

Research Article

**Clinical Audit of Patients with Epistaxis Etiological Factors
and Treatment Outcome**

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ABSTRACT

BACKGROUND. Epistaxis (nasal bleeding) is the most common emergency affecting up to 60% of the population in their lifetime, with 6% requiring medical attention. This study was conducted to describe the etiological factors and treatment outcome of epistaxis at Quaid e Azam Medical College & hospital Bahawalpur. **METHODS:** This was a prospective descriptive study of the cases of epistaxis managed at Quaid e Azam Medical College & hospital Bahawalpur from 1st January 2017 to 31st December 2017. All patients of acute epistaxis due to any reason were included. The data for the following variables was collected; age, sex, cause, type of epistaxis and success rate of treatment modalities. **RESULTS:** A total of 100 patients with epistaxis were studied. Males were affected more than the females (2:1). Their mean age was 22 ± 8.7 years (range 4 to 78 years). The commonest cause of epistaxis was trauma (42%) followed by hypertension (30%) nasal foreign bodies (15%), sinusitis in (6%) deranged bleeding profile seen (5%) cases and (2%) cases needed surgical intervention. Anterior nasal packing was done in majority of the patients (68%). Conservative management was the main stay of treatment in (98%) of cases and local cauterization (55%) and anterior nasal packing (28%) were most commonly done. Surgery was mainly done in tumor resection in (2%) of cases. The overall success in treatment was (92%). **CONCLUSION:** Epistaxis is the common ENT emergency. Trauma resulting from road traffic accident (RTA) mostly by motor bike remains the most common etiological factor for epistaxis. Most cases can be successfully managed with conservative treatment alone and surgical intervention reserve for those cases not responding to medical treatment.

Keywords: Epistaxis, Trauma, Anterior nasal bleed.

INTRODUCTION.

Epistaxis is the most common nasal emergency, with an incidence ranging from 30 to 100 per 100,000 each year¹. The lifetime occurrence rate of epistaxis is approximately 60%.² Mostly bleeding episodes are minor and require no medical

treatment. Minor bleeding episodes occur more frequently in children and adolescents, whereas severe bleeds requiring surgical intervention often occur in patients older than 50 years³. Epistaxis is commonly divided into anterior and posterior

epistaxis, depending on the site of origin^{4, 5}. Anterior nose bleeds arise from damage to Kiesselbach's plexus on the lower portion of the anterior nasal septum, known as the Little's area, whereas posterior nose bleed arise from damage to the posterior nasal septal artery^{4, 6}. Anterior bleeding is relatively more common than posterior bleeding, as calculated in this study 80% of cases.^{4, 6, 7} The causative factors of epistaxis can be divided into the local or systemic causes, although even this recognition is some time difficult to make final diagnosis and later on labeled as "Idiopathic Epistaxis"^{4, 8}. The causative factor of epistaxis has been reported to vary with age and anatomical location.⁴⁻⁸

Trauma is most common cause of epistaxis seen in younger individuals and is most often due to road traffic accident, maxillofacial injury and in children a foreign body in the nasal cavity⁶⁻⁸. Other than trauma epistaxis is more characteristic of older patients (Over age 50 years) and may be due to rise in blood pressure, arterial atherosclerotic changes or environmental factors (Temperature, humidity, altitude)^{7,8}. Bleeding that occurs in children younger than 10 years usually is mild and originates in the anterior part of nasal septum, whereas epistaxis that occurs in individuals older than 50 years is more likely to be severe and to originate posteriorly related with rise in blood pressure⁹. Epistaxis carries a more risk in old age peoples in whom clinical deterioration may progress rapidly if the blood loss is significant.⁷

The treatment of epistaxis requires a systematic approach, and options vary according to the cause, location, and severity of the hemorrhage,^{7, 9}. Both conservative and surgical treatment modalities have been used in the treatment of epistaxis⁶. Most of the underlying causes of epistaxis are preventable.^{8, 9} A clearer understanding of the causes, treatment and outcome of these patients is essential for establishment of preventive strategies as well as treatment guidelines^{7, 8}. This study was conducted in our setting to identify the causative factor and to determine the outcome of treatment

of these patients. The results of this study will provide basis for planning of preventive strategies and establishment of treatment guidelines.

MATERIAL AND METHODS.

Study design and Setting: This was a prospective descriptive study of patients who presented with epistaxis at Quaid e Azam Medical College Bahawalpur, from 1st January 2017 to 31st December 2017.

