THE CLINICAL FEATURES AND CAUSES OF NON-TRAUMATIC EPISTAXIS IN ADULTS COMBINED WITH DIAGNOSTIC NASAL ENDOSCOPY

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Abstract

Introduction: There is a paucity of data regarding the usage of endoscopy in the diagnosis and treatment of epistaxis. The objective of this study is to describe the clinical characteristics and to investigate the causes of non-traumatic epistaxis in adults using the diagnostic nasal endoscopy.

Material and methods: A cross-sectional study was conducted involving above 66 patients aged ≥ 18 years old with non-traumatic epistaxis diagnosed by a nasal endoscopy performed at the Ho Chi Minh city Ear, Nose and Throat hospital.

Results: We found that male patients accounted for 71.2% of the epistaxis. The most common age range was from 42 to 54 years old (34.85%). A majority of patients Most patients had no warning symptom (60.6%). We found that 71.21% of the patients had unilateral epistaxis. Furthermore, most of the epistaxis happened during the day (90.9%). We observed that 33.33% of the patients with epistaxis had hypertension. Furthermore, 72% of the patients with a history of hypertension require non-invasive treatment. We found that 92% of hypertensive patients with a visible bleeding site were diagnosed by endoscopy.

Conclusion: Nasal endoscopy is a valuable and effective tool not only in localizing epistaxis but also in treating non-traumatic epistaxis.

Keywords: nontraumatic epistaxis, nasal endoscopy

1. Introduction

It was reported that more than 60% adults experience a nosebleed in their lifetime. However, only about 6% of them require medical intervention[1]. Therefore, the patients who present to the hospital usually have moderate or severe nosebleeds that do not resolve spontaneously or require medical assistance[2,3].

Epistaxis (Nosebleeds**)** can be classified

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into anterior and posterior epistaxis, of which nearly 90% of the epistaxis are anterior epistaxis which can be recognized by anterior nasal bleeding [4,5]**.** The challenges in diagnosing and treating epistaxis vary greatly depending on the severity of the bleeding**.** Therefore, recognizing the type of epistaxis, its location, and its severity is important for appropriate and effective emergency treatment[6]**.**

The causes of epistaxis are often very diverse and complex, because epistaxis is the result of normal physiological changes in the nasal mucosa and blood vessels of the nasal mucosa[7]. Local causes of epistaxis include: trauma to the nose and face, sinusitis, or the use of nasal drops.

On the other hand, systemic diseases or abnormal physiological conditions such as hypertension, cardiovascular disease, diabetes, patients using anticoagulants, or clotting disorders can also cause persistent epistaxis. Mean while, hypertension and atherosclerosis appear to be a contributing factor that increase the severity of epistaxis[8].

The location and the cause of epistaxis can be easily diagnosed in cases of trauma. Patients with a history of epistaxis, recurrent epistaxis, or bleeding that is difficult to control should be referred to a clinician for a systemic cause[9].

In Vietnam, since 2000 until now, ear-nose-throat (ENT) endoscopy has been widely used and is currently accepted as a routine procedure for clinical ENT examination. The wide usage of ENT endoscopy in diagnosing epistaxis allowed to determine the exact bleeding site. Furthermore, endoscopy also played an important role in the treatment of epistaxis. However, there is a paucity of data regarding the usage of endoscopy in the diagnosis and treatment of epistaxis. The objective of this study is to describe the clinical characteristics and to investigate the causes of non-traumatic epistaxis in adults using the diagnostic nasal endoscopy.

2. Material and methods

2.1. Objects

Objects were patients aged ≥ 18 years old with non-traumatic epistaxis diagnosed by a nasal endoscopy at the Ho Chi Minh city Ear, Nose and Throat hospital from January 2021 to December 2021. Patients with a history of epistaxis and diagnosed by nasal endoscopy were included in the study. We excluded cases of epistaxis related to trauma, patients in coma, or patients who could not undergo nasal endoscopy.

2.2. Inclusion criteria

- Patients aged 18 years or older
- Patients with non-traumatic epistaxis diagnosed by nasal endoscopy
- Patients who presented to the emergency department with non-traumatic epistaxis.
- Patients with a history of epistaxis who voluntarily consented to diagnostic endoscopy.

2.3. Exclusion criteria

- Patients aged under 18 years old.
- Patients with epistaxis caused by trauma.
- Patients who were in a coma, unable to undergo nasal endoscopy, or did not provide voluntary consent for diagnostic endoscopy.

2.4. Methods

- Study design: case series description
- Sampling method: convenience sampling
- 66 patients who met the inclusion criteria were enrolled in the study

2.5. Statistical analysis

We used Chi-squared test to compare two binary samples. Statistical analysis of all data was performed using the SPSS Statistics software version 20.0.0 for Windows (SPSS, Chicago, IL, USA). A two-tailed *p*-value < 0.05 was considered statistically significant.

