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"Evaluating the Aetiology, Diagnostic Approaches and Management Strategies for Epistaxis (Ru'af): A Review"

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Abstract

The Unani System of Medicine is one of the ancient systems of medicine based on the concept of equilibrium and balance of Akhlat (natural body humours). When these humours are normal in quantity, quality and they mixed well together prevail human remains healthy. The imbalance or irregular distribution causes disease. Epistaxis, or nosebleed, is a common condition that is often self-limiting or can be controlled with simple measures. However, in certain cases, it may not resolve without medical intervention, and in rare instances, it can pose a life-threatening risk. Epistaxis or nose bleeding is a very common condition. The bleeding can be unilateral or bilateral. According to Unani literature Ru'af refers to a type of brain haemorrhage where bleeding can vary in severity, from small droplets to large, frightening amounts. It occurs unexpectedly and is believed to be triggered by stress or tension affecting the veins and arteries in the brain. Approximately 50% of the population will experience a nosebleed at some point in their lives, but fewer than 10% of cases are severe enough to require medical attention. Some individuals may present with epistaxis as an emergency. It can occur at any age. Children typically experience mild anterior nosebleeds, whereas older adults tend to have more severe posterior nosebleeds. Males are more commonly affected than females, but after the age of 50, both sexes are affected equally.

Keywords

- Ruaf, Epistaxis, Anterior epistaxis, Posterior epistaxis, ENT emergencies, Prevalence

Introduction

Epistaxis, derived from the Greek term epistazein, is defined as bleeding from the nose. Determining the overall incidence of epistaxis in the general population is challenging, as most cases are unreported minor episodes that resolve on their own or are managed with basic first-aid[1]. Bleeding from the nose is called epistaxis (synonym: nose bleed). Epistaxis is a symptom and one should try to find its local and systemic causes[2]. It is challenging to accurately determine the frequency of epistaxis, but it is estimated that around 60% of people will experience a nosebleed at some point in their lives. Of those, approximately 6% will require medical intervention to address the issue.[3] Hypertension is a very common disease and causes epistaxis frequently in elderly patients.[5] Children typically experience mild anterior nosebleeds, whereas older adults often suffer from heavy posterior nosebleeds.

Epidemiology

The occurrence of nosebleeds (epistaxis) varies significantly across different age groups, showing a bimodal pattern with higher rates among children and young adults, as well as older adults between 45 and 65 years of age. Some anecdotal reports indicate that specific demographic groups, such as elderly women or young boys, may be more susceptible.[4]

Epistaxis or nosebleeds, has a lifetime incidence of roughly 60%, but only about 6% of cases require medical treatment. Of those, 10% can be severe and potentially life-threatening[8]

Aetiology

The causes of epistaxis, or nosebleeds, are classified into local and general factors but the factor is the nose's rich blood supply from dual vascular sources. Nasal mucosa blood vessels lie close to the surface, making them relatively exposed and more susceptible to damage. Bleeding typically results from injury to this mucosa and vessel walls. Occasionally, spontaneous blood vessel rupture can occur, such as during intense Valsalva manoeuvres like heavy lifting. Although rare, recurrent, unexplained, and unilateral epistaxis should prompt an assessment to rule out neoplastic causes.[6]

Local causes[7]	General causes
Nose **1.Trauma** ● Finger nail trauma, injuries of nose ● intranasal surgery ● fractures of middle third of face and base of skull ● hard-blowing of nose, violent sneeze **2.Infections** **Acute** ● Viral rhinitis ● Nasal diphtheria ● Acute/ Chronic sinusitis **All crust-forming diseases e.g.** ● Atrophic rhinitis, Rhinitis sicca ● Tuberculosis ● Syphilis ● Septal perforation ● Granulomatous lesion of the nose, e.g. rhinosporidiosis **3.Foreign bodies** **Non-living:** ● Any neglected foreign body, Rhinolith **Living:** ● Maggots, Leeches 4.**Neoplasms of nose and paranasal sinuses.** ● Benign: Haemangioma, papilloma. ● Malignant: Carcinoma or Sarcoma. **5.Atmospheric changes**. ● High altitudes ● Sudden decompression (Caisson disease)	**Cardiovascular system** ● Hypertension, arteriosclerosis sis, mitral stenosis, pregnancy (hypertension and hormonal). **Disorders of blood and blood vessels**. ● Aplastic anaemia ● Leukaemia ● Thrombocytopenic and vascular purpura ● Haemophilia ● Christmas disease ● Scurvy ● Vitamin K deficiency ● Hereditary haemorrhagic telangiectasia. **Liver disease**. Hepatic cirrhosis (deficiency of factor II, VII, IX and X). **Kidney disease**. Chronic nephritis **Drugs**. Excessive use of salicylates and other analgesics (as for joint pains or headaches), anticoagulant therapy (for heart disease). **Mediastinal compression**. Tumours of mediastinum (raised venous pressure in the nose). **Acute general infection**. Influenza, measles, chicken pox, whooping cough, rheumatic fever, infectious mononucleosis, typhoid, pneumonia, malaria and dengue fever **Vicarious menstruation** (epistaxis occurring at the time of menstruation). **Idiopathic** Many times, the cause of epistaxis is not clear.
6.**Deviated nasal septum**. **Nasopharynx** 1. Adenoiditis. 2.Juvenile angiofibroma. 3. Malignant tumours.	

