Original Research Article

The Clinical Study and Management of Epistaxis

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Abstract

Epistaxis is a very common condition that can present as a simple self-limiting to a life threatening condition. The incidence of epistaxis in general population is difficult to ascertain , at one time or the other most people experience it. It occurs more commonly in males than females. Rare in infants, children suffer much more frequently than adults. It can be unilateral or bilateral with a number of factors playing a role like age, sex, occupation, anatomical, pathological and climatic conditions etc., Epistaxis is one of the most common emergency that oto-rhinolaryngologists are asked to treat. Causes of epistaxis can be simple with self limiting to more sinister malignancy which needs a radical approach with many other condition falling in between.**Objectives**:1.To find out different causes of epistaxis.2.management of epistaxis regards to its etiology.**Methodology:** The study was conducted in the Department of ENT, Nimra Institute of Medical Sciences & Hospital during the period from January 2019 to January 2020. The prospective study included 50 patients attending the department of ENT and also patients referred from other tertiary care centers form the subjects for our study. A written informed consent taken from all patients included in the study. A detailed history taking, thorough clinical examination done for these patients. And depending upon the need of the patient, they were treated medically, anterior /posterior nasal packing and surgically, and followed for a period of 6 month. The data collected was tabulated and subjected to statistical analysis. **Results:** According to our study Epistaxis is more common in males of age group(20-30 years),with acute onset being more common and bilateral nose involvement being more common followed by right side, with scanty amount of epistaxis was more common (54%), followed by profuse (20%), maximum number of patient having epistaxis only for one day and 2-6% of patients had epistaxis for 5 days and above, frequency of epistaxis with more than 5 episode per day are most common.and nasal block was the most common associated symptom in our group. With hypertension(16%) being the most common associated disease and 76% not associated with any other disease, 18% patient had history of trauma in that 16% had nasal bone fracture, and 2% associated with nasal bone with maxillary bone fracture. Anterior epistaxis being the most common than posterior epistaxis , with little's area is the most common bleeding site. 46% of the patients treated with combined modality included medical, surgical and anterior nasal packing, 26% treated with medical and anterior nasal packing , medical alone 24%, anterior and posterior nasal packing including medical treatment were 4%.and 97.9% patient had no recurrence on follow up. **Conclusion:** The study shows Epistaxis being more common in young adults males, trauma being the common cause followed by hypertension and idiopathic, anterior packing being most effective mode of management with minimum recurrence.

Keywords: E. coli, Carbapenenems, CLSI, Colistin, Nosocomial.

Introduction

Epistaxis and its management have found place in medical literature dating back to very early time. Patient's own blood, hemlock, moss and many other herbal remedies were used by the primitive people to control Epistaxis. The origin of the word can be traced to the times of Hippocrates[1].The incidence of Epistaxis is more in young adults, males.. Most cases present to the ENT Department but a few present to the other Departments also. Many of these patients required admission for investigations and management of Epistaxis. Duration of stay in the hospital is usually within a week. The bleeding duration is usually less but some have duration of months to years too[1-3]. The mode of onset is usually acute and frequency of bleeding is more than 5 times per day usually. No difference between unilaterality and bilaterality is noticed. Among cases with unilateral bleeding right sided bleeding was more than left sided. The associated symptoms are nasal obstruction, nasal discharge, anosmia, headache, fever,, falling of crusts,. In some patients there are no associated symptoms[4].Most of the study cases didn't have any associated systemic disorders except for a few percentages having hypertension and bleeding disorders. Thrombocytopenia as a cause of epistaxis could be accounted only in few cases as most of the study cases have normal platelet count. As only few cases have profuse bleeding, the percentage of cases with severe pallor was also few.External nose and related structures examination reveals no significant findings often, except with swelling, inflammation, discharge, lacerations and fractures to follow in few cases. Anterior Rhinoscopic findings include atrophic changes, atrophic changes with maggot, congestion, discharge, mass, DNS, clots ; Some time no cause is found.Posterior Rhinoscopy is usually non-informative but may show mass, or atrophic changes of the turbinates or discharge apart from bleeding.The bleeding is usually anterior and could be originating diffusely or from the septum or posterior end of septum or the mass or from unidentifiable parts. The commoner causes include idiopathic, URI, trauma, foreign body, Atrophic Rhinitis, Benign tumours, Essential Hypertension, Bleeding diathesis, IUD, Malignancy[5].The Management is usually medical, but may be combined or surgical management alone. The prognosis is good in

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majority with no recurrence, but a few may have repeated severe attacks especially in those with bleeding diathesis.