3.Results

3.1. General characteristics of the research sample

There were 66 patients enrolled in the study, including 47 male patients (71.2%) and 19 female patients (28.8%). Mean while, the ratio of men/women was 2.5:1. We found that the age group with the highest proportion was from 42-54, accounting for 34.85% of the epistaxis. The oldest patient age was 87 years old, and the average patient age is 45 years old.

3.2. Prodromal symptoms:

Epistaxis without prodromal signs accounted for the highest proportion with 40 patients (60.6%). In patients with prodromal signs, dizziness accounted for 25 cases (37.88%). Meanwhile, nasal congestion accounts for only 1.5% of the cases.

3.3. The time of epistaxis

The vast majority of epistaxis occurred during the day, accounting for 60 cases (90.9%) ($p< 0.05$).

3.4. Unilateral and bilateral epistaxis:

Unilateral epistaxis accounted for 47 cases (71.21%) ($p< 0.05$).

3.5. The severity of epistaxis:

The mild epistaxis cases accounts for 74.24%. There were no cases with severe epistaxis.

3.6. Comorbidities:

The number of cases with a history of hypertension accounts for 22 cases (33.33%). There were 3 cases with diabetes (4.55%). There was 1 case with thrombocytopenic hemorrhage (1.52%).

3.7. Recurrence:

There were 45 epistaxis cases for the first time (68.18%) and 21 relapse cases (31.82%).

3.8. The site of bleeding:

Site	Cases	Percentage
Unidentified	29	43.93 %
Nasal septum	21	31.81 %
Inferior turbinate	7	10.6 %
Middle turbinate	6	9.09 %
Superior meatus	3	4.54 %

3.9. Treatment:

Treatment	Cases	Percentage
Stop spontaneously /Compression	24	36.36 %
Nasal packing	17	25.76 %
Endoscopy coagulation	10	15.15 %
Coagulation nasal endoscopy surgery	30	45.45 %

3.10. The association between the history of hypertension and the treatment method:

Among patients with hypertension, there were 18 cases treated with non-invasive intervention (72%). In patients with normal blood pressure, there are 31 cases treated with non-invasive intervention (75.6%). We observed that the history of hypertension was associated with the treatment method ($p< 0.01$).

3.11. The association between the history of hypertension and visible bleeding site on endoscopy:

Among patients with hypertension, there were 23 cases where the bleeding site was visible on endoscopy (92%). Among patients with normal blood pressure, there are 28 cases of visible bleeding site on endoscopy (68.29%). We observed that the history of hypertension was associated with the visible bleeding site on endoscopy ($p< 0.001$).

4. Discussion

The ratio of men and women in this study was 2.5, of which 47 male patients accounted for 71.2% and 19 female patients accounted for 28.8%. This ratio was consistent with previous studies. the different prevalence of epistaxis between men and women is influenced by two main factors: habits and biological sex characteristics. In Vietnam, the frequency of alcohol and tobacco use in men is significantly higher than in women. It was reported that the smoking rate among adults is 42.3% for men and 1.7% for women. Although smoking in men tends to decrease and smoking in women tends to increase gradually, male smokers still account for the vast majority of cases. Currently, previous studies found that tobacco can lead to cardiovascular diseases, hypertension, and atherosclerosis, which may increase the risk of epistaxis. The estrogen hormone in women may have a role in protecting the nasal mucosa and the vascular smooth muscle, thus reducing the risk of epistaxis.

In this study, the highest frequency of epistaxis was from 42 to 54 years old (34.85%). Previous studies found that the highest age for epistaxis is from 0 to 10 years old and over 40 years old, then gradually declines over the age of 70[10,11]. In our study, the group without prodromal signs had the highest rate (60.6%), which was consistent with previous studies. A majority of epistaxis occurred during the day. The reason may be due to increased activities during the day leading to increased blood pressure.

A majority of hypertension was observed in this study, which was similar to previous studies. It was reported that that there was a cause-and-effect relationship between hypertension and epistaxis [12].

Another study found that high blood pressure was not associated with epistaxis [13,14]. Hypertension may have a significant impact on the risk of epistaxis and treatment effectiveness.

The rate of unilateral epistaxis accounts for the majority of cases with 47 cases (71.2%). This rate is relatively similar to previous studies[15]. In the current study, the data did not record cases of severe epistaxis, which was consistent with previous studies, because the presence of severe non-traumatic epistaxis is quite rare. Hypertension or diabetes often causes persistent epistaxis rather than severe epistaxis due to direct trauma.

5. Conclusion

In this study, we investigated the clinical characteristics and the causes of non-traumatic epistaxis in adults by using the diagnostic nasal endoscopy. We observed that 33.33% of the patients with epistaxis had hypertension. Furthermore, most cases with a history of hypertension require non-invasive treatment. We found that 92% patients with hypertension had a visible bleeding site diagnosed by endoscopy. Nasal endoscopy is a valuable and effective device for the diagnosis and management of nontraumatic epistaxis.

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