



ORIGINAL ARTICLE



STUDY OF EPISTAXIS IN CHILDREN

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Abstract

Epistaxis means bleeding from the nose. It is a common clinical condition-encountered by the otorhinolaryngologist. In antique medicine, bleeding from the nose has been concepted with great curiosity. Severe epistaxis still constitutes a clinical problem and a challenge in otorhinolaryngology practice. The causes of epistaxis are numerous which can be divided into local and general causes. Common local causes are Trauma, Infections, Foreign bodies, Deviated nasal septum, Neoplasms. General causes are Hypertension, Blood dyscrasias, Chronic liver disorders, Chronic kidney diseases, Overuse of salicylates and anticoagulants. The present work has been undertaken to study the etiopathogenesis and management of epistaxis by different methods such as medical line of management, chemical cautery, anterior and posterior nasal packing, arterial ligation and surgical methods. Objective of the given is to evaluate the cause of epistaxis in 50 cases of age 1-15 years selected at random, with the help of relevant investigation and to find out the modality of treatment for the control of epistaxis. This study shows how important is to remove the primary cause in controlling epistaxis.

Keywords: Epistaxis, Modality of treatment, Aetiopathology of epistaxis

1 | INTRODUCTION

Mahomed (1880) who pioneered the development of sphygmomanometer stated that 'the frequency with which severe epistaxis occur in old people with high arterial 13 pressure is striking and for them very fortunate for if their noses did not bleed their brains would[1].

The rate of arterial ligation differed in various series. Senturia (1949) reported 4.5% arterial ligations, Hallberg (1952) 8% and Federspil (1971) 1.7%.

Federspil (1971) pointed out that arterial ligation should be considered instead of renewed packing, if the bleeding cannot be arrested with conservative measures [2]. Woodruff (1949) described an area of dilated veins in the post part of the nose underneath the port end of inferior turbinate. He called this area as 'Nasopharyngeal plexus' [3]. Shaheen (1970) was not able to find any difference in the distribution of blood pressure in subjects suffering from epistaxis from that of a control group. He pointed out that the relationship of arterial muscle degeneration to

epistaxis is probably in the persistence rather than initiation of bleeding, because the arteries with a defective muscle layer lack the power to contract [4]. A retrospective clinical study (June 1998 to December 2000) was done in 88 patients with epistaxis by Varshney et al. The incidence of epistaxis was 0.84% of all cases. The maximum number of cases (36%) were in the age group of 40-50 years and the mean age was 47.8 years. The male to female ratio was 1.4:1. The number of cases were more in autumn and winter months. The etiology of epistaxis comprised of idiopathic (35.2%), cardiovascular (32%), infection (19.3%), trauma (5.7%) and blood dyscrasias (4.5%). Out of 88 cases, 70.5% responded to non-surgical methods, anterior nasal packing being the most common. Among the 29.5% cases requiring surgical intervention, 16% responded to cryotherapy. Blood transfusion was required in 7% cases[5]. Non-surgical control of epistaxis (nasal packing) is adequate in many cases.

Hussain et al. conducted a study to evaluate the aetiology and efficacy of management protocol of epistaxis in 313 patients from March 2003 to March 2006. This study demonstrated a bimodal distribution with incidence peaks in below 25 years and above 50 years of age. Males were affected twice more than females. Anterior nasal packing was the most effective method of controlling anterior epistaxis; while posterior bleeding was controlled by posterior nasal packing with Foley's catheter. The most common cause was found to be trauma, followed by hypertension[6]. Garcia et al. evaluated tolerance and efficiency of two nasal blocking systems for posterior refractory epistaxis. A five-year prospective study was done in patient with epistaxis who required post nasal packing at the University of Valencia, Spain from 2005-10. Two