Materials and Methods

The present study entitled "The clinical study and management of epistaxis"was undertaken in the Department of ENT, Nimra institute of Medical Sciences, Vijayawada. The study period was from Jan 2019 to January 2020. Patients presenting with bleeding from nose were the subjects of this study. The patients included, those attending Department of ENT,Medicine, Surgery and other allied Departments, Nimra Institute of Medical Sciences. A total of 50 cases were studied during this period and they constituted the subjects in this study.These 50 patients included patients of all age, sex, occupation and place. Both out patients and In-patients were included in this study. Bleeding per nose included both anterior bleeding and posterior bleeding.These patients were evaluated thoroughly and a prompt, effort as per the proforma was made to throw light on the pattern of clinical aspects, causes and management of bleeding from nose.A detailed history was obtained from these patients. Past and family history were also evaluated for further information. A meticulous thorough General Physical examination was conducted and the findings were noted and were followed by systemic examination of all the system irrespective of the cases, age, sex.

Complete Ear, Nose and Throat examination were carried out on these patients to be followed by examination of the neck.This approach was followed by further management of the patients depending upon the general condition and presence of active bleeding. Whenever General condition permitted a thorough investigation was performed. If other major problems like head injuries chest injuries were present, patients were managed on priority basis. In patients with active bleeding, first importance was given to control of active bleeding, to be followed by investigations, that were thought to be necessary, depending upon the clinical assessment.The investigations that were done, are listed in the proforma produced in the pages to come.After this, a definitive diagnosis was arrived at and further management was thus planned depending upon the requirement. The patients were treated either medically or surgically or both. Medical line of management included conservative management, Anterior Nasal packing and posterior Nasal packing. Surgical Management included surgical procedures like excisional biopsies. Antral washes, septoplasty, and cauterization. The methods adopted were according to the need and included chemical cauterization, anterior nasal packing, and posterior nasal packing.After the management of the bleeding and its causes, the patients were followed up for six months or till the bleeding recurred whichever was later.

Observation and Discussion

Table 1: Age-sex wise distribution of study subjects

Age group	Sex		Total
	Male	Female	
0 - 10 years	06 (16.2%)	03(23.1%)	09 (18%)
11 – 20 years	08 (21.6%)	04 (30.8%)	12 (24%)
21 – 30 years	11(29.7%)	02 (15.4%)	13 (26%)
31 - 40 years	03 (08.1%)	01 (07.7%)	04 (08%)
>40 years	09 (24.3%)	03 (23.1%)	12 (24%)
Total	37(100%)	13(100%)	50(100%)

In our study shows males (37) are commonly affected than females (13).Commonly affected age groups are 21- 30 yrs (26%).This study consists of 50 cases of epistaxis, due to various aetiological factors studied between January 2018 to June 2019 and it includes patients who attended other departments apart from department of ENT, Nimra Institute of Medical Sciences & hospital.

Age and Sex

Table no:1 shows the distribution of study subjects based on age and sex. In our study, as shown in table no:1 ,74% were males and 26% were females and among males younger age group ie,21-30 years were affected more(29.7%) while among females adolescent age group ie,11-20 year is affected more. A study done by Japhet M Gilyoma (2011)[1]in 104 patients with epistaxis, males were affected twice more than the females (2.7:1).

Table 2: Distribution of study subjects based on side of nose involved in epistaxis

Side of nose	Frequency	Percentage
Right	18	36%
Left	07	14%
Bilateral	25	50%
Total	50	100%

In our study shows bilateral side involvement more common(50%) followed by right side 36%, left side 14%.

Side of Bleeding

Among the 50 cases, see Table no:2,50% have bilateral bleeding,36% have bleeding from right side while left side bleeding is seen in 14% of the cases. As most of the people are right handed, nose picking and self inflicted trauma to nose are common in right side of the nose. As there was no significant difference between unilateral and bilateral bleeding, we conclude that unilateral and bilateral bled equally in frequency and no further references are made in this regard.