Classification of Epistaxis-[4]

Adult or childhood Epistaxis- Epistaxis exhibits a distinct bimodal pattern in age of onset. It is common in childhood, decreases in frequency during early adulthood, and then peaks again in the sixth decade of life. While it can occur at any age, this age-related variation is marked enough to categorize epistaxis as either childhood (under 16 years) or adult (over 16 years).[4]

Primary Epistaxis - Approximately 70% to 80% of all epistaxis cases are idiopathic, occurring spontaneously without any identifiable trigger or cause. This type of bleeding is known as primary epistaxis**.**

Secondary Epistaxis - A small percentage of cases result from a specific and identifiable cause, such as trauma, surgery, or anticoagulant overdose, and these are classified as secondary epistaxis**.**

Anterior Epistaxis - Bleeding from a site in front of the piriform aperture plane typically originates from the anterior septum, though it can occasionally come from the vestibular skin or mucocutaneous junction. These cases are generally straightforward for clinicians to identify and manage.

Posterior Epistaxis - Bleeding from a vessel located behind the piriform aperture, within the nasal cavity, can be further classified into sources from the lateral wall, septum, or nasal floor. These types of bleeding are often the most challenging for clinicians to manage**.**

Management -

A. General Measures[2]

The following general measures are recommended for cases of epistaxis:

1. **Home management steps are given below**

Patients and their relatives are given following advises if bleeding occurs at home:

Prevention

a) Avoid frequent cleaning (obsessive-compulsive tendencies) of nose with tissue paper or finger.
b) Maintain proper nasal hydration with saline, gels and ointment.
c) Increase ambient humidity with a bedroom humidifier.

Treatment

a) Pinch the nose with thumb and index finger for about 5 minutes. it usually stops the bleeding from the Little's area, which is the most common site of bleeding.
b) Place a small piece of cotton soaked in decongestant nasal drops.
c) Lean back no further than 45°.
d) In Trotter's method, patient sits and leans little forward over a basin to spit any blood. Patient breathes quietly from the mouth.

e) Cold compresses over the nose results in reflex vasoconstriction. Drops of ice-cold water directly in the nose.
f) Report to doctor if bleeding does not stop.

2. Providing reassurance and mild sedation.
3. Positioning the patient: Seated with back support.
4. Monitoring blood loss: Recording both direct loss and loss through spitting and vomiting.
5. Monitoring of vital parameters: Pulse, temperature, blood pressure and respiration, hemodynamic stability (blood transfusion if needed) and airway compromise.
6. Intermittent Oxygen: Bilateral nasal packing increases pulmonary resistance due to Nasopulmonary reflex.
7. Antibiotics in cases of infection and nasal packing.

B. Nasal Cautery-[2]

Light anterior nasal packing should be done after cauterization.

1. Chemical cautery

2. Electrocautery (monopolar, bipolar or suction cautery)

3. Topical anaesthesia with 4% xylocaine and then local infiltration with xylocaine adrenaline are used before cauterization.

