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Unani perspective of Nasal Polyps (*Bawaseer ul Anf*): A literary 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. According to Unani literature, *Bawaseer al Anf* is a growing of excess *lahem* (muscle) in the nasal cavity which is caused by the accumulation of *Ghaleez khilt* (thick humour) infiltrated from the anterior part of the brain produces nasal obstruction and discharge from the nose. The features of *Bawaseer al Anf* correspond with that of nasal polyp in modern medicine. Nasal polyp is a mass of the nasal cavity which are frequently a pedunculated, hypertrophied and oedematous mucosa from the mucous membranes of the nose and paranasal air sinuses. This review aims to highlight the concept of *Bawaseer al Anf* with special reference to nasal polyps and its management in the Unani system of medicine. Details and facts on nasal polyps were gathered from the Unani classical texts, published journals, PubMed, google scholar, research gate by using words like nasal polyps, *Bawaseer al Anf*, nasal discharge, nasal obstruction, nasal allergy, nasal voice and quality of life. Then the data were analyzed and summarized.

Keywords: *Bawaseerul Anf*, Nasal polyp, *Ghaleez khilt*, multi-factorial, imbalance, Unani.

Introduction

The Unani system of Medicine is one of the ancient systems of medicine founded by Hippocrates is based on the concept of equilibrium and balance of *Akhlat* (natural body humours) *Dumm* (blood), *Balgham* (phlegm), *Safra* (bile) and *Sauda* (black bile). When these humours are normal in quantity and quality and they mixed well together prevail human remains healthy. The imbalance or disproportionate and irregular distribution causes disease. According to Unani literature, *Bawaseer al Anf* is a growing of excess *lahem* in the nasal cavity^[1] which is caused by accumulation of *Ghaleez khilt* infiltrated from the anterior part of the brain^[2], produces nasal obstruction and discharge^[3] from the nose^[2]. The colour of the *Bawaseer al Anf* depend on the involving *maaddah* (disease producing substance) and it might be whitish in *Balghami* or reddish in *Dumm* or duskiness in *Sauda* respectively^[1]. The texture might be soft or hard in nature. The discharge from the nose may be of mucous or pus, and sometimes blood^[1]. Hence, the features of *Bawaseer al Anf* correspond with that of nasal polyp in modern medicine, and is defined as a mass of tissue projecting downwards from the mucosa of the nose into the nasal cavity which are frequently a pedunculated^[4], hypertrophied and oedematous mucosa from the mucous membranes of the nose and paranasal air sinuses^[5].

Methodology

Details and facts on Nasal polyps were gathered from the Unani classical texts, published journals, PubMed, google scholar, research gate by using words like Nasal polyps, *Bawaseer al Anf*, nasal discharge, nasal obstruction, nasal allergy, nasal voice and quality of life. Then the data were analyzed and summarized.

Literary Review

3.1 Historical Background

The history of nasal polyps goes back for a period of over 4,000 years to ancient Egypt. The earliest record of nasal polyps is found in Egyptian literature of approximately 2000 years. Hippocrates (460-370) is better known as the father of medicine and rhinology in approximately 5th century he also observed and documented medical afflictions related to

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nasal polyps, he referred to the nasal growths as polypus due to their resemblance of sea polyps and this name has persisted to this day. Not only Hippocrates other renowned physicians including Claudius, Galen, Paulus Hegineta and Febricius Hildenus were known to have treated nasal polyps in their time. In the early 1st century AD, Celsus noted that nasal polyps were affected by moist weather and warm seasons [6].

The theory that these nasal masses were the manifestation of systemic disease prevailed until the early 17th century when local trauma was hypothesized to contribute to the condition, and also it has suggested that the polyps occur secondary to obstruction of mucus gland. In 19th century was also fraught with controversies regarding the etiology of nasal polyps. In 1843 Frerichs and Bilroth proposed that the polyps were truly a hypertrophy of normal sinonasal mucosa. A systemic investigation of etiological association started in 20th century [6].

Paulus of Aegina was the first to identify the ethmoid cells with the origin of nasal polyps. However, the pathogenetic merry-go-round began with Ibn Sina (980-1037) the "Prince of Physicians," who wrote the Canon of Medicine. He likened polyps to hemorrhoids and advised the use of a ligature for their removal [6].

In 1933, Kern and Shenck proposed a relationship between allergy and nasal polyps.

They found that the incidence of nasal polyps was 25.9% in patients with allergic rhinitis compared with 3.9% non allergic population. They also noted that the ethmoid air cells were the most common target for the inflammatory response and the polyps frequently originated from this. Advances in immuno-histo-chemistry and immune- biology in the 1940s led to the first description of the predominance of eosinophil and lymphocyte population in polyps [6].