Table 3: Distribution of study subjects based on mode of onset of epistaxis

Mode of onset	Frequency	Percentage
Acute	37	74%
Chronic	13	26%
Total	50	100%

Acute onset was more common in our study, acute onset 74% and chronic 26%.

Mode of Onset of Bleeding

Table no:3 ,shows the mode of onset of bleeding in the 50 patients we studied. In our study, 74% have acute onset of bleeding while 26% have chronic onset. Petruson had almost similar incidence of 65% in his study, no specific factors could be found to be the triggering factors in acute onset, of course, excluding trauma. In children and young adults most of the cases were of acute onset while in elderly most were of chronic onset. In children upper respiratory tract infections were responsible for most cases while in young adults and elderly trauma, URI, essential hypertension, thrombocytopenia, Atrophic Rhinitis and malignancies accounted for most cases. Considering the mode of onset, it was found out that in both sexes acute onset is more common than chronic onset[6].

Table 4:Distribution of study subjects based on duration of epistaxis

Duration	Frequency	Percentage
1 day	20	40%
2 days	14	28%
3 days	12	24%
4 days	01	02%
5 days and above	03	06%
Total	50	100%

In this study 40% of the patients having epistaxis only for one day, least is only for 4 days duration, 6% of the patients had nasal bleeding for 5 days and above.

Duration of Epistaxis

In this study, as shown in table no:4 ,duration of bleeding ranged from 1 day to 4years(on and off).Of the 50 cases 94% had a duration of less than 5 days and 6% had duration of more than 5 days.Majority of the cases (40%) had 1 day duration only probably due to the fact that at the onset of bleeding itself patients might have sought medical treatment.

Table 5: Distribution of study subjects based on amount of epistaxis

Amount	Frequency	Percentage
Scanty	27	54%
Moderate	13	26%
Profuse	10	20%
Total	50	100%

In our study, scanty amount of epistaxis was more common 54%, moderate 26% followed by profuse 20%.

Amount of Bleeding

Table No: 5 shows the amount of bleeding in the 50 cases 27 (54%) patients showed scanty bleeding and 26% had moderate bleeding only while 20% had profuse bleeding. Any bleeding which was measurable in terms of drops was termed mild or scanty bleeding. Any bleeding which was sufficient enough to wet a hand kerchief was termed as profuse bleeding. Any bleeding in between was termed as moderate. This point to the severity of the disease. Most of the children were scanty bleeders, young adults and middle aged persons contributed the most of profuse bleeders, probably because of increase in exposure to chances of trauma[7].

Table 6: Distribution of study subjects based on frequency of epistaxis

Frequency	Frequency	Percentage
2 – 5 episodes/ day	18	36%
>5 episodes/ day	32	64%
Total	50	100%

In frequency of epistaxis, more than 5 episodes are most common, 64% patient fall in more than 5 episodes.

Frequency of Epistaxis

Table no:6 shows the distribution of study subjects based on the frequency of epistaxis 64% of the cases we studied had more than 5 episodes of bleeding per day while 36% had 2 to 5 episodes of bleeding per day. This is in accordance with Petruson's report of 39% having epistaxis for the first time in life, in his study. This may well indicate the nature of the disease. In children most of the disease were probably benign, self-limiting like URI ,foreign body in the nose while in elderly they were probably due to progressive ,non self limiting diseases like atrophic rhinitis, malignancy or uncontrolled hypertension.

Table 7: Distribution of Study Subjects Based on Associated Symptoms

Associated symptoms	Frequency	Percentage
Nasal block	37	74%
Fever	07	14%
Blood vomiting	06	12%
Nasal discharge	15	30%
Anosmia	14	28%
Foreign body	04	08%

Nasal block was most common associated symptoms in our group, 74% of patient presented with nasal block associated with epistaxis. Next most common associated symptoms nasal discharge (30%), followed by anosmia(28%), fever(14%), blood vomiting(12%) and foreign body(8%).

Assosciated Symptoms

Table no:7 shows the distribution of study subjects based on assosciated symptoms Nasal block was the most common assosciated symptom. It was assosciated with epistaxis in 74% of the cases. Nasal discharge formed the next common assosciatedsymptomie, about 30%.14% had assosciated fever while 28% had assosciated anosmia. 12% had vomiting of blood along with epistaxis.