All patients included who were presented with epistaxis at Quaid e Azam Medical College Bahawalpur during the above mention period. These patients were received through Emergency department, ENT clinic and as referral from other departments. Initial assessment included baseline investigation, type and severity of bleeding. In cases of mild bleed and stable patient detail history were noted and in case of sever bleed, history was completed after the control of hemorrhage. Detailed history taking and a through head & neck examination, systemic examination and special examination of the nose, throat and ears with head light and flexible nasoendoscopy were performed under local anesthesia to visualized site of bleeding. All patients were investigated, hematology and radiology evaluation were done. Blood samples were taken and sent for base line hemoglobin, total leukocyte count, platelet count and blood grouping and cross matching when indicated. Other relevant investigations were ordered based on clinical suspicion regarding a particular etiology.

Final diagnosis of epistaxis was made on detail history, anterior rhinoscopy and with the help of flexible nasoendoscopy examination under local anesthesia. Base line hematological and radiological investigations also carried out in all cases.

Initially all patients were treated conservatively and surgical intervention was considered only where conservative measures failed to control the epistaxis. Conservative medical treatment included chemical cauterization of the bleeding site, anterior nasal packing and

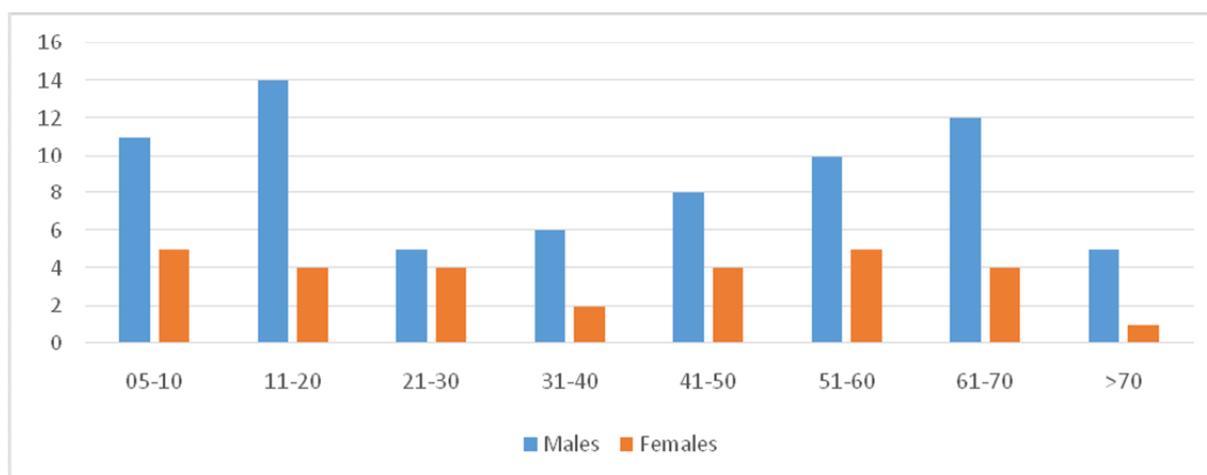
posterior nasal packing, antibiotic cover, antihistamines and anxiolytic were also added. Surgical treatment was reserved for resection of intranasal tumor. Successful treatment was defined as no recurrent epistaxis following pack removal or no epistaxis within 24 hours of hospital discharge.

RESULTS:

During the period under study, a total of 100 patients were studied. Seventy eight (78%) patients presented through the accident and emergency units and 22 (22%) presented in the otorhinolaryngology Clinic. There were 71 males (71%) and 29 females (29%) with a male to female ratio of 2:1. Their ages ranged between 4 and 78 years as shown in Table 1.

Age Group	Males	Females	Total no (%)
05-10	11	5	16 (16%)
11-20	14	4	18 (18%)
21-30	5	4	9 (9%)
31-40	6	2	8 (8%)
41-50	8	4	12 (12%)
51-60	10	5	15 (15%)
61-70	12	4	16 (16%)
>70	5	1	6 (6%)
Total	71	29	100 (100%)

