

Comparison of Causes of Infective and Non-Infective Epistaxis in the Kolhan Belt Population of Jharkhand

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How to cite this article: Sanjay Kumar, Rohit Kumar Jha et al Comparison of Causes of Infective and Non-Infective Epistaxis in the Kolhan Belt Population of Jharkhand. Volume 13 | Issue 4 | October-December 2022

Abstract

Background: Epistaxis is the commonest otorhinolaryngological emergency affecting 60 % of population in their life time. If un-treated may affect hemodynamic status.

Method: 92 Epistaxial patients of different age groups were treated conservatively after routine blood examination and serum electrolyte, Urea, S. Creatinine, Urine routine examination, Blood group, Coagulation profile, CT scan was done in selected patients to rule out neoplasm of the nose, PNS and nasopharynx. Moreover chest-x-ray, ECG was performed for fitness procedure required for general anaesthesia.

Results: In clinical manifestations of infective and non-infective epistaxis 32 (34.7%) were idiopathic, 19 (20.6%) were due to trauma, 14 (15.2%) rhinitis, 15 (16.3%) HTN/Atherosclerosis, 2 (2.17%) due to tumours, 2 (2.17%) Iatrogenic, 3 (3.26%) foreign body, 2 (2.17%) blood dyscrasia, 1 (1.08%) congenital heart disease, 2 (2.17%) during pregnancy, 30 (32.1%) were non-infective, 62 (67.3%) were infective epistaxial. Out of 92 patients 36 (39.1%) had non-infective bleeding sites and 56 (60.8%) had infective bleeding sites. Out of 6 (6.52%), 5 (5.43%) complications were observed in non-infective epistaxis.

Conclusion: Though epistaxis is idiopathic it is classified as local or systemic but it is difficult to classify. Hence 80-90% were idiopathic (non-infective) Majority of the epistaxis were managed with conservative (non-surgical) treatment such as nasal packing and local cauterization. It is safe and cost effective surgery will be the last resort to cure epistaxis.

Keywords: Infective, Idiopathic, Rhinoscopy, nasal endoscopy, Abgel, Ribbon/gauze

Introduction

Epistaxis or nasal bleeding is recognised as one of the most common otorhinolaryngological emergencies globally and presents a challenge in tertiary care hospitals where facilities for caring these patients are limited. Epistaxis is a problem frequently encountered in general practice and may present as an emergency as a chronic problem of recurrent bleeds or may be a symptom of a generalised disorder. It affects the hemodynamic status as well as psychological aspects of the patients and family members causing anxiety.

Epistaxis is estimated to occur in 60% worldwide during their life time and approximately 6% of those with nose bleeds seek medical treatment ⁽¹⁾. The prevalence increases in children less than 10 years of age and then rises again after the age of 40 years ⁽²⁾. Generally males are affected more than females until the age of 50 but after 50 no difference between sexes are reported ⁽³⁾.

The aetiology of epistaxis can be broadly divided into local or systemic (infective or non-infective), although even this distinction is difficult to make and

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the term "idiopathic epistaxis" is ultimately used in about 80 to 90% of the cases⁽⁴⁾. Hence attempt is made to evaluate the causes of infective and non-infective. Epistaxis so that present study can be a guide line to ENT surgeon who deals with Epistaxis in different age groups and both sexes.

Material and Method

90 patients aged between 10 to 58 years regularly visiting to ENT department of MGM Medical College hospital Jamshedpur-831018 were studied.

Inclusive Criteria: All the patients presented the Epistaxis were selected for study.

Exclusion Criteria: Patients undergone recent sinusoidal surgery, any bleeding diathesis or patients with earlier intervention on bleeding site were excluded from study.

Method: Every patient underwent routine investigation such as CBC, Hb% level, platelet count, RBS, Serum electrolyte, urea, creatinine, Urine routine, examination and blood grouping.

Coagulation profile such as prothrombin time activated plasma thromboplastin time; bleeding and clotting time was ruled out. CT scan was done in selected cases to rule out neoplasm of the nose and para-nasal sinuses and the naso-pharynx. Moreover chest-x-ray, ECG, and stereological test was performed for the fitness procedure require general anaesthesia, that is convention posterior nasal packing and surgical methods to control epistaxis.

Intravenous line was established in all patients with side bear canula. Initially the patients were evaluated with anterior rhinoscopy to identify the site of bleeding. Patients who were brought to emergency room with complaint of recurrent episodes of excessive bleeding, underwent nasal endoscopic examination to search the site of bleeding which might have located more posteriorly.

