

## Causes and management of epistaxis at a district hospital

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**Objective:** To determine causes, types, laterality, need for hospital admission and and success rate of treatment modalities of epistaxis.

**Methodology:** This study was conducted at Department of ENT, Mufti Mehmood Memorial Teaching Hospital, D.I. Khan, Pakistan from September 2010 to June 2012. All patients of acute epistaxis due to any cause were included. Those in whom bleeding stopped spontaneously were excluded. The data for the following nine variables was collected; gender, age in years, age group, cause, type and laterality of epistaxis, need for hospital admission and success rate of treatment modalities.

**Results:** Out of 275 patients, 199 (64%) were

male and 76 (36%) female. Mean age of the patients was  $38.30 \pm 23.69$  years. Trauma was the commonest (46.9%) cause followed by hypertension (26.9%). Anterior epistaxis was commoner (61.45%) than posterior (20.75%). Silver Nitrate Cautry was the commonest (57.80%) treatment modality followed by anterior nasal packing (31.3%). The success rate was 91.80% for Silver Nitrate Cautry.

**Conclusion:** Carrying good success rate, Silver Nitrate Cautry is a preferred choice for treatment of anterior epistaxis. (Rawal Med J 2013;38:48-51).

**Key words:** Epistaxis, Nasal packing , Silver nitrate.

### INTRODUCTION

Epistaxis is rarely severe and seldom requires hospital admission. It is estimated to occur in 60% of persons worldwide during their lifetime, and approximately 6% of those with nosebleeds seek medical treatment, with 1.6 in 10,000 requiring hospitalization.<sup>1</sup> Major etiologies include idiopathic, inhaled medications, mucosal breakdown caused by infiltration by malignancy or granulomatous disease and nasal trauma.<sup>2</sup> The condition has a bimodal distribution, with incidence peaks at ages younger than 10 years and older than 50 years. There are two types of epistaxis, anterior epistaxis (more common) and posterior epistaxis (less common and more severe).<sup>3</sup> Most cases of epistaxis are managed conservatively with chemical cautry or nasal packing. When this procedure fails, artery ligation is considered.<sup>4</sup> The objective of this study was to determine the causes, types, laterality, need for hospital admission and success rate of treatment modalities of epistaxis.

### METHODOLOGY

This descriptive study was conducted at Department

of ENT, Mufti Mehmood Memorial Teaching Hospital, Dera Ismail Khan, Pakistan from September 2010 to June 2012. All patients of acute epistaxis due to any cause were included. All those in whom bleeding stopped spontaneously and did not need any intervention were excluded. A written informed consent was obtained. A thorough otorhinolaryngological history and clinical examination was carried out. If the patient was in a state of shock due to excessive blood loss, measures were taken to stabilize the patient first.

Bleeding point was identified as follows. Any blood clots in the nose were sucked out. Soaked cotton balls (1-2) in a mixture of 2% lidocaine and 1:1000 epinephrine were put into the bleeding nostril for 10 minutes to achieve local anaesthesia as well as vasoconstriction. After removing the cotton balls, nose was re-examined and if any offending vessel has stopped bleeding, it appeared as a red dot on the nasal mucosa. If the vessel was still bleeding, active oozing was visible. Mean while blood samples were taken and sent for Haemoglobin estimation, and blood grouping and cross matching where indicated. Depending upon the severity, laterality and type of

epistaxis, one or more of the following three conservative treatment modalities were used under local anesthesia; silver nitrate cautery (SNC), anterior nasal packing (ANP) or posterior nasal packing (PNP). Initially, patients were treated with SNC, if the bleeding point was visible and unilateral. ANP was done with ribbon gauze impregnated with antibiotic ointment, in those patients where bleeding point was not visible and if the ooze was generalized or bleeding was profused. PNP was done with Folly's catheter, when the ANP did not work in controlling bleeding. Pack was left in for 24-48 hours. Spongoston (Gelfoam) was used in patients with bleeding diathesis, to avoid mucosal trauma associated with nasal packing. Successful treatment was defined as, no recurrence of bleeding after SNC or removal of pack within one week. All those patients who rebleeded after removal of pack, nasal packing was repeated and left for another 48 hours.

## RESULTS

Out of 275 patients, 199 (64%) were male and 76 (36%) female. Mean age of the patients was  $38.30 \pm 23.69$  years (range 5-80 years) (Table 1).

**Table 1: Demographic characteristics of study population (n=275).**

Age Groups (years)	Male N (%)	Female N (%)	Total N (%)
05-10	31 (11.25)	18 (6.55)	49 (17.80)
11-20	29 (10.55)	15 (5.45)	44 (16.00)
21-30	12 (04.35)	12 (4.35)	24 (08.70)
31-40	11 (04.00)	08 (2.90)	19 (06.90)
41-50	21 (07.65)	12 (4.35)	33 (12.00)
51-60	19 (06.90)	17 (6.20)	36 (13.10)
61-70	36 (13.10)	11 (4.00)	47 (17.10)
> 70	17 (06.20)	06 (2.20)	23 (08.40)
Total	176 (64)	99 (36)	275 (100)

Trauma was the commonest (46.9%) cause of epistaxis, followed by hypertension (26.9%). Anterior epistaxis was more common (61.45%) than posterior type (20.75%). SNC was the commonest (57.80%) treatment modality followed by ANP (31.3%). No mortality occurred in this study (Table 2).