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groups were considered: one group was treated with a bi-chamber pneumatic inflation system and other one using nasal reinforcement. The tolerance was measured by means of an analogue scale of pain intensity during placement and maintainance. The efficiency was evaluated by episodes of re-bleeding, other concomitant measures and side-effects. They concluded that the classical posterior packing with gauze is less rapid and comfortable to adapt, but it ensures a higher success rate in the control of epistaxis, produces fewer local injuries and reduces sanitary costs in comparison with inflatable balloon packing[7]. Compared to the controls, the epistaxis had significantly higher blood pressures (146 mmHg vs 123 mmHg systolic and 91.3 mmHg vs 78.2 mmHg diastolic), higher proportions of patients with previous history of hypertension (32.3% vs 7.9%) and family history of hypertension (12.9% vs 2.6%). Their findings support an association between epistaxis and hypertension in the study population[8]. Asanau et al. (September 2009), performed a retrospective study comparing bilateral endoscopic ligation of the sphenopalatine artery alone (ELSPA) and bilateral endoscopic ligation of sphenopalatine artery with concomitant bilateral external ligation of the anterior ethmoidal artery (ELSPEA) in the management of persistent epistaxis. Forty-five patients were enrolled in the study. There were 20 patients in group A (ELSPA) and 25 in group B (ELSPEA). Three patients in group A (ELSPA) and no patient in group B (ELSPEA) had long term bleeding. The difference was not statistically significant. They concluded that ELSPA and ELSPEA are effective, well-tolerated, reliable procedures if performed by an experienced surgeon. They can be appropriate methods to treat severe recurrent epistaxis refractory to repeated nasalpacking[9]. In April 2010, Supriya M et al. conducted a study to assess the impact of site of idiopathic epistaxis on adult patient management and its association with patient demographics and co-morbidities at Department of Otolaryngology, Aberdeen, 22 Scotland, UK. Out of the 100 adult patients, 53 had anterior and 47 had posterior site of bleeding. The site of epistaxis was not related to the patients's age, medical condition or medication[10].

STUDY OF EPISTAXIS IN CHILDREN

The main objectives of conducted study is to Evaluate the various aetiopathology of epistaxis in 50 cases of 1-15 years, to evaluate the modality of age, sex and site distribution and to assess the various modalities of management of epistaxis.

2 | EXPERIMENTATION AND METHOD OF EVALUATION

1. Complaints and duration of symptoms taken.
2. History of the patient and general physical examination was done.
3. Examination included anterior rhinoscopy, diagnostic nasal endoscopy, X-ray nasopharynx ctpns, to assess any associated chronic sinusitis / nasal polyps / tumours.
4. Patients who full filled the inclusion criteria were selected for the study. All the were evaluated clinically and endoscopically for the subjective and objective relief of symptoms and patients.
5. A detail description of the procedure was given to the patients and their attendants and their consent is obtained. Patients were evaluated under local anaesthesia and were followed to a period of 3 months for complications and recurrences. General anaesthesia is used for apprehensive and uncooperative patients.

3 | RESULTS AND DISCUSSIONS

The present study was conducted at GOVT ENT HOSPITAL, KOTI, over a period of 2 years. A total of 50 patients of age 1-15yrs who presented with epistaxis were studied.

TABLE 1: AGE DISTRIBUTION

AGE	NO OF PATIENTS	PERCENTAGE
1-4	6	12
5-8	23	46
9-12	14	28
13-15	7	14
TOTAL	50	100

TABLE 2: SEX DISTRIBUTION

SEX	NO OF PATIENTS	PERCENTAGE
MALE	28	56
FEMALE	22	44
TOTAL	50	100

TABLE 3: SIDE DISTRIBUTION

SIDE	NO OF CASES	PERCENTAGE
RIGHT	8	16
LEFT	10	20
BILATERAL	32	64
TOTAL	50	100

TABLE 4: AETIOLOGY IN STUDY

S.NO	AETIOLOGY	NO. OF PTS
1	IDIOPATHIC	13
2	FOREIGN BODY	5
3	NASAL PICKING	10
4	INJURY NOSE	3
5	DNS WITH SPUR	4
6	ADENOIDITIS	6
7	CRS	5
8	BENIGN TUMOURS	4

TABLE 5: TREATMENT DONE UNDER STUDY

S.NO	PROCEDURE	NO.OF SURGERIES
1	CONSERVATIVE	19
2	SEPTOPLASTY	3
3	FESS	2
4	ADENOIDECTOMY	6
5	ANP	9
6		4
7	CAUTERIZATION	2
8	LIGATION	1
9	EXCĪSION	4

The current study was carried out for a period of 2 years on 50 pts of age 1-15 yrs presenting with complaints of bleeding per nasal cavity where patients were addressed either conservatively or surgically. The aim of present study is know the etiology pathology and treatment options available for the epistaxis in children.