TABLE 1. DISTRIBUTION OF STUDY POPULATION ACCORDING TO AGE AND SEX

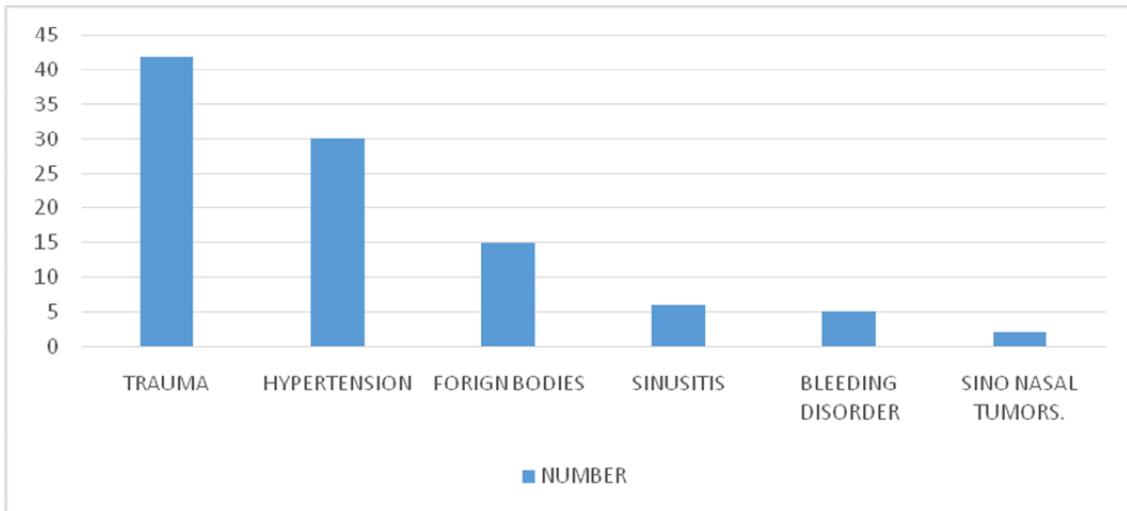


The commonest cause of epistaxis was observed in trauma (42%) followed by hypertension (30%) and nasal foreign bodies (15%), in patients where no trauma were seen there was also history of previous bleeding episodes range from three to five episode.

CAUSES OF EPISTAXIS	NUMBER	PERCENTAGE (%)
TRAUMA	42	42%
HYPERTENSION	30	30%
FORIGN BODIES	15	15%
SINUSITIS	6	6%
BLEEDING DISORDER	5	5%
SINO NASAL TUMORS.	2	2%

TABLE 2. CAUSES OF EPISTAXIS

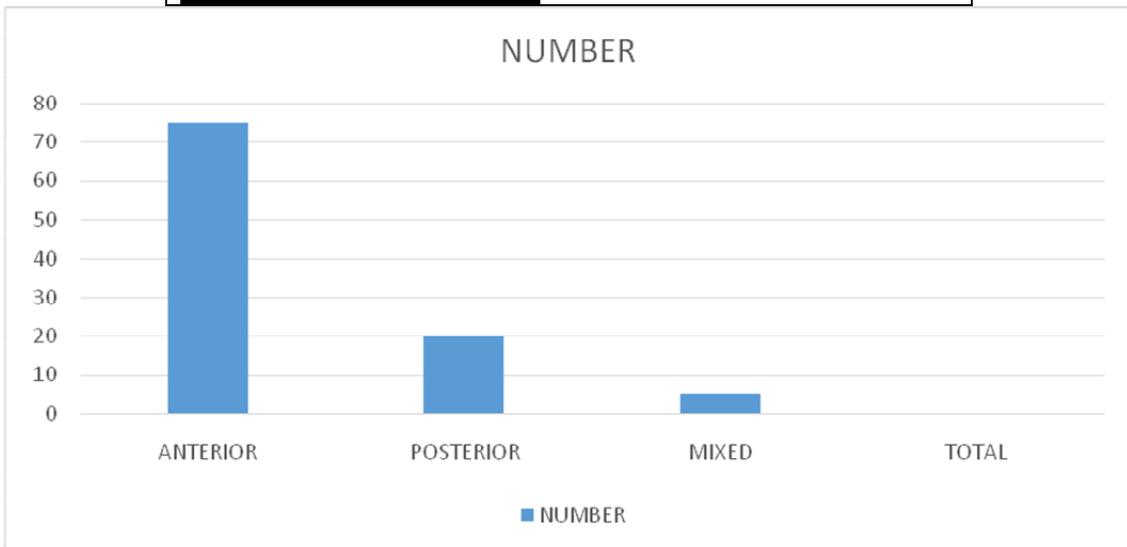
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According to the bleeding site, 75 patients (75%) had anterior nasal bleeding, 20 (20%) had posterior bleeding and the remaining 5 (5%) patients had non-identifiable bleeding site.(Table3).