Treatment of patients with epistaxis included conservative or non-surgical treatment and surgical or interventional treatment. Non-surgical treatment included application of topical vasoconstriction such as oxymetazoline and xylometazoline nasal drop, chemical and electric cauterization of the bleeder and anterior and posterior nasal packing, surgical methods were endoscopic cauterization of the bleeder and SPA (sphenopalatine Artery) ligation. All the patients were initially treated conservatively and surgical

treatment was considered only when conservative method failed to control the epistaxis of the patients with bleeding disorders packed with absorbable gelatine sponge (Abgel). The rest of the patients received conventional anterior nasal packing with ribbon gauze posterior nasal packing was considered in the case of re-bleed in a patient also had anterior nasal pack in site surgical methods were last resorts to control bleeding in patients who had recurrent bleed or whose bleeding could not be controlled with those non-intentional methods.

Duration of study was October-2021 to April-2022.

Statistical analysis: Various studies of infective and non-infective Epistaxis were done and classified with percentage. The statistical analysis was carried out in SPSS software. The ratio of the male and female was 2:1.

Observation and Results

Table-1: Study of causes of infective and Non-infective epistaxis - 32 (34.7%) were Idiopathic (Non-infective), 19 (20.6%) trauma, 14 (15.2%) Rhinitis (Inflammation), 15 (16.3%) HTN / atherosclerosis, 2 (2.17%) Iatrogenic, 3 (3.26%) foreign body, 2 (2.7%) Blood dyscrasia, Glanzmanns thromboasthetic Haemophilia, 1 (1.08%) congenital heart disease, 2 (2.17%) pregnancy.

Table-2: Comparative study of modalities in Epistaxis, out of 11 (11.9%), 5 (5.43%) were infective, 6 (6.52%) were kept under observation, out of 37 (40.2%), 24 (26.08%) of infective, 13 (14%) were non-infective treated with light packing with gauzy antiseptic antibiotic local haemostatic. Out of 15 (16.3%) patients 7 (7.60%) infective, 8 (8.69%) non-infective treated with local trichloro acetic acid, Out of 13 (14.1%) 10 (10.8%) infective, 3 (3.26%) non-infective treated with anterior nasal packing, 4 (4.34%) of infective were treated with posterior nasal packing, 6 (6.25%) had endoscopic cutter. Out of a 11 (11.9%) 6 (6.25%) had infective and 5 (5.43%) non-infective combined procedure, 30 (32.1%) patients were non-infective, 62 (67.3%) were infected epistaxis patients.

Table-3: Comparison of bleeding sites in both infective and non-infective epistaxis out of 38 (41.3%) 24 (26.1%) infective, 14 (15.2%) had anterior septum, out of 14 (15.2%) 9 (9.7%) infective, 5 (5.4%) non-infective had posterior septal bleeding site. Out of 12 (13%), 7 (7.6%) infective, 5 (5.4%) non-infective had lateral wall (inferior turbinate) was bleeding site.

Out of 24 (26%), 13 (13.6%) infective, 11 (11.9%) non-infective had anterior floor was bleeding site. Out of 4 (4.3%), 1 (1.08%) infective, 3 (3.2%) non-infective had posterior floor was bleeding site, Out of 92, 36 (39.1%) non-infective, 56 (60.8%) infective patients bleeding.

Table-4: Comparison of frequency of complications in both infective and non-infective patient had hypovolemic shock, 3 (3.26%) non-infective had recurrent epistaxis, 1 (1.08%) non-infective had toxic shock, 1 (1.08%) non-infective had facial oedema. Out of 6 (6.25%) 5 (5.43%) complications were observed in non-infective patients.

Discussion

In the present comparative study of infective and non-infective (idiopathic) Epistaxis. Clinical manifestations were 32 (34.7%) were Idiopathic (non-infective), 19 (20.6%) were due to trauma, 14 (15.2%) were due to rhinitis, 15 (16.3%) were due to Hyper tension / atherosclerosis, 2 (2.17%) were due to tumours, 2 (2.17%) Iatrogenic, 3 (3.26%) were due to foreign body, 2 (2.17%) were due to blood dyscrasia haemophilia, 1 (1.08%) due to congenital heart anomalies, 2 (2.17%) during pregnancy (Table-1). 30 (32.1%) Epistaxis patients were non-infective (Idiopathic), 62 (67.3%) were due to infection (Table-2). Out of 92 (100%), 36 (39.1%) epistaxis had non-infective bleeding and 56 (60.8%) had infective bleeding (Table-3). Out of six (6) frequency of complication patients 5 (5.41%) were non-infective (Idiopathic) (Table-4). These findings are more or less in agreement with previous studies (5)(6)(7).

