Epistaxis in Chiang Mai University Hospital

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Objectives: *Epistaxis is a common otolaryngologic emergency, and can be severe or even fatal. The causes can be from local or systemic illnesses. The aim of this study was to review and analyze the general and specific data causes, management and results of epistaxis in patients admitted in Chiang Mai University Hospital.*
Material and Method: *A retrospective study by reviewing charts of new epistaxis inpatients, admitted to Chiang Mai University Hospital between January 2001 and July 2004, was done.*
Results: *From 55 cases reviewed, 41 were males (74.5%) and 14 females (25.5%). The mean age was 46.98 $\pm$ 17 years (12-87 years). The peak of prevalence was between January and April. The average length of hospital stay was 6.2 $\pm$ 3.8 days, (1-17 days). The most common cause of epistaxis was hypertension (32.72%) followed by tumor, local trauma and coagulopathy, subsequently. About 18 per cent of the patients had more than one cause of the illness. According to the bleeding site, 33 patients (60%) had anterior bleeding, 14 (25.45%) had posterior bleeding, and the rest had non-identifiable bleeding sites. There were 5 abnormalities from 52 patients (9.6%) tested for clotting profile. About one third of the patients received more than one type of procedure, while 2 patients (3.6%) treated by a local hospital before being transfered, were observed with successful outcome.*
Conclusion: *The most common and preventable causes of epistaxis in this review are hypertension and facial and paranasal sinus injuries. The other common curable cause is tumor. Otolaryngologists and general physicians should find out the causes and know characteristics of the patients and diseases, especially in their own area of practice in order to be able to perform optimal management.*

Keywords: *Epistaxis, Chiang Mai*

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Epistaxis is a common otolaryngologic emergency, which is found in 10 to 12 percent of the population.[1] It affects patients of all ages, but shows an increase in frequency between the ages of 15 and 25 years, and from 45 to 65 years, with no evidence of sex predilection. The incidence of epistaxis is higher during colder winter months when fluctuations in both temperature and humidity are most dramatic[1]. It is also common in hot dry climates with low humidity.

Chiang Mai has a hot and humid climate, and there is little information and not many studies in this context. Moreover, the etiology of epistaxis, which is important in patient management, may differ in Thailand from western countries. The aim of this study is to retrospectively review and analyze general data, specific data, management, and treatment results of severe epistaxis in patients that needed to be admitted in Chiang Mai University Hospital.

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Material and Method

New cases of epistaxis patients admitted in Chiang Mai University Hospital between January 2001 and July 2004 were included in the study, and their medical records were retrospectively reviewed. Criteria for admission were severe bleeding; cardiovascular instability, anemia, bilateral anterior nasal packing, posterior nasal packing, high risk; old age, underlying diseases and distant habitat. General information; age, sex, length of stay and specific information; causes, anatomical location of epistaxis (anterior epistaxis originated from anterior part of nasal septum, inferior turbinate, middle turbinate and middle meatus. Posterior epistaxis originated from high or posterior part of

nasal septum, posterior part of turbinates, middle meatus, Woodruff's plexus, sphenoethmoidal recess and nasopharynx) laboratory evaluation, management and outcome were collected and analyzed by SPSS software.

Results

From 63 new epistaxis patients, eight cases were excluded due to incomplete data. Of the remaining 55 cases, 41 were males (74.5%) and 14 females (25.5%). The male to female ratio was 3:1, with a mean age of 46.98 $\pm$ 17 years ranging from 12 to 87 years with peak at 40-49 years (29.1%), as shown in Table 1.

The peak of prevalence was between January and April.The average length of hospital stay was 6.2 $\pm$ 3.8 days, ranging from 1-17 days, and seventy per cent of the patients were discharged after one week. According to the bleeding site, 33 patients (60%) had anterior bleeding, 14 (25.45%) had posterior bleeding and the rest had non-identifiable bleeding sites (Table 2).

The causes of epistaxis were demonstrate in Table 3. Eighteen per cent of the patients had more than one cause.

Nine out of 18 hypertensive patients (50%) bled from the anterior nasal cavity, while 4 (22.2%) had posterior epistaxis. The other 5 cases(27.8%) had an non-identifiable bleeding sites. The laboratory investigations were demonstrate in Table 4.

Table 1. Demographic data

Total cases	55	100%
Male	41	74.50%
Female	14	25.50%
Age	12-87	years
	Mean	46.98$\pm$17
	Peak	40-49 years (29.1%)

Table 2. Number of cases in each age group and different bleeding sites

Bleeding site\age group	<20	20-39	40-59	60-79	>80	Total (cases)
anterior	3	8	14	7	1	33
posterior	3	2	7	2	0	14
unspecified	0	1	3	4	0	8
Total(cases)	6	11	24	13	1	55

Table 3. Etiology of epistaxis

Local causes	Cases	Per cent
Local trauma		12.7
Facial and soft tissue injury	3	
Facial and/or paranasal sinus fracture	4	
Deviated nasal septum	8	14.5
Tumor		18.2
CA nasopharynx*	3	
Angiofibroma	3	
Others**	4	
Systemic causes		
Hypertension	18	32.7
Coagulopathy	5	9.6
Chronic renal failure	2	3.6
Idiopathic	14	25.45

* CA nasopharynx: Two of which were post radiotherapy

** Others: 1 septal hemangioma, 1 SCCA of the nasal cavity, 1 malignant histiocytoma of the nose and paranasal sinus and one case of polymorphic reticulosis post radiotherapy

Table 4. Laboratory investigations

Test	Number tested	Number abnormal	Per cent
CBC	55	28	50.9*
BUN,Cr	40	5	12.5
LFT	21	1	4.8
PT, PTT	52	5	9.6

*All the abnormalities were anemia.