**Table 2: Causes, management and outcome (n=275).**

Characteristics	Number	%
<b>Type of epistaxis</b>		
Anterior	169	61.45
Posterior	57	20.75
Mixed	49	17.80
Total	275	100.00
<b>Laterality</b>	192	69.80
Unilateral	83	30.20
Bilateral	275	100.00
<b>Needed hospital admission</b>	113	41.10
<b>Causes of epistaxis</b>		
Trauma	129	46.90
Hypertension	74	26.90
Upper respiratory tract infections	21	7.65
Bleeding diathesis	20	7.30
Sino-nasal malignancy	11	4.00
Maggots	5	1.80
Pregnancy	5	1.80
Renal disorders	4	1.45
Hepatic disorders	3	1.10
Bleeding polyp	3	1.10
<b>Treatment modality</b>		
Silver nitrate cautery	159	57.80
Anterior nasal packing	86	31.30
Posterior nasal packing	15	5.45
Spongoston (Gelfoam) packing	15	5.45
<b>Success rate</b>		
Silver nitrate cautery	146	91.80
Anterior nasal packing	66	78.60
Posterior nasal packing	15	100.00
Spongoston (Gelfoam) packing	08	53.33

## DISCUSSION

Epistaxis is the manifestation of multiple local and other systemic disorders of the body.<sup>5</sup> The age range of our patients is almost similar to that reported in local and foreign literature.<sup>3,6</sup> Contrary to our results, in a study by Awan et al all of the patients were from pediatric age group.<sup>7</sup> Our study results showed a bimodal presentation of epistaxis among the patients, which is has also been reported in literature.<sup>6,8</sup> But a study from Thailand does not support this finding.<sup>9</sup> The increased incidence of epistaxis in younger age is because of sports injuries and road traffic accidents due to their aggressive life style. On the other hand, the increased incidence in old age is probably due to vascular pathologies, hypertension and malignancy.<sup>3</sup> Our study is

consistent with other studies in showing male preponderance.<sup>1,6,9</sup>

The present series regarding patients who needed hospitalization (41%), is almost similar to that reported by Hussain et al (38.01%).<sup>6</sup> However, our figures are higher than that reported by Timsit et al (11%).<sup>10</sup> The need for hospitalization was more in patients with copious bleeding, patients aged over 65 years, and cases with head or maxillo-facial injuries.

In our study, the commonest cause of epistaxis was trauma (46.9%), as supported by national and international literature.<sup>6,11</sup> But a study by Hanif et al has reported hypertension to be the commonest cause.<sup>12</sup> According to some studies, more than 75% of cases of nasal trauma present with epistaxis.<sup>13</sup> Hypertension was the second most common (26.9%) cause of epistaxis in our series. This finding is in agreement with other studies.<sup>6,14</sup> Shaheen has reported that it is not the hypertension that causes epistaxis, rather it is the associated atherosclerosis that results in decreased vascular response to hemostasis and these patients tend to bleed heavily and longer.<sup>15</sup> In our study, anterior epistaxis was more common (61.45%) than posterior type (20.75%). This finding is in tandem with existing literature.<sup>6,9,16</sup> These findings differed from some studies, which showed that posterior epistaxis was more common.<sup>1,17</sup>

Regarding control of nasal bleeding, we used 3 conservative modalities in a stepwise fashion: initially SNC if bleeding point was visible, ANP if bleeding was profuse, and PNP if ANP failed. The same approach to control epistaxis was also followed by Rope et al as well.<sup>18</sup> SNC was used in 57.8% in our patients. The overall success rate for cauterization was higher (92%) than that reported by Razdan et al (72.07%).<sup>19</sup> Nemer and Mottasim in Jordan reported a success rate of 74%, which is lower than that of ours.<sup>20</sup>

Anterior nasal packing was used in 31.3% of our patients with success rate of 78%. Gilyoma et al had used ANP for 38.5% of his patients with success rate of 92.5% which are higher to our results.<sup>21</sup> Similarly, Hussain et al reported a success rate of 98.2% for ANP.<sup>6</sup> In contrast, Nicholaides et al reported successful use of ANP in only 22.3% cases.<sup>22</sup> We

used ribbon gauze impregnated with antibiotic (furacin) ointment for ANP to minimize the risk of toxic shock syndrome, associated with paraffin soaked gauze.<sup>3</sup> Spongoston (gelfoam) was used for nasal packing in patients (5.45%) with bleeding diathesis, as supported by another study.<sup>6</sup>

In our series, no surgical ligation of vessel was required. Arterial ligation is necessary in intractable cases of epistaxis when conservative measures fail. Currently, endoscopic approach and intervention radiology have made arterial ligation safer and faster in the management of epistaxis.<sup>23</sup> There was no mortality recorded in this series. A mortality rate of 1.9% was reported in a study in Nigeria due to severe epistaxis.<sup>11</sup> The study is limited because of the small study group. A large, randomized and a multi center study may help to study the efficacy of various conservative treatment modalities in managing epistaxis.

## CONCLUSIONS

Trauma is the leading cause of epistaxis. Carrying a good success rate, SNC is a preferred choice for treatment of anterior epistaxis. Our experience shows that conservative approach is arguably sufficient in the management of most cases of epistaxis without the need for arterial ligation.

### Author contribution:

Conception, designing, collection and assembly of data: MIK

Analysis and interpretation of the data: M

Drafting and critical revision of the article: RAK

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