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Prevalence and Risk Factors of Epistaxis in College of Medicine in Sulaymaniyah

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Abstract:

Background: epistaxis is one of the ENT problem that's common in general population, it can happen in any age due to variable causes and risk factors ,sometimes doesn't need treatment while in severe cases need surgical and medical care

Objective: The aim of this study is to find prevalence and risk factors among the population in college of medicine in Sulaymaniyah

Patients and Methods: a retrospective cross-sectional study at college of medicine in Sulaymaniyah university, in which 329 cases enrolled among the cases (students, teacher, employer) are involved

Result: The prevalence of epistaxis among population in college of medicine in Sulaymaniyah was found to be 52.9, most of the cases was below 18 years, it usually happened in summer.

Conclusion: Most of cases happen below 18 years, the most common risk factors was nasal trauma and it usually happens in summer, most of the cases that experienced epistaxis had positive family history

Key word: Epistaxis, Nose bleeding, Nasal cavity, Risk factors.

1.1 Introduction

Bleeding that comes from the nasal cavity is called epistaxis. Epistaxis, regarded as one of the most frequent ENT crises, is thought to be responsible for up to one-third of otolaryngology-related ER visits and 0.5% of all visits.[4]

Life-threatening nasal hemorrhage can range from moderate to severe. The duration of epistasis might range from a few minutes to over an hour. It can occur at any age, although it seldom does so in infants under the age of two. Instead, it is most frequently seen in children aged three to eight[6].

Even though only 6–10% of nosebleeds need medical attention, they are the most prevalent reason for ear, nose, and throat (ENT) emergency visits, along with pharyngitis.[1]

Although the actual prevalence is yet unknown worldwide, 60% of people are predicted to experience epistaxis at least once in their lives, with 6% of those individuals seeking medical assistance.[7]

1.2 Anatomy

The nose is the most prominent and important portion of the face, making it more susceptible to trauma. It also marks the start of the respiratory system. These long, wedge-shaped areas are kept open by a skeletal framework primarily made of bone and cartilage. They have a wide inferior base and a narrow superior apex. The nares, which open onto the nose's inferior surface, are the nasal cavities' anterior openings. When air enters the respiratory system through the nose, it is warmed, humidified, and filtered. Additionally, olfaction takes place there. The internal nasal space is divided into two nasal cavities by the nasal septum. The superior, middle, and inferior tributaries make up the nasal cavities' lateral wall, which is highly vascularized. [19,20,21]