Prevalence of epistaxis among the children aged between 3 and 6 years of age was observed. Few children were due to traumatic and few children using anticoagulants, some of the adults or children had Diabetes mellitus Hypertension (8). Trauma being the major cause of epistaxis varied from minor injury such as digital trauma to varying degrees of nasal injury from road traffic injury, HTN (hypertension) is the third commonest cause of epistaxis due to poor blood pressure control. It is also reported that, epistaxis is the one of the geriatric problem in older than 40 (forty) years of age (9). Hence it is confirmed that, In old age there is lesser degree of immunity leads to cardiovascular diseases like HTN / Atherosclerosis, type-II DM could be the major cause of epistaxis in old age above 40 years. Hence epistaxis above 40 years can be classified or considered as

infective epistaxis because in old age minor traumatic injury to nose result into severe degree of epistaxis. This epistaxis may be the diagnostic value of cerebrovascular cardiovascular derangements. It is noted that epistaxis present in HTN patients is not controlled by anti-HTN drugs hence there was recurrence of epistaxis in HTN patients (10) or the HTN patients with epistaxis might have essential hypertension. Under such scenario it is difficult to classify the infective or non-infective (Idiopathic) epistaxis.

Managements epistaxis is well summarised by taking preventive measures including face mask with shield gowns, hair coverage and double-gloving.

The use of antimicrobial prophylaxis in the presence of nasal packing for the treatment epistaxis remains controversial as it may lead to 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 some time toxic shock syndrome (11). The mortality rates associated with epistaxis were severe head injuries cardiac arrest associated tension pneumothorax and nasopharyngeal cancer.

Summary and Conclusion

Present comparison of causes of between infective and non-infective epistaxis, 32 (34%) of Idiopathic (non-infective) epistaxis and remaining 60 (65.2%) appears to be infective though the aetiology was not clearly understood. Majority of epistaxis is managed with conservative methods and surgery remains to be the last resort to treat epistaxis. The Present studies demands further inventional study of embryological genetic, nutritional, patho-physiological studies because exact the factors and mechanism of epistaxis is still unclear.

Limitation of study - Due to tertiary location of present institution, small number of patients and lack of latest technologies we have limited results.

This research paper was approved by Ethical committee of MGM Medical College Jamshedpur-831018.

No Conflict of interest

No Funding

Table 1: Clinical manifestation of Infective and Non-infective of Epistaxis

Causes of Epistaxis	No. of Patients (92)	Percentage (%)
Idiopathic (Non-infective)	32	34.7
Trauma	19	20.6
Rhinitis (Inflmmative)	14	15.2
HTN/Atherosclerosis	15	16.3
Tumours	2	2.17
Iatrogenic	2	2.17
Foreign Body	3	3.26
Blood Dyscrasis (Dlanzmanns) Thromophilia Haemophilia	2	2.17
Congenital heart disease	1	1.08
Pregnancy	2	2.17

Table 2: Comparative study of Modalities in Epistaxis

Treatment Modalities	Infective		Non Infective		Total
	No. of patients	%	No. of patients	%	No. of patients with percentage
Observation	5	5.43	6	6.52	11 (11.9%)
Light packing with gauzy antiseptic antibiotic / local haemostatic	24	26.08	13	14.1	37 (40.2%)
Local trichlora acetic acid	7	7.60	8	8.69	15 (16.3%)
Anterior Nasal packing	10	10.8	3	3.26	13 (14.1%)
Posterior Nasal packing	4	4.34	--	--	4 (4.34%)
Endoscopic cuttery	6	6.52	--	--	6 (6.52%)
Combined procedure	6	6.52	5	5.43	11 (11.9%)
Surgical intervention	0	0	0	0	--

30 (32.1%) Epistaxis patients were non-infective, 62 (67.3%) patients were infected Epistaxis

Table 3: Comparison of bleeding sites in both infective and non-infective Epistaxis

Site of bleeding	Infective		Non-Infective		Total number of patients with percentage
Septum					
A. Anterior	24	26.1	14	15.2	38 (41.3%)
B. Posterior	9	9.7	5	5.4	14 (15.2%)
Lateral wall (Inferior turbinate / Middle turbinate / Middle Meatus	7	7.6	5	5.4	12 (13%)
Floor					
A. Anterior	13	13.6	11	11.9	24 (26%)
B. Posterior	1	1.08	3	3.2	4 (4.3%)

Out of 92 patients 36 (39.1%) had non-infective and 56 (60.8%) had infective bleeding

Table 4: Comparison of frequency of complications in both infective and non-infective

Epistaxis Complications	Infective Epistaxis	Non-infective Epistaxis	Total number and percentage (%) 6 (6.52%)
Hypovolemic shock	1	--	1 (1.08%)
Recurrent Epistaxis	--	3	3 (3.26%)
Toxic Shock	--	1	1 (1.08%)
Facial oedema	-	1	1 (1.08%)

Out of 6 (6.52%), 5 (5.43%) complications were observed in non-infective

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