Table 5. Treatment of epistaxis

Anterior nasal packing	38 (69.1%)
Anterior-Posterior nasal packing	13 (23.6%)
Endoscopic cauterization	6 (10.9%)
Definite surgery	7 (12.7%)
Observation	2 (3.6%)

Treatment

Anterior nasal packing was performed in 38 patients (69.1%)**,** while anterior and posterior nasal packing was carried out in 13 patients (23.6%). Six patients (10.9%) were under endoscopic cauterization and 7 had definite surgery performed; 4 tumor resections, 2 septal corrections and 1 endoscopic sinus surgery. One patient underwent radiotherapy. Two patients had no additional treatment because of no further bleeding, since they had received nasal packing from a local hospital. About one third of the patients received more than one procedure (Table 5).

Success rate for anterior nasal packing alone is73 %, anterior and posterior nasal packing is 69%, and endoscopic cauterization is 100 %.

Discussion

Regarding the general information of our epistaxis patients, the male to female ratio (3:1) and peak age (40-49) were different from the other literature. Watkinson, Emanuel and Santos found a similar number of male and female patients and peak ages were 15-25 and 45-65 years[1-3]. The cases of epistaxis were higher during January to April, which are the winter and summer seasons in Thailand, when relative humidity is quite low[4]. Therefore, the low humidity in this period may be a more important factor in affecting epistaxis than the temperature itself.

The most commonly associated medical condition in this review was hypertension (32.7%).

Manfredini et al reviewed the history of 1,741 epistaxis patients and found the prevalence to have a biphasic circadian pattern, which had a primary peak in the morning and a smaller secondary peak in the evening[5]. They suggested that blood pressure might trigger or be conducive to epistaxis. However, Fuchs et al performed a cross sectional study in 1,174 patients and found no association between the prevalence of epistaxis and hypertension[6]. Hypertension found in epistaxis patients might be a cofactor or co incidence instead of the main cause of epistaxis. The correlation should be studied further.

Regarding the bleeding sites, sixty per cent were from the anterior part of the nasal cavity. Anterior bleeding sites were more common than posterior bleeding in all age groups, even in patients with hypertension. Only those patients with an unidentified bleeding site were more common in the older age group (12.5% versus 1.8%). These findings differed from previous reports, which showed that posterior bleeding sites and/or hypertension were more common in old age[1-3].

Anemia was found in 50% of the patients. Five abnormal clotting profiles were found among 52 patients. All of them had no history of coagulopathy or anticoagulant usage. Jones et al found nearly 50% abnormality of clotting profiles in epistaxis patients, and half of these had no suggestive history, so they recommended coagulation screening in all cases[7]. Thana et al, on the other hand, found only 8.3 percent abnormality in routine screening of coagulation and all of the patients had a history of anticoagulant usage[8]. They suggested testing when clinically indicated.

This was also suggested by Holland et al, there were 2 patients with a history of anticoagulant usage, but neither had an abnormal clotting profile, while all 7 patients with an abnormal profile had no predicting history[9]. We then recommended tests in severe or recurrent epistaxis, despite no history of anticoagulant usage or coagulopathy. However, the severity of epistaxis might be the cause of the abnormalities, or conversely, the abnormal clotting profiles is the cause of epistaxis.

The average length of hospital stay was 6.2 3.8 days. Our management was stepwise starting from anterior nasal packing, posterior nasal packing, endoscopic cauterization, and angiography and embolization[1-3,10]. Pritikin et al and Srinivasan et al successfully treated intractable epistaxis with endoscopic cauterization or ligation of the sphenopalatine artery on the lateral nasal wall, and their patients were discharged within 1- 3 days(average 2.2 days)[11,12]. On the other hand, El-Guindy et al successfully used endoscopic transeptal approach for sphenopalatine artery ligation in their intractable cases[13]. Their findings also warn us to improve our outcome of treatment and decrease length of hospital stay in intractable, non tumor cases of epistaxis by performing the endoscopic cautery or blood vessel ligation earlier.

Since Chiang Mai University Hospital is a tertiary care and referral center in the northern part of Thailand, its cases are more severe or complicated than the other. The nose bleeding was successfully controlled in all patients, but some cases may have had a long hospital stay and required multiple procedures. The unknown etiology group with a history of alcohol consumption was advised to stop. There was no recurrent epistaxis in this group at least 1 month follow up, however, 2 cases of malignancy needed the definite treatment of their underlying diseases.