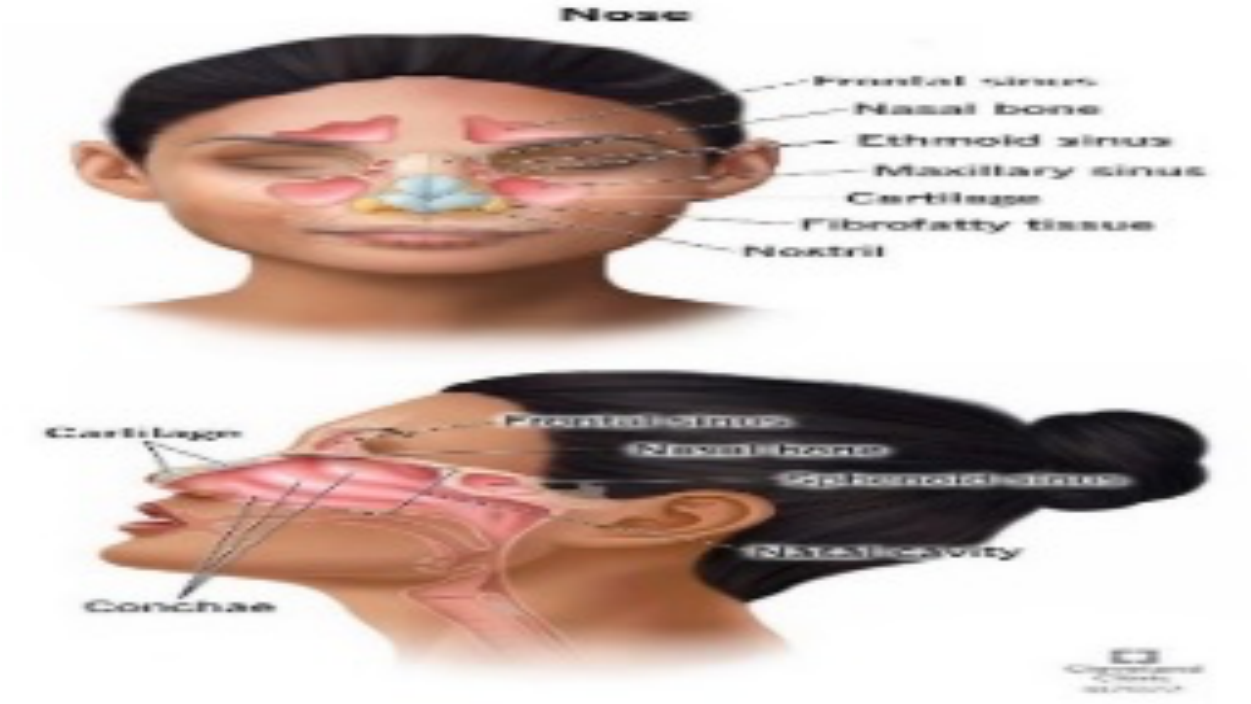


Figure (1).Anatomy of nose

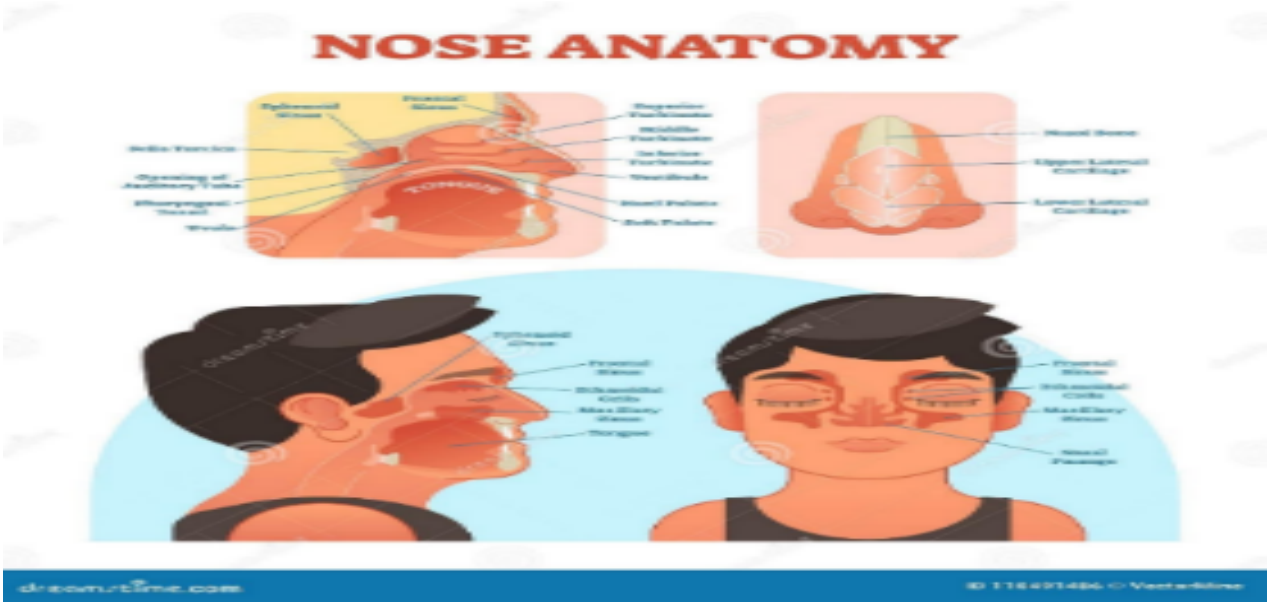


Figure (2).Anatomy of nose[23]

1.3 Blood supply

1.3.1 Arterial supply: The nasal cavity is supplied by arteries originating from both the internal and external carotid arteries. Branches of the external carotid artery include the sphenopalatine, greater palatine, superior labial, and lateral nasal arteries. Branches of the internal carotid artery include the anterior and posterior ethmoidal arteries.[2]

