhage.[4-9] Very few data are available regarding aetiology and treatment protocols in different pediatric

age group. We here, report our experience in a tertiary care hospital about the aetiology, management aspects of this issue. The results of this study will help in planning of preventive strategies and establishment of management protocols.

METHODS

This was a retrospective observational study conducted in a tertiary care hospital in eastern India. Data of pediatric patients (children under 18 year of age) admitted with epistaxis were collected from hospital records from January 2013 to January 2016. Patient particulars, demographic profile, etiology identified, investigations and treatment needed during hospital stay noted. Children were divided into three different age groups. Group A 2 years to <5 years, group B 5 to <12 years and group C 12 years to 18 years. Data were then tabulated and analysed.

RESULTS

Total 216 pediatric patients of less than 18 years were admitted during the study period. Males outnumbered females in all the three age groups. Demographic data of the patients were detailed in Table 1. Family history of epistaxis was present in 14% of group A patients compared to 5.7% in group B and 5.6% in group C. History of consanguinity noted in 15.8% of group A compared to 6.8% in group B and 9.8% in group C patients.

Table 1: Demographic profile of different age group.

Group	A (n=57)	B (n=88)	C (n=71)
Age (Years)	2 to <5	5 to <12	12 to 18
Male(n=130)	34	46	50
Female(n=86)	23	42	21
Family history of epistaxis	8	5	4
Consanguinity	9	6	7

Most common cause of epistaxis identified was trauma including nose picking in all the three age groups (54%, 45.4%, and 31% respectively in group A, B and C). 2nd most common cause noted was blood dyscrasia (including leukemia, haemophilia, thrombocytopenia, thalassemia) in group A (17.5%), whereas idiopathic was 2nd most common cause in group B (23.8%) and group C (22.5%). Tumours including angiofibroma, polyp accounted for 11.3% of patients in group C and nil in other age groups. Inflammatory causes like rhinitis, sinusitis, adenoiditis, allergy and 5 cases of foreign body accounted for rest the cases (Table 2).

Different treatment modalities needed summarised in Table 3. Observation alone (i.e. nasal mucosal hydration, use of topical decongestants, topical antibiotics and removal of foreign body in selected cases) were the main intervention needed in 48% of overall patients (70% in group A, 50% in group B and 28% in group C). Nasal packing and other methods were needed mainly in the older age group of patients (group B and C). Table 4 summarised the different successful treatment modalities needed for different age group of patients.

Table 2: Aetiology of epistaxis in different age groups.

Causes	Group A (n = 57)	Group B (n = 88)	Group C (n = 71)
Trauma (n = 93)	31	40	22
Idiopathic (n = 46)	9	21	16
Inflammatory (n = 34)	7	12	15
Tumours (n = 8)	-	-	8
Foreign body (n = 5)	-	3	2
Blood dyscrasia (n=30)	10	12	8

Table 3: Treatment modalities.

Modalities of treatment	Description
Type 1	Observation (medication)
Type 2	Anterior nasal packing(ANP)
Type 3	ANP+Foleys catheter balloon tamponade
Type 4	Surgery
Type 5	Cauterization with electro cautery
Type 6	Multiple procedures

Table 4: Successful management option needed for different groups.

Treatment modality	Group A (n = 57)	Group B (n = 88)	Group C (n = 71)
Observation (medication) (n = 104)	40	44	20
Anterior nasal packing(ANP) (n = 67)	15	30	22
ANP+Foleys catheter balloon tamponade (n = 29)	2	10	17
Surgery (n = 13)	-	2	11
Cauterization with electro cautery (n = 2)	-	2	-
Multiple procedures (n = 1)	-	-	1

61% of traumatic patients managed with observation alone whereas 55.8% of inflammatory group and 66.7% of blood dyscrasia group needed nasal packing for control of epistaxis (Table 5).

Table 5: Successful management as per aetiology.

Cause	Type 1 (n = 104)	Type 2 (n = 67)	Type 3 (n = 29)	Type 4 (n = 13)	Type 5 (n = 2)	Type6 (n = 1)
Trauma (n = 93)	57	20	16	-	-	-
Idiopathic (n = 46)	22	13	8		2	1
Inflammatory (n = 34)	10	19	-	5	-	-
Tumours (n = 8)	-	-	-	-	8	-
Foreign body (n = 5)	5	-	-	-	-	-
Blood dyscrasia (n = 30)	10	15	5	-	-	-

Table 6 enlists the average hospital stay needed for different treatment modalities. Observation and electro cauterisation patients needed least no of hospital stay. Those needing surgery or multiple modalities of treatment for control of Epistaxis needed maximum number of hospital stay.