Table 8: Distribution of Study Subject Based on Causes of Epistaxis

Causes	Frequency	Percentage
Idiopathic	16	32%
Secondary	34	68%
Total	50	100%

Secondary (68%) causes are more common than primary (32%) causes.

Diagnosis

As shown in table 8, secondary causes predominates (68%) in the aetiology of epistaxis. Only 32% of the cases were due to primary /idiopathic variety. Of the 68% which were due to secondary causes, as shown in table 9, hypertension formed 16%,foreign body constituted an 8%,nose picking and inverted papilloma constituted 6% each, septal haemangioma and DNS with spur formed 4% each. Febrile thrombocytopenia constituted 4% while trauma became the single most common cause (26%).This explains why majority of the cases in our study had acute onset. Other minor aetiologies together constituted another 26%.

Table 9: Distribution of Study Subjects Based On Secondary Causes of Epistaxis

Diagnosis	Frequency	Percentage
Trauma	13	38.4%
Hypertension	08	23.7%
Foreign body	04	11.7%
Inverted papilloma	03	08.8%
Septal haemangioma	02	05.8%
DNS with spur	02	05.8%
Febrile thrombocytopenia	02	05.8%
Total	34	100%

In our study 34 patient had secondary epistaxis, causes are trauma 26%, hypertension 16%, foreign body 8%, inverted papilloma 6%, septalhaemangioma 4%, DNS with septal spur 4 %, febrile thrombocytopenia 4%.

Table 10: Distribution of Study Subjects Based on Associated Disease

Associated disease	Frequency	Percentage
Hypertension	08	16%
Diabetes mellitus	03	06%
Bleeding disorders	02	04%
Tumor	01	02%
No associated disease	38	76%

In our study epistaxis associated with other disease, hypertension are commonly associated with epistaxis 16%. 76% are not associated with any other diseases.

Assosciated Diseases

Table no 10: shows the distribution of study subjects based on associated disease. In our study majority ie, 76% of the cases were not assosciated with any other disease. Only 4% of the cases were assosciated with bleeding disorders.2% of the cases have assosciatedtumours like inverted papilloma, nasopharyngeal carcinoma. Epistaxis is frequently accompanied by high blood pressure that hypertension is common cause of nasal bleeding (Reading);that arterial hypertension often give rise to epistaxis and that the hypertension is the commonest systemic cause of epistaxis. In our study only 16% were associated with hypertension but it formed the commonest systemic cause of hypertension.

Table 11: Distribution of Study Subjects Based on General Physical Examination

GPE	Frequency	Percentage
Pallor	16	32%
Increased BP	12	24%
Normal	26	52%

In our study commonly observed general physical examination was pallor (32%) followed by increased BP(24%).

General Physical Examination

Table no: 11 shows the study subjects based on general physical examination about half (52%) of the study group had no other associated general physical findings. 32% had associated pallor which indicates that they had profuse bleeding. About 24% had high blood pressure recording, which indicates the proportion of hypertensive cases involved.

Table 12: Distribution of Study Subjects Based On Findings of External Nose Examination

External nose examination	Frequency	Percentage
Nasal bone fracture	08	16%
Nasal bone fracture with maxilla fracture	01	02%
Normal	41	82%
Total	50	100%

In our study 13 patient had history of trauma, in that 8 patient had nasal bone fracture and one patient had nasal bone fracture with maxilla fracture.

Examination of Nose

Table no: 12 shows the finding of examination of external nose and related structures in our series among the 50 patients 82% showed no findings on external examination .16% showed clinical evidence of nasal bone fracture.2% of the cases showed nasal bone fracture with assosciated maxillary bone fracture. Hence while most external nose examination revealed nothing significant, it was useful in showing evidence of infections and trauma as is evident from above.

Table 13: Distribution of Study Subjects Based on Anterior Rhinoscopic Finding

Anterior rhinoscopy	Frequency	Percentage
Atrophic changes	01	02%
Atrophic changes with maggots	02	04%
Nasal discharge(other than blood)	17	34%
Mass	15	30%
Clots	47	94%
DNS	11	22%

Anterior rhinoscopic finding in our study, clots most common finding 94%, followed by nasal discharge (34%), nasal mass (30%), deviated nasal septum (22%), atrophic changes with maggots (4%) and atrophic changes (2%).