The sphenopalatine artery, a terminal branch of the maxillary artery, is the largest vessel supplying the nasal cavity. The greater palatine artery enters the nasal cavity through the incisive canal from the roof of the oral cavity. The superior labial and lateral nasal arteries originate from the facial artery on the front of the face.[2]

The anterior and posterior ethmoidal arteries originate in the orbit from the ophthalmic artery, which stems from the cranial cavity as a major branch of the carotid artery.[2]

1.3.2 Venous supply: Veins draining the nasal cavities typically follow the pathways of the arteries. Veins associated with branches from the maxillary artery drain into the pterygoid plexus of veins in the infratemporal fossa. Veins from anterior regions of the nasal cavities join the facial vein.[2]

1.4 Epistaxis

1.4.1 Definition of Epistaxis: Epistaxis is a bleeding from the nose due to rupture of tiny, distended vessels in the mucous membrane of any area of the nose [8]

1.4.2 Types of Epistaxis: Epistaxis can be classified into two main categories: anterior and posterior locales. A higher frequency of anterior epistaxis occurs in early life. Its source may be venous (Retrocolumellar vein) or arterial (Keisselbach plexus). This sort of epistaxis is rarely significant because it is easy to access the bleeding spot.

Conversely, older people are more likely to experience posterior epistaxis, which can pose a significant treatment challenge. It is believed to affect men more often than women, and as people age, the prevalence rises.[9]

1.4.3 Causes and Risk Factors of Epistaxis: Causes include nasal bleeding brought on by local or systemic factors.

The systemic variables that included arterial high blood pressure, coagulopathy, blood diseases, and anticoagulant use, on the other hand, the local factors included trauma, septal rupture, foreign body entry into the nasal cavity, allergies, and upper respiratory infections. Other causes in children include idiopathic causes including nose picking, as well as less prevalent ones such ectopic intranasal teeth, trauma, medicines, nasopharyngeal masses, bacterial nasal colonization,

and allergic rhinitis[9]. Recurrent multifocal bleeding from thin-walled capillaries deficient in muscle and elastic tissue is the result of hereditary hemorrhagic telangiectasia (HHT), also known as Osler's disease[22]. Numerous sinonasal cancers, such as nasopharyngeal carcinoma, hemangioma, hemangiopericytoma, and metastatic illness, can result in epistaxis[3]. One well-known and possibly fatal consequence following surgery in and around the nasal cavity is epistaxis. It is often believed that the colder, drier months are when epistaxis occurs [11].

1.4.4 Treatment of Epistaxis : The severity of bleeding, a person's medical history, and any potential coagulation disorders all influence the best course of treatment for epistaxis[10].

- **Compression;**

When treating patients who require immediate attention for active bleeding, the doctor should apply hard, continuous compression on the lower third of the nose for at least five minutes, either with the patient's or caregiver's help[12].

- **Nose packing :**

In patients when nasal compression is used but bleeding prevents the identification of a bleeding site, your healthcare practitioner may apply nasal packing, which consists of gauze or other soft materials, to stop the bleeding[12].

- **Nasal cautery**

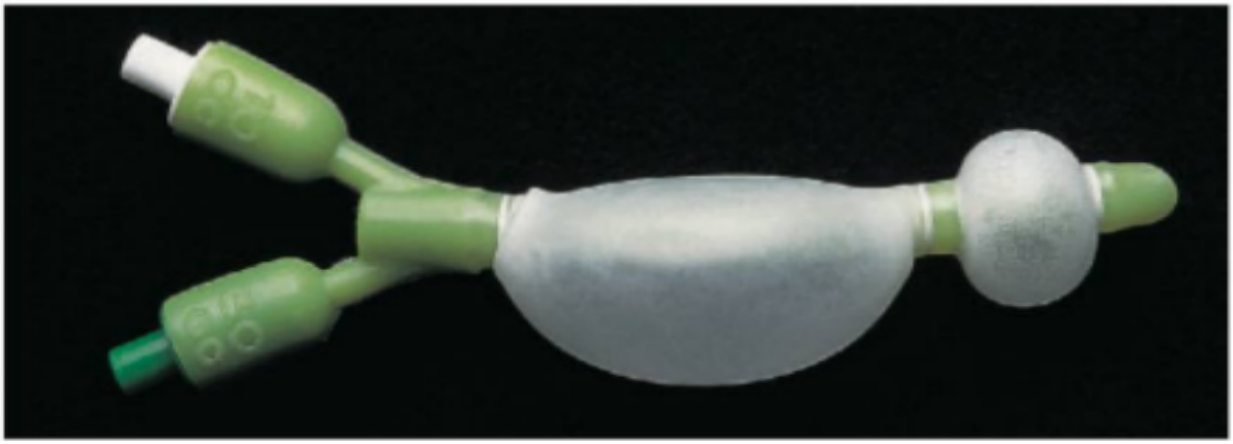
We rarely need a pack for anteriorly positioned bleeders; instead, we may utilize chemical or electric cautery. Whenever possible, a comprehensive nasal endoscopy is carried out for posterior epistaxis in order to identify and cauterize a bleeding source.[5]