TYPES OF EPISTAXIS	NUMBER	PERCENTAGE (%)
ANTERIOR	75	75%
POSTERIOR	20	20%
MIXED	5	5%
TOTAL		

TABLE 3: TYPE OF EPISTAXIS



The right nasal cavity (62%) was more affected than the left (24%). Bilateral involvement was recorded in 14 (14%) of cases. Table 4.

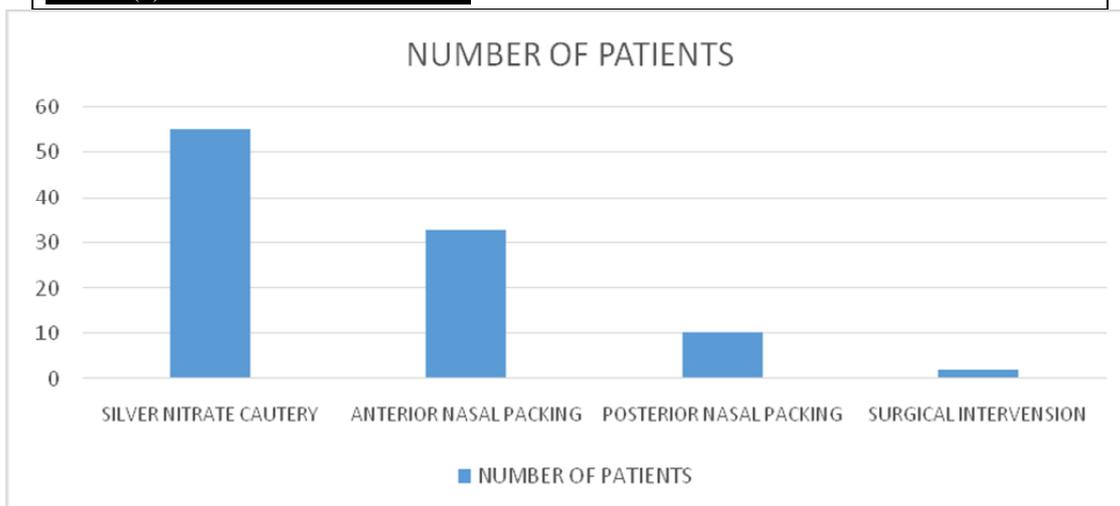
Site of epistaxis	Number	Percentage
Right nasal cavity	62	62%
Left nasal cavity	24	24%
Bilateral nasal cavity	14	14%

Conservative measures were the main intervention methods in 92% of cases. Out of this, silver nitrate cauterization was applied in (55%) patients, anterior nasal packing was done in (31.57%) and posterior nasal

packing was done in (10%) cases..Surgical measures mainly tumor resection was carried out in 2% of cases (Table 5).

TREATMENT MODALITY	NUMBER OF PATIENTS	PERCENTAGE (%)
SILVER NITRATE CAUTERY	55	55%
ANTERIOR NASAL PACKING	33	33%
POSTERIOR NASAL PACKING	10	10%
SURGICAL INTERVENTION	2	2%

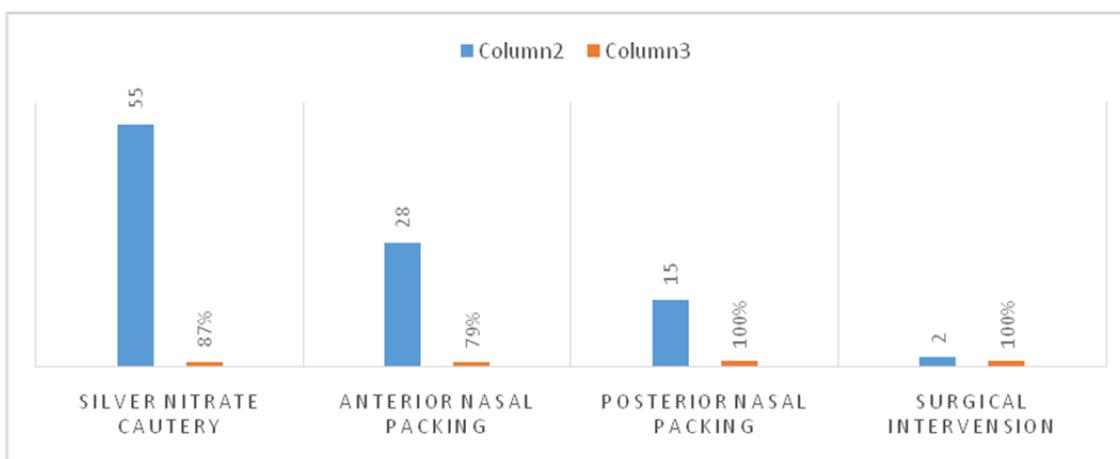
TABLE(5) TREATMENT MODALITY



Success rates for various treatment modalities are shown in table 6 below.