The incidence of epistaxis was more common in males with a male:female ratio of 1.3:1. The age in-

TABLE 6: RESULTS OF OUTCOME OF INTERVENTIONS

S.NO	PROCEDURE	INTERVENTION IN PTS	RECURRENCE
1	CONSERVATIVE	14	7
2	DNE GUIDED REMOVAL	5	1
3	SEPTOPLASTY	3	1
4	FESS	2	1
5	ADENOIDECTOMY	6	2
6	ANP	9	2
7		4	0
8	CAUTERY	2	0
9	LIGATION	1	0
10	EXCISION OF TUMOR	4	0

TABLE 7: CAUSES OF EPISTAXIS AFTER INTERVENTION

CAUSES OF FAILURE	NO.OF CASES	PERCENTAGE
RECURRENCE OF ADENOIDS	2	4
NASAL PICKING	6	12
URTI	4	8
IMPROPER PACKING	2	4
TOTAL	14	28

TABLE 8: SHOWING INTERVENTION DONE FOR RECURRANCE CASES

CAUSE OF RECURRANCE	NO OF PTS	INTERVENTION
ADENOIDITIS	2	REVISION
ADENOIDECTOMY	6	COUNSELLING
NASAL PICKING		
URTI	4	ANTIBIOTIC CONTROL
IMPROPER PACKING	2	REPACKING

idence was more in the age group of 5-8 years with almost 46% cases belonging to this category. The seasonal incidence was more during cold, dry, winter months (70%). The commonest etiological factor was idiopathic(26%) & trauma (26%), followed by the adenoiditis (12%), infections(10%) & foreign body (10%). DNS (6%), benign tumors (8%) constituted the other causes. 64% of patients had b/l nasal bleeding, 36% had u/l bleeding with 16% bleeds on right & 20% bleeds on left. The treatment options were divided into non-surgical and surgical modalities. 68% of the patients are treated by conservative measures like medical treatment (28%), cautery (4%), anterior nasal packing (18%), posterior nasal packing (8%) and foreign body removal (10%)32% of the cases require surgical line of management which includes septal surgery (6%), adenoidectomy (12%), fess (4%), excision of benign tumors(2%) and ligation of sphenopalatine artery (2%). There are 28%(14) of cases presenting with recurrences of which 4%(2) of cases required recurrent adenoidectomy, 12%(6) were educated to stop the habit of nasal picking,4%(2) pts were repacked & 8%(4) were put on antibiotic control.[11-15]

The present study shows 56% patients are males and 44% are females. The incidence in males is more as they are more exposed to trauma, and other injuries. Proportion of males and females in the present study(1.3:1) is comparable to the above mentioned studies and similar to that conducted by JUSELIUS(1.4:1) & VARSHNEY(1.4:1).The present study shows that most of the patients are in the age group of 5- 8yrs(46%) which is comparable to the studies conducted by Ponraj Kumar N et al 6-10yrs(48%). This may be due to the fact that children are more habituated to nasal picking foreign body nose and frequently get exposed to urti.

Etiology in comparison with other studies In the present study cause of epistaxis in (26%) of pts is trauma. Idiopathic in (26%) of cases comparable to that of Ponraj Kumar study (28%).Infections constituted (14%) comparable to that of Radhakrishna study (14%) & Varshney(19.3%).Tumors constituted (8%) of the pts comparable to that with Radhakrishna study. Foreign body constitutes (10%)

of the pts comparable to the study by ponraj Kumar (10.7%). Epistaxis as a result of infection due to chronic rhinosinusitis, forms 10% of the cases in present study. Other causes like adenoids constitute 12% of the patients with paediatric age group most targeted age group for adenoid infections. In the present study 68% of the patients are treated by conservative measures like medical treatment (28%), cautery (4%), anterior nasal packing (18%), posterior nasal packing (8%) and foreign body removal (10%). This is in accordance with Varshney et al. study where 70.5% of the patients were treated successfully by non-interventional means. Similarly in the study by Urvashi et al, almost 99% of cases were managed by conservative measures like cautery, anterior and posterior nasal packing. 32% of the cases require surgical line of management which includes septal surgery (6%), adenoidectomy (12%), fess (4%), excision of benign tumors (2%) and ligation of sphenopalatine artery (2%). [16-17]

4 | CONCLUSION

Epistaxis is a common clinical condition encountered by the otorhinolaryngologist. It is prevalent in paediatric age group with higher incidence in 5-8 years of age group. It is found to be more common in males than females. Bilateral epistaxis is common compared to unilateral epistaxis. Anterior epistaxis is more common than posterior bleeds. The common causes of epistaxis are idiopathic, trauma, infections, septal abnormalities, foreign bodies. Trauma and infection being more common in children. Majority of cases of epistaxis are manageable by conservative measures and only few require surgical intervention. Few cases with recurrence of epistaxis such as recurrent adenoiditis required recurrent adenoidectomy, with other cases required education of child and parents regarding stoppage of nasal picking and repacking and antibiotic control in other cases.

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