Conclusion

Epistaxis is a common ENT emergency. The most common and preventable causes in this review were hypertension and facial and paranasal sinus injuries. The other common and curable cause was tumor. Otolaryngologists and general physicians should find out the causes and know characteristics of the patients and diseases, especially in their own area of practice in order to be able to perform optimal management.

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ภาวะเลือดกำเดาไหล ในผู้ป่วยของโรงพยาบาลมหาราชนครเชียงใหม่

สายสวาท ไชยเศรษฐ, กรรณิการ์ รุ่งโรจน์วัฒนศิริ, สุปราณี ฟูอนันต์, ยุพา สุมิตสวรรค์

วัตถุประสงค์: เลือดกำเดาไหลเป็นภาวะฉุกเฉินทางหูคอจมูกที่พบได้บ่อยในเวชปฏิบัติ ซึ่งบางครั้งมีความรุนแรงและเป็นอันตรายถึงชีวิต สาเหตุพบได้ทั้งจากรอยโรคเฉพาะที่ (local causes)และ/หรือโรคทั้งระบบของร่างกาย (systemic causes) การศึกษานี้จึงต้องการรวบรวมและแสดงข้อมูลต่าง ๆ ของผู้ป่วยและแสดงสาเหตุของภาวะเลือดกำเดาไหลที่มีความรุนแรงจนต้องรับเข้ารักษาในโรงพยาบาลมหาราชนครเชียงใหม่

ประเภทของงานวิจัย: วิจัยเชิงพรรณนา (descriptive study)

วัสดุและวิธีการ: ข้อมูลจากเวชระเบียนผู้ป่วยในที่รับเข้ารักษาที่หอผู้ป่วยโสต ศอ นาสิกวิทยา โรงพยาบาลมหาราชนครเชียงใหม่ด้วยภาวะเลือดกำเดาไหล ทุกรายตั้งแต่ 1 มกราคม พ.ศ.2544 ถึง 31 กรกฎาคม พ.ศ.2547

ผลการศึกษา: สืบค้นข้อมูลได้ทั้งสิ้น 55 ราย เป็นชายมากกว่าหญิงในอัตราส่วน 3:1 อายุเฉลี่ย 46.98 + 17 ปี (12-87 ปี) ช่วงเดือน มกราคมถึงเมษายนมีจำนวนผู้ป่วยสูงกว่าเดือนอื่น ๆ ระยะเวลานอนโรงพยาบาลเฉลี่ย 6.2 + 3.8 วัน (1-17 วัน) สาเหตุที่พบบ่อย คือความดันโลหิตสูงร้อยละ 32.72 รองลงมาคือเนื้องอก (ทั้งที่เป็นมะเร็งและไม่ใช่มะเร็ง มีจำนวนใกล้เคียงกัน) การบาดเจ็บเฉพาะที่ และภาวะการแข็งตัวของเลือดผิดปกติ โดยผู้ป่วยร้อยละ18 พบสาเหตุมากกว่า 1 อย่าง เมื่อพิจารณาตามตำแหน่งของเลือดออกพบว่า 33 ราย (ร้อยละ 60) เลือดออกจากทางด้านหน้าของโพรงจมูก (anterior epistaxis) 14 ราย (ร้อยละ 25.5) เลือดออกจากทางด้านหลังของโพรงจมูก (posterior epistaxis) ที่เหลือไม่สามารถระบุตำแหน่งเลือดออกได้ชัดเจนเนื่องจากตรวจไม่พบตำแหน่งเลือดออก การตรวจทางห้องปฏิบัติการ พบภาวะผิดปกติของ clotting profile 5 ราย จาก 52 ราย (ร้อยละ 9.6) หนึ่งในสามของผู้ป่วยได้รับการทำหัตถการรักษาตั้งแต่ 2 ชนิดขึ้นไป ผู้ป่วย 2 ราย (ร้อยละ 3.6) ได้รับการทำหัตถการหยุดเลือดจากโรงพยาบาลชุมชนก่อนส่งตัวมาและไม่มีเลือดออกซ้ำขณะอยู่โรงพยาบาล

สรุป: สาเหตุของเลือดกำเดาไหลที่พบได้บ่อยและสามารถป้องกันการเกิดได้จากการศึกษานี้คือ ความดันโลหิตสูงและการบาดเจ็บบริเวณใบหน้าและโพรงไซนัส ส่วนสาเหตุจากเนื้องอกพบได้รองลงมาแม้ไม่สามารถป้องกันได้แต่รักษาได้ แพทย์ผู้รักษาทั้งโสต ศอ นาสิกแพทย์ และแพทย์ทั่วไปจึงควรหาสาเหตุและทราบลักษณะเฉพาะของผู้ป่วยและโรคให้ถ่องแท้โดยเฉพาะในสาขาวิชาชีพของตนเพื่อสามารถให้การดูแลรักษาผู้ป่วยได้อย่างถูกต้องเหมาะสม