SUCCESS RATE	NUMBER OF PATIENTS	PERCENTAGE(%)
SILVER NITRATE CAUTERY	55	87%
ANTERIOR NASAL PACKING	28	79%
POSTERIOR NASAL PACKING	15	100%
SURGICAL INTERVENTION	2	100%

TABLE (6):SUCCESS RATE OF VARIOUS TREATMENT MODALITIES



DISCUSSION:

Epistaxis is the result of multiple local and other systemic disorders of the body¹⁰. The age range of our patients is almost similar to that reported in local and foreign literature^{11, 12}. Our study results

showed a bimodal presentation of epistaxis among the patients, which has also been reported in literature¹². The increased incidence of epistaxis in younger age is because of road traffic accidents especially with motor bike. On the other

hand, the increased incidence in old age is probably due to hypertension and atherosclerosis.¹¹ In the present study, epistaxis was found to affect more males than females with a male to female ratio of 2:1. This male preponderance has also been found in other studies.^{12, 13, 14}

In this study the male preponderance is high due to increase number of motor bike accidents in our area and relatively no traffic rules were practically implemented which tends to affect young males. Young males are the most active and so are more exposed to trauma face and nose causing epistaxis. The present study shows that the most common cause of epistaxis was trauma followed by hypertension, which is consistent with other studies in developing countries^{15, 16, 17}. The nose being a prominent feature on the face is highly susceptible in craniofacial injury.

Most of our patients with epistaxis from trauma were actually victims of high speed motor bike accidents and majority of them does not having driving license. Second common cause in our population is hypertension cause of epistaxis as correlated with this study of Chaiyasate et al¹⁸. Reported hypertension to be the commonest cause of epistaxis. These needs for regular blood pressure checkup and regular intake of antihypertensive medications should be emphasized.

In our study, anterior epistaxis was more common (75%) than posterior type (20%) and mix 5% cases. This finding is also supported by existing literature^{12, 17}. The management of epistaxis is appropriate in old age patients by taking detail examination with the help of flexible nasoendoscopy will be helpful in localization of bleeding point, stop the bleeding and treat the cause of epistaxis^{19, 20}. The goal of treatment include control of bleeding, short hospital stay, low complication and cost effectiveness by systemic approach^{5, 15, 20}.

Treatment modalities can be separated into two groups, conservative and surgical approaches. Conservative approach has been reported to stop

the bleeding in more than 80-90% of cases²¹. For arrest of hemorrhage, we used 3 conservative modalities sequential way, initially chemical cauterization with (silver nitrate) if bleeding point was visible, anterior nasal packing if bleeding was profuse and posterior nasal packing if anterior nasal packing failed. The same approach to control epistaxis was also followed by Rope et al as well²². Chemical cauterization was used in 55% in our patients. The overall success rate for cauterization was higher (87%) than that reported by Razdan et al²³ (72 %). Anterior nasal packing was used in 28% of our patients with success rate of 79 % similar with this study Gilyoma et al²⁴, had used anterior nasal packing for 38.5% of his patients with success rate of 92.5% which are higher to our results. Posterior nasal packing was used in 15% of patients with a success rate of 100%, similar to other studies^{22, 24}. We used ribbon gauze soaked in bismuth bromide, iodoform paste (BIPP) for nasal packing to minimize the risk of toxic shock syndrome¹¹. In this study, surgical treatment was done only in 2 % of patients who presented with bleeding intranasal tumor with 100% success rate. Similar finding was also reported in Iseh Kr et al²⁵. In our series, no surgical ligation of vessel was required.

CONCLUSION:

Trauma resulting from motor bike remains the most common etiological factor for epistaxis in our setting. Conservative approach insufficient in the management of most cases of epistaxis without the need for surgical intervention. Conservative treatment is mostly effective to control nasal bleeding. Surgical intervention should be reserved for those patients where primary method fails. Legislation in traffic rules will be the ultimate solution to reduce the incidence of trauma and emergency epistaxis.

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