Anterior Rhinoscopic Finding

Table no:13 shows the distribution of normal study subjects based on anterior rhinoscopic finding Blood clots were found in anterior rhinoscopy in 94% of the cases which indicate that profuse bleeding was there. About 34% of the cases had nasal discharge on examination. Anterior rhinoscopy was more informative in children and most findings pointed towards evidence of infections. In 30% cases anterior rhinoscopy showed presence of mass in nasal cavity.22% cases had deviated nasal septum and about 4% had atrophic changes with maggots in the nasal cavity[8].

Table 14: Distribution of Study Subjects Based On Bleeding Area

Bleeding	Frequency	Percentage
Anterior	45	90%
Posterior	04	08%
Both	01	02%
Total	50	100%

Anterior epistaxis (90%) being most common than posterior epistaxis (8%).

Anterior / Posterior Bleeding

Table no:14 Our study also showed a proportion of 90% anterior nasal bleed, 8% had posterior bleeding while only 2% had bleeding from both sites. A study done by Japhet M gilyoma(2011)[1] have noted that in majority of the patients(88.7%) ,it was anterior nasal bleeding. Among the young adults and middle aged patients, anterior nasal bleeding is common and it points to the aetiology of diseases like trauma and tumours. Most of the posterior bleeding were in the elderly age group .This is in accordance with previous series which reported that 60% of the patients with post nasal bleeding were more than 40 years of ag[9].

Table 15: Distribution of Study Subjects Based On Bleeding Site

Bleeding site	Frequency	Percentage
Septum	50	100%
Lateral wall	15	30%
Posterior end of septum	11	22%

In our study all patient presented bleeding from septum (little's area), lateral wall was the next common site of bleeding (30%) followed by posterior end of septum (22%).

Site of Bleeding

Table no:15 shows the site of bleeding in patients ,who were bleeding at the time of examination. All the cases which we studied had bleeding from the anterior end of nasal septum. Of these, 30% cases had associated bleeding from lateral wall and another 22% had bleeding from the posterior end of nasal septum.

Table 16: Distribution of Study Subjects Based On Hb%

Hb%	Frequency	Percentage
>12 gms	16	32%
10 – 12 gms	24	48%
7 – 10 gms	08	16%
<7 gms	02	04%
Total	50	100%

In this study only 4% of the patients having haemoglobin level less than 7gms, and 7 to 10 gms in 16% of patients, and in 48% of patients haemoglobin level is 10 to 12gms.

Haemoglobin Percentage

Table no:16 shows distribution of study subjects based on haemoglobin percentage. About 48% had mild anaemia (10-12gm %) while 32% had aHb% of more than 12gm%.16% had Hb% of 7-10gms and only 4% had severe anaemia of Hb% less than 7gm%.This may be due to less incidence of profuse bleeding cases in our study group.

Table 17: Distribution of study subjects based on platelet count

Platelet count	Frequency	Percentage
2.5 – 5 lakhs	34	68%
1 – 2.5 lakhs	12	24%
50,000 – 1 lakh	02	04%
<50,000	02	04%
Total	50	100%

In 4% of the patients the platelet count is less than 50,000, and from 50,000 to 1 lakh in 4% of patients, 1lakh to 2.5 lakhs in 24% and in 68% of patients the platelet count is 2.5 to 5 lakhs.

Platelet Count

Table no: 17 shows distribution based on the platelet count as thrombocytopenia may manifest as epistaxis, the distribution of cases based on platelet count was studied. In our study group 4% of cases with severe thrombocytopenia(less than 50,000) were reported. Another 4% had a platelet count of 50,000-1lakh.24% had platelet count in the range of 1 to 2.5 lakhs and 68% had in the range of 2.5-5 lakhs.

Table 18: Distribution of Study Subjects Based on Investigations

Investigations	Done	Not done
Radiology	19 (38%)	31 (62%)
Biopsy	07 (14%)	43 (86%)
Diagnostic nasal endoscopy	23 (46%)	27 (54%)

In our study diagnostic nasal endoscopy done in 54% of patients and X-ray done only in 62% , and biopsy taken and sent for histopathological examination in 86% of patients

Investigations

As shown in table no:18,in our study,38% underwent radiological investigations like X-ray, CT scan, while 23% underwent diagnostic nasal endoscopic examination and 14% underwent biopsy and histopathological examination.