4. Endoscopic nasal cautery:

5. Complication: Avoid deep and bilateral cautery as they can cause septal perforation.

C. Nasal Packing-[5]

1. Anterior nasal packing

2. Posterior Nasal Packing:

Unani Concept:

In *Al-Qanoon fi'l-Tibb* (The Canon of Medicine) by Ibn Sina (Avicenna), epistaxis, or nosebleed, is discussed as "*Nazf al-Dam*" under the broader category of bleeding disorders. According to Unani medicine, epistaxis is attributed to an imbalance in the humors (*akhlaat*), particularly an excess of hot and moist humors (*dam* or blood) or corruption of blood quality.[9]

In *Al-Hawi* (The Comprehensive Book on Medicine) by *Al-Razi* (*Rhazes*) epistaxis, or nasal bleeding, is discussed in detail, reflecting the Unani approach to diagnosing and treating this condition. *Al-Razi*, like other Unani scholars, attributed epistaxis to imbalances in the body's humors (*akhlaat*) and emphasized understanding the underlying cause to ensure effective treatment.[10]

According to classical text book ***Mukhtarat Fit Tib***, epistaxis results from an excessive accumulation of ***Dam* (blood)** or an increase in the heat of blood (*Hararat-e-Dam*), leading to rupture of the vessels in the nasal region. This is attributed to factors such as excessive heat, dryness, or an injury.[11]

The concept of "***Ruaf***" in the classical Unani text *Tib-e-Akbar* by Akbar Arzani relates to the discipline of Unani medicine, focusing on well-being and the elimination of disease-causing elements. This work blends theoretical and practical aspects of health, emphasizing the balance of bodily humors (*akhlaat*) and the influence of environmental factors on health.[12]

Asbab (Causes): [9,10,11,13]

1. **Excess of Blood (*Imtila' al-Dam*):** Overabundance of blood due to dietary habits or lifestyle factors.
2. **Weakness of Blood Vessels (*Za'f al-Awaa'i*):** Fragility of nasal vessels, which can rupture easily.
3. **Corruption of Humors (*Fasad al-Akhlaat*):** Diseased or corrupted blood due to systemic conditions.
4. Excessive heat or dryness (affecting blood consistency and vessel integrity).
5. Overabundance of blood (*imtila)*, leading to pressure on the vessels.
6. Trauma to the nasal area or excessive sneezing.
7. Systemic imbalances in humoral composition, particularly an excess of hot or sanguineous humors (*dam*).
8. **Environmental Factors**: Exposure to hot weather or dry climates.
9. Ulcers or irritation in the nasal passages.
10. Febrile conditions where excessive heat increases blood pressure in nasal vessels.
11. **Dietary Factors**: Consumption of hot and dry foods (e.g., spices, fried foods).

***Aqsam* (Classification)[11,14]**

1. **Sanguineous epistaxis**: Bright red, profuse bleeding due to excess heat or blood.
2. **Bilious epistaxis**: Yellow-tinged blood, indicating heat and dryness in the body.
3. **Phlegmatic epistaxis**: Pale, thin bleeding, related to cold and moist humours.
4. **Melancholic epistaxis**: Dark or clotted blood, associated with thick black bile.

***Alāmāt* (Symptoms)[9,10,15]**

- Dizziness, headache.
- Sensation of fullness in the head.
- Warmth or heat sensation around the face or head.
- Sudden or gradual bleeding from one or both nostrils.

***Ilaj* (Therapeutic Management)**

Immediate management:[9,10,14]

I. Applying cold compresses to the forehead and neck to contract blood vessels.
II. Inhalation of astringent substances like rosewater or vinegar to stop bleeding.
III. Tilting the head forward to prevent blood from entering the throat.

IV. **Local Astringents (*Qabizat*):** Application of substances like alum or vinegar to control bleeding.

***Ilaj bi'l Ghidha* (Dietotherapy)[9,10,11,16]**

- **Cold temperament Foods & vegetables:**

  Barley water, cucumber, yogurt, pomegranate juice and sugarcane juice.

Avoid:

- Spicy, oily and heavy foods that increase heat.
- Inclusion of cooling foods, such as cucumber, melon and yogurt.
- Consume cooling and astringent foods like pomegranate or tamarind.
- Masoor with *Sumaq.*
- *Angoor kham.*
- Fresh paneer, *Bayḍ Maslūq/ Bayḍ Salīq* (boiled egg).
- Avoid tursh *Aghdhiya.*
- *Marufeen ghidha.*
- *Qabid* wa *Tursh ghidha* advice if *ruaf* is due to *ghalbe safra wa riqqat e dam.*
- *Qabidh* wa *tursh ghidha* like *Zarishk, Anar Daana* are adviced but some unani physician not adviced.
- *Ghidhā*' *Ghalīẓ* such as *hareesa, roghani rotiyan, murgha* ka dimag are adviced if epistaxis is due to *riqqat e dam.*