- **Balloon catheter ;**

An alternative to anterior packing is the use of an inflatable epistaxis balloon catheter. The catheter is passed into the nose and the distal balloon is inflated in the nasopharynx to secure it. The proximal balloon, which is sausage shaped, is then inflated within the nasal fossa to compress the bleeding point.

Despite their general effectiveness, they might cause discomfort. [2]

- **Sphenopalatine Artery Coagulation Or Endoscopic Cut.[13**



Figure(3).Epistaxis balloon catheter[2]

Methods

This research is a retrospective cross-sectional study, that collected 329 cases at college of medicine in Sulaymaniyah university enrolled by both manually among (students, teacher, employer) that there ages above 18 years old from November 2024 to march 2024, The survey included prevalence and risk factors of epistaxis, Data was collected and coded. The collected data was reviewed and analyzed using the Statistical Package for Social sciences (SPSS version 23). Descriptive statistics such as frequency and percentage were calculated. P value was obtained for the categorical variable chi -square and was considered significant if it was less than 0.05

Results:

Table (1): Collected Data from Patients

Frequencies Table		
	Frequency	Percent
How Old Were You When You First Experienced Epistaxis		
Below18	150	45.6
Above18	17	5.2
Both	7	2.1
Total	174	52.9
Was Bilateral Or Unilateral		
Unilateral	96	29.2
Bilateral	72	21.9
Both	6	1.8
Total	174	52.9
Do You Have Any Of These Condition		
Hypertension	4	1.2
Hemophilia	2	.6
Blood Factor Deficiency	3	.9
Kidney Problem	1	.3
Others	22	6.7
None	142	43.2
Total	174	52.9
Do You Have History Of Nasal Trauma Before Developing Epistaxis		
Yes	71	21.6
No	103	31.3
Total	174	52.9
Do You Have History Of Nasal Cannulations Before Developing Epistaxis		
Yes	10	3.0
No	164	49.8
Total	174	52.9
Do You Have History Of Nasal Forigen Body Before Developing Epistaxis		
Yes	23	7.0
No	151	45.9
Total	174	52.9
Do You Have History Of Nasal Spray Use Before Developing Epistaxis		

Yes	**24**	**7.3**
No	**150**	**45.6**
Total	**174**	**52.9**
Do You Have History Of Nose-Pick Habit Daily Before Developing Epistaxis		
Yes	**59**	**17.9**
No	**115**	**35.0**
Total	**174**	**52.9**
Do You Have History Of Nasal Surgery		
Yes	**38**	**11.6**
No	**136**	**41.3**
Total	**174**	**52.9**
Do You Have History Of Smoking		
Yes	**23**	**7.0**
No	**151**	**45.9**
Total	**174**	**52.9**
Do You Have History Of Alcohol		
Yes	**8**	**2.4**
No	**166**	**50.5**
Total	**174**	**52.9**
How Many Times Do You Use Perfume Daily		
No	**11**	**3.3**
1.00	**80**	**24.3**
2.00	**64**	**19.5**
3.00	**14**	**4.3**
4.00	**2**	**.6**
5.00	**2**	**.6**
6.00	**1**	**.3**
Total	**174**	**52.9**
Did You Have Cold Exposure Before Developing Epistaxis		
Yes	**54**	**16.4**
No	**120**	**36.5**
Total	**174**	**52.9**