Table 6: Duration of hospital stay as per treatment modalities.

Treatment modality	Average hospital stay (days)
Type 1	2
Type 2	3
Type 3	4
Type 4	7
Type 5	2
Type 6	7

DISCUSSION

Epistaxis is a common condition in children. Thirty per cent of children under 5 years of age, 56% of those aged 6-10 years and 64% of those aged 11-15 years, have had a least one episode of epistaxis.[10] Males are more commonly affected than females in our study which correlates with other similar studies.[11-13] In our study family history of epistaxis was present in 7.9% of total pediatric cases as compared to 10% in a study by Barkowitz et al 26% by Damrose et al and up to 46% by Davies K et al.[11,12,1] Children in the age group of 2-5 had the highest incidence of positive family history and also history of consanguinity. This is further supported by the fact that this group had higher incidence of blood dyscrasia, as aetiology of epistaxis.

A committed search for the bleeder as well as a deliberate effort to find the cause of epistaxis is necessary, because too many cases of epistaxis are grouped as idiopathic or primary.[14] Most common cause of pediatric epistaxis identified was trauma including nose picking in all the three age groups in our study which is similar to finding in other studies.[1,3] Younger patients and those with a previous history of emergency department attendance are more likely to have a bleeding diathesis.[15,16] In our study 2nd most common cause noted was blood dyscrasia in less than 5 year age group patients whereas idiopathic was 2nd most common cause in older children (group B and C). Unilateral nosebleeds in association with facial swelling, pain or nasal obstruction are concerning features suggestive of more unusual causes such as tumours. In adolescent males, juvenile nasopharyngeal angiofibroma, a rare highly vascular benign tumour which is locally aggressive, may present with symptoms of painless nasal obstruction with severe epistaxis.[17] Tumours including angiofibroma accounted for 11.3% of patients in group C but nill in other age groups in our study.

Frequency distribution for causes of epistaxis looks unique in children as compared with adults. Therefore, identification of the cause is important, as it strongly reflects the management plan.[16] Observation with nasal mucosal hydration, topical antibiotic ointments and nasal decongestants were the main intervention needed in 48% of all patients (70% in group A, 50% in group B and 28% in group C). Nasal packing and other methods were needed mainly in the older age group of patients (group B and C). These findings are similar to the results of the studies by Davies K et al and Damrose JF.[1,12] Topical antiseptic cream does appear to assist in reducing the frequency of nosebleeds in clinical practice, and a randomised control trial of 103 children demonstrated that 4 weeks treatment with 0.5% neomycin+0.1% chlorhexidine cream (naseptin) is effective (relative risk reduction 47%, absolute risk reduction 26%, number needed to treat 3.8), although not statistically significant, according to recent a Cochrane review.[18]

In present study 61% of traumatic patients managed with observation alone whereas 55.8% of inflammatory group and 66.7% of blood dyscrasia group needed nasal packing for control of epistaxis. In children with epistaxis secondary to underlying haematological coagulopathies, the primary focus is on correcting underlying clotting problems where possible, and/or the use of topical haemostatic agents.[19] Patients with nasal mass lesion or with adenoid hyperplasia were managed with surgical removal of the lesion.

Observation and electro cauterisation patients needed least no of hospital stay. Those needing surgery or multiple modalities of treatment for control of epistaxis, needed maximum number of hospital stay. These observations are in concordance with the literature.

CONCLUSION

Trauma including nose picking is the most common cause of pediatric epistaxis among all age groups and usually managed well with observation alone (i.e. nasal mucosal hydration, use of topical decongestants, topical antibiotics). Nasal packing and other invasive treatment modalities are mostly needed in older age group of pediatric patients and those with non-traumatic causes of epistaxis. Blood dyscrasia is an important cause especially in younger age group and those with recurrent bleeds and needs packing other than transfusion of the deficient product. Tumours should be suspected in adolescent age group with unilateral nasal obstruction and needs surgical treatment.

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