***Ilaj bi'l Dawa* (Pharmacotherapy)[9,16]**

- *Moadillate dam advia* wa *Aghdhiya.*
- *Habis advia (qabiz and barid).*
- *Qabidh advia* like *Usara e aqaqiya, Gul e Nar, Gul e Ward, Adas* or *Mazoo*.
- *Mubarrid advia* such as *Afiyoon, Kafoor, Bazroolbanj (Ajwain Khurasani,Jus (choona), Tukhm e Kahoo, Tukhm e Baid , Aab e Ghoora ,Khurma or Bartang*.
- *Maghziyat e advia -Daqaq e kundru.*
- *Advia bil khaas -Aab e Badrooj, aab e nana (podina*).
- *Usara of Safaid gaar leaves, Aab e Bartang*.
- *Advia kawiya* such as *Phitkari, Qalaqtar.*
- *Aab e Zulaal Gil e Multani* with *Sharbat e Nilofar.*
- *Sheer e Luabe Bahidana, Sheer e Unnab, Sheer e Maghze Tukhm e Kadu Sheerin, Sheer e Tukhm Kahu Muqashar, Sheera Tukhm Khurfa Siyah, Arq Gaozaban with Sharbat e Nilofar or Sharbat e Unnab.*
- *Kushta Faulad* with *Jawarish Anarain or Jawarish Mastagi.*

***Ilaj bi'l Tadbir* (Regimenal Therapy)[9,11,16,17]**

***Sa'ut* – Nasal drop**

- *Aabe ghoora, khurma, aqaqiya, Kafoor. Aabe kishneez, usaara e qaqila, Usaara e Badrooj* with *Kafoor.*
- *Zanjar, aabe badrooj, Kafoor, momayai khas,*
- *Zanjar mahlool* mixed with *Sirka* in case of profuse bleeding

Fatīla

- Soaked in *siyah dawat* and powdered *phitkari.*
- *Usaare barg baboona* & *qalaqtar, usaare kuras* & *kundru.*
- *Katan, Aab e Barf, Sirka.*

***Dimad* – Paste**

- Powder of *Gile Armani* mixed with *Sirka* apply on forehead.
- *Gil Multani* mixed with *luab e isabghol* apply on *yafookh.*
- *Kafoor, afiyoon, Ajwain Khurasani.*
- *Kham gach* mixed with *arq aas* and *Sirka* apply on forehead.
- *Aabe badrooj* with *Kafoor.*
- *Safoof* of *Gulab Khushk, Post* Anar, *Masoor, Kham chuna* mixed with *Arq e gulab* wa *Arq e Aas.*
- *Zimad* made up of *Lobiya* with *Sirka.*
- *Gul e Nar, Gulab, Masoor, Gil e Armani, Kafoor and afiyoon.*

***Qaṭūr* (Nasal drop)**

- *Namak tuam* mixed with *aabe sard.*
- *Kafoor* with *aabe kishneez sabz.*

Nashūq

- *Kafoor, Afiyoon, Ajwain Khurasani.*

Nafūkh

- *Safoof Phitkari* with *Nishasta.*
- *Safoof* made of Burnt *Mazoo* with *Sirka, Phitkari Misri, Phitkari Sokhta,Kundur.*

Niswar

- Burng rasot mixed with *Aab e Badrooj, Usaara e Gandna.*
- *Jund bedastar, Phitkari , Chuna , Dammul ikhwain ,Mazoo ,Kaghaz ki Rakh,* in the form of *safoof* mixed with *Roghan-e Zaitoon.*

***Tila* - Liniment**

- *Aabe barg baid, aabe barg angoor, aabe barg aas, gulab.*
- *Advia barida, advia qabidha, mukhaddir* mixed with *usaarat, Mubarrida.*

***Naṭūl* - Irrigation**

- *Aabe sard.*

***Fasd*-Venesection**

- *Sararoo* on same side of bleeding.

***Hijama bila Shart* -Cupping**

- On same side of *ruaf.*

***Muqi or Huqna* - Enema**

- Advised when blood reached to *Meda.*

Conclusion: Epistaxis, or nosebleed, is a common condition that is often self-limiting or can be controlled with simple measures. However, in certain cases, it may not resolve without medical intervention, and in rare instances, it can pose a life-threatening risk. According to Unani literature *Ru'af* refers to a type of brain hemorrhage where bleeding can vary in severity, from small droplets to large, frightening amounts. Nasal mucosa blood vessels lie close to the surface, making them relatively exposed and more susceptible to damage. Bleeding typically results from injury to this mucosa and vessel walls.

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