Did You Use Long-Term Medication During Developing Epistaxis		
Anticoagulants	**3**	**.9**
Anti-Platelet	**1**	**.3**
Corticosteroids	**2**	**.6**
Others	**23**	**7.0**
None	**144**	**43.8**
Anticoagulants And Anti-Platelet	**1**	**.3**
Total	**174**	**52.9**
In Which Season Did You Experience Epistaxis		
Summer	**85**	**25.8**
Winter	**27**	**8.2**
Autumn	**2**	**.6**
Spring	**8**	**2.4**
All	**36**	**10.9**
None	**16**	**4.9**
Total	**174**	**52.9**
Does Anyone Have History Of Epistaxis In Your Family		
Yes	**115**	**35.0**
No	**59**	**17.9**
Total	**174**	**52.9**

Among 329 cases in medicine college in Sulaymaniyah 71.7 of them was in Sulaymaniyah and 28.3 was from outside the city ,57.8 percent was male and 42.2 percent was female, 302 of them was student and 14 teacher with 13 employer , The mean age was 23.97+_ 8.05 , 52.9 percent had experienced epistaxis , 45.6 percent of them had experienced epistaxis below 18 years and 55.4 percent experienced epistaxis at the age above 18 , 42.2 percent had no have any chronic disease , 21.6 percent of them had nasal trauma before developing epistaxis and 31.3 had no experienced nasal trauma before developing epistaxis , 17.9 percent had nose picking before developing epistaxis , 11.6 of them had history of nasal surgery , 11.1 percent was on chronic use of drugs , 35 percent of them had positive family history.

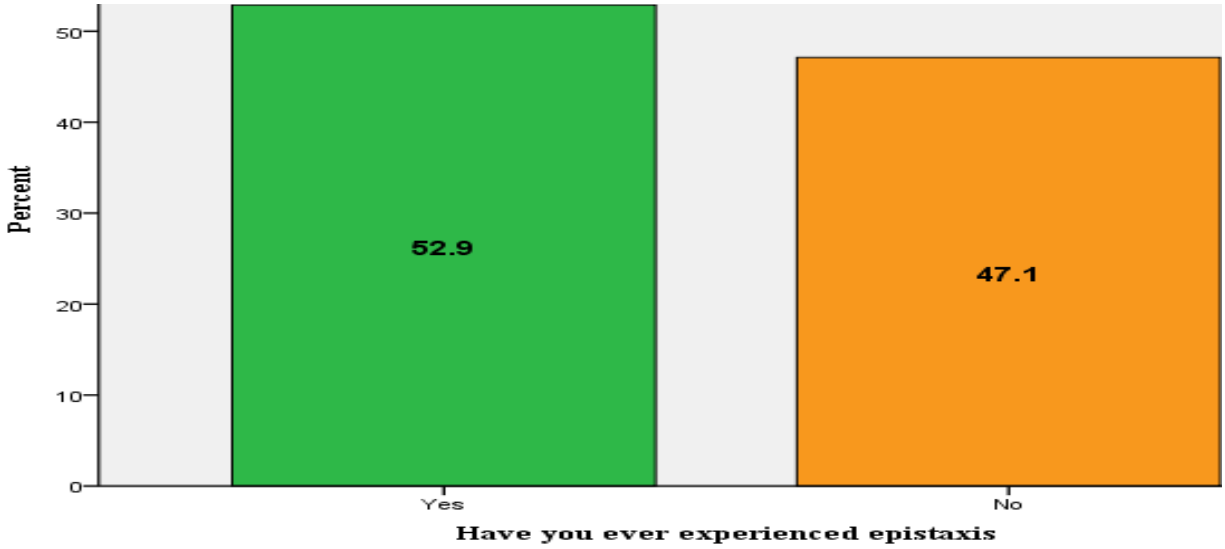


Figure (4).