Table 19: Distribution of Study Subjects Based on Management

Management	Frequency	Percentage
Medical alone	12	24%
Medical + anterior packing	13	26%
Anterior & Posterior packing + medical	02	04%
Medical +surgical + anterior packing	23	46%
Total	50	100%

46% patient fall in combined modality of treatment include medical/surgical/anterior nasal packing, followed by medical and anterior packing (26%), medical alone 24%, anterior and posterior packing including medical 4%.

Management

Table no:19 shows the modality of management.46% underwent a combined modality of treatment involving medical, surgical and anterior nasal packing.24% cases were able to be managed on medical lines alone while 26% required anterior nasal packing along with medical management and 4% required posterior and anterior nasal packing with medical treatment. Medical line of management included conservative management of trauma, URI, atrophic rhinitis, bleeding diathesis, hypertension. Bleeding diathesis management included fresh blood transfusion. Surgical management included excisional biopsies, Young's closure in Atrophic Rhinitis. Tumours like Juvenile angiofibroma were excised[10].Following anterior nasal packing no major complications or complaints but for mild headache, fullness of ears, were noticed in the patients. So we concluded that the dreaded, feared complications won't really occur in patients who are actually under continuous medical supervision and that anterior nasal packing still continues to be effective management tool.

Postnasal packing was required in few cases for 48hours duration for control of posterior bleeding. No major complications were observed.

Table 20: Distribution of Study Subjects Based on Follow Up

Investigations	Frequency	Percentage
Recurrence	01	02.1%
No recurrence	48	97.9%
Total	49	100%

In our study 97.90 patient had no recurrence on follow up. Only one patient had recurrence.(Glanzman's thrombosthenia)

Follow Up

On follow up, as shown in table no: 20, 2% cases showed recurrence of epistaxis and it was associated with bleeding diathesis. As shown in table no: 21, the case which had recurrence of epistaxis was managed medically along with anterior nasal packing.98% of the cases studied showed no recurrence. These cases were managed as follows.24% cases were managed in medical lines alone. Another 24% had anterior nasal packing along with medical treatment.38.7% had both medical and surgical treatment.4% had anterior and posterior nasal packing along with medical treatment and 8% had medical, surgical treatment and anterior nasal packing.

Table 22: Relation Between Management and Recurrence In Follow Up

Management	Follow up		Total
	Recurrence	Non recurrence	
Medical alone	00	12(25.0%)	12(24.1%)
Medical + anterior packing	01(100%)	11(22.9%)	12(24.1%)
Medical + surgical	00	19(39.5%)	19(38.7%)
Anterior & Posterior packing + medical	00	02(04.1%)	02(04.4%)
Medical +surgical + anterior packing	00	04(08.3%)	04(08.1%)
Total	01(100%)	48(100%)	49(100%)

In our study combined medical and surgical management, recurrence rate is less compared to other combined modality of treatment.

Conclusion

On anterior rhinoscopy, significant changes were atrophic changes, congestion of mucous membrane and mass in the nasal cavities. In children, the commoner findings were congestion of mucous membrane and discharge. In young adults, atrophic changes, mass, congestion were the commoner findings. In Middle aged patients no pathological findings (other than bleeding) were observed in large groups of people to be followed by, mass, DNS.On post nasal examination, majority failed to show any findings, to be followed by presence of mass in the posterior choanae. In adolescents majority had no findings. This was true in other three groups too.Majority of our patients had anterior bleeding. This was applicable to all the groups. Septum came out as the most common site especially anterior part of septum.Few had diffuse or non specific site of bleeding. In significant number of patients bleeding site was unidentifiable.Majority of the cases were due to secondary causes. Of these traumas is the single most common cause of etiology, followed by foreign body, nose picking, atrophic rhinitis, benign tumours, essential hypertension, bleeding diathesis, malignancy & other diseases. In children idiopathic URI, nose picking, foreign body are the common causes.The management was mainly combined modality including medical, surgical and anterior nasal packing followed by medical alone. Anterior Nasal packing provided as effective means of controlling active bleeding, under supervision. Few cases required posterior nasal packing too. No severe complications were reported following anterior packing. On follow up, only few cases, especially those with bleeding diathesis had reported recurrence.

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