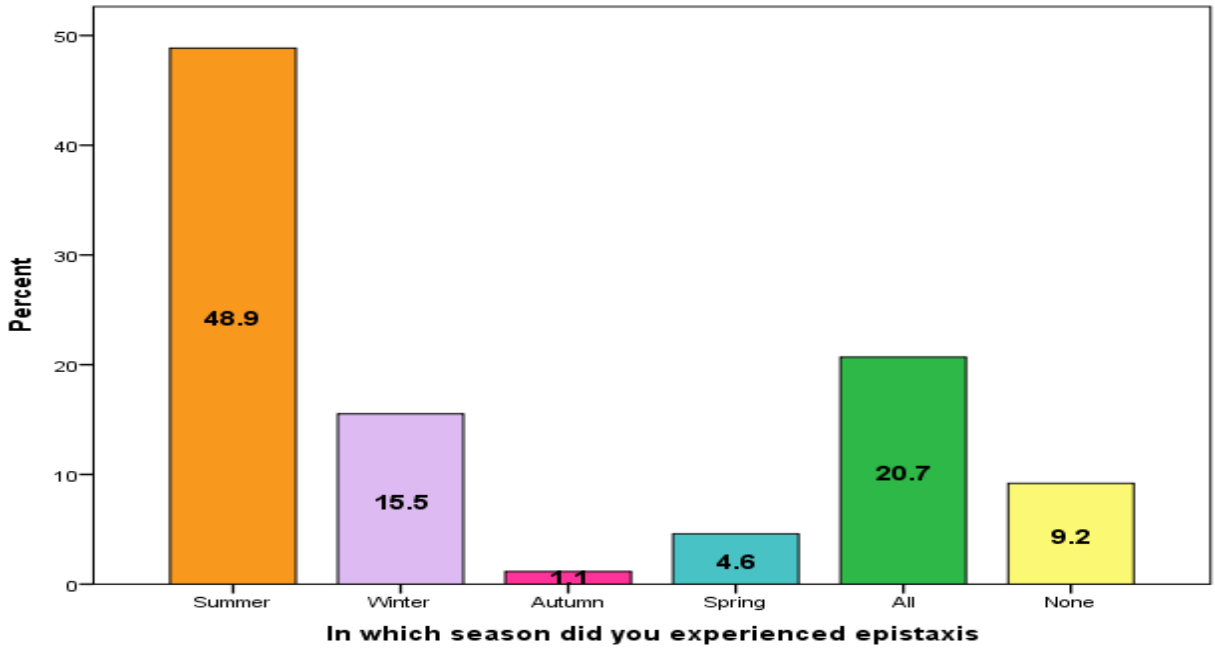


Figure (5).

And related to the weather most of the cases that experienced epistaxis had happen in summer which was 48.9 percent, and 20.7 0f cases had epistaxis in all seasons, also 15.5 0f cases experienced epistaxis in winter, but the autumn had lowest percent

Discussion:

The present study investigated the prevalence and risk factor of epistaxis among 329 participants in college of medicine and their age were between (18-67) and the prevalence of epistaxis among them was 52.9% (174) and (150) experienced it below the age of 18 which is 45.6% among all participants in previous studies on general population it revealed that The lifetime prevalence of epistaxis is about 60% in the general population Which was close to our findings.[13].

and we revealed that epistaxis has related to seasons which 48.9% of all participants experienced epistaxis in summer but previous studies it revealed that epistaxis at German ENT practices shows a marked seasonal variation with a low in the summer, an increase in fall and winter, and a peak in February, March, and April.[14]

And about chronic conditions only 1.2% of participants with hypertension experienced and in previous studies we had We found no definite association between epistaxis and hypertension.[15]

And 21% of participants had history of nasal trauma and in previous studies it was 15.6% of all participants which is close to our findings.[16]

And only 3% of participants that's experienced epistaxis had a history of nasal cannulation but in previous studies 10% developed epistaxis.[17]

In our research the main risk factor of epistaxis is trauma which is 21.6% but in previous studies is the second risk factor which is 16% that cause epistaxis that done between 2005 and 2006 in Brazil.[24]

And in this research most of the cases that experienced epistaxis which 35% have have history of epistaxis in their family but in other previous studies that done in emergency department of the Hacettepe University Hospital for Adults between October 2004 and may 2005 only 5% of cases that experienced epistaxis have had history in their family .[25]

Through our data collection the nose-pick habit is cause 17.9% of cases but through the research that done in 1 January 2015 until 31 December 2016 of record of patient admitted with the diagnosis epistaxis at Sanglah General Hospital, Denpasar only 2% of case is experienced epistaxis due to nose-pick habit.[26]

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