Nasal polyposis affects people for centuries. It was mentioned in the Hippocrates's notes from 4th century BC. Occurrence of nasal polyposis was confirmed by 3rd century BC., and the Laryngologists estimate polyposis on the grounds of rhinoscopy with 4 degree scale was proposed in 1993 by Johansen [7].

Ibn Sina (980-1037 A.D) in "Al Qanoon Fit Tibb" an encyclopedia of medicine, served as a standard text book of medicine in Europe till 17th century A.D., described the causative factors and clinical features of *Bawaseer al Anf*.

Probably, Hippocrates (460- 377 BC) was the first person who defined *Bawaseer al Anf* is a sac of phlegm that causes nasal obstruction and derange the sense of smell [6]. The colour of the *Bawaseer al Anf* may be whitish or reddish or duskiness [1]. Texture may be soft or hard in nature. The discharge may be of mucous or pus, and sometimes blood [8].

Nasal polypi are non-neoplastic masses of oedematous nasal or sinus mucosa. [8] and it is one of the chronic severe airway diseases. It is known as a non-neoplastic inflammatory process of nasal mucosa that eventually leads to the outgrowth of abnormal masses inside the mucosa of nasal cavity and paranasal sinuses. The polyps are most frequently detected in middle meatus and ethmoid region. They are usually bilateral and multiplex with soft, transparent, the hallmark cells in sinonasal polyposis [9].

Nasal polyp is defined as a mass of tissue projecting downwards from the mucous membranes of the nose and para nasal air sinuses [10]. It is a pedunculated, hypertrophied

and edematous mucosa [11]. Nasal polyps are soft, painless, noncancerous growths on the lining of the nasal passages or sinuses. They hang down like teardrops or grapes [12]. Usually these are thin and pearly white in color, freely movable and non-tender.

Nasal polyps are benign inflammatory and hyperplastic outgrowths of the sinonasal mucosa. Their most common manifestation is in patients with chronic rhinosinusitis (CRS). For this reason, the term chronic rhinosinusitis with nasal polyposis (CRS_{NP}) is frequently used when discussing the topic of nasal polyps [13].

Development of NP alter comprise of nasal mucosa by eosinophilia, edema, alteration of epithelial growth and development of new gland formation. So nasal polyp is not edema of normal nasal mucosa but a new inflammatory development result of inflammatory mediators [14].

The pathogenesis of NP is still unclear, but the disease is believed to be a manifestation of complex inflammatory reactions. Growth of these polyps leads to obstruction of the sinonasal passages, requiring repeated courses of antibiotics to treat underlying infections and steroid therapy to reduce polyp load [15].

3.2 Pathophysiology

'*Bawaseerul Anf*' has been described as a disease in detail with signs and symptoms along with treatment in various Unani texts under the chapter of '*Bawaseer*'. According to Unani physicians, *Bawaseer al Anf* is a condition with nasal obstruction and discharge from the nose [1].

Nasal mucosa, particularly in the region of middle meatus and turbinate becomes oedematous due to collection of extracellular fluid causing polypoidal change. Polypi which are sessile in the beginning become pedunculated due to gravity and the excessive sneezing [8].

In early stages, surface of nasal polypi is covered by ciliated columnar epithelium like that of normal nasal mucosa but later it undergoes a metaplastic change to transitional and squamous type on exposure to atmospheric irritation. Submucosa shows large intercellular spaces filled with serous fluid. There is also infiltration with eosinophils and round cells [8].

According to Unani system of medicine the genesis of *Bawaseer al Anf* is related with extrinsic and intrinsic causative factors. One or the other of these causative factors causes *sue mizaj* (maltemperament) in the mucous membrane of the nose and paranasal sinuses. Thus the mucous membrane gets inflamed and produces secretions, which may be watery (*raqeeq*) or viscid (*ghaleez*), reddish (*dumm*) and benign, depends upon the causative factors [1].

Usually it is believed that the effects of cold either externally or internally will increase coldness in the brain that leads to temperamental disturbance within the brain, which causes the coldness in the nose and paranasal sinuses too. As a result, an excessive amount of thick fluid accumulated inside the cavities of nose and paranasal sinus, which properly may not be able to metabolized as a consequence of this, some amount of fluid still remain inside causing derangement of the local temperament (*sue mizaj dimagh*) of the brain, which may causes weaken the *quwat e Dafia* (expelling power) and strengthen the *Quwat e Maasika* (retentive power).

3.3 Etiology

According to the doctrine of Unani medicine, any state that hampers the equilibrium of *Akhlat* either qualitatively or quantitatively may cause disease.

Bawaseer al Anf is a multi factorial disease occurs as a result of the involvement of various factors which affects the individual either intrinsically or extrinsically and sometimes both.

According to Ibn Sina, accumulation of *Ghaleez khilt* is the main causative factor in the development of *Bawaseer al Anf*. The *Ghaleez khilt* can be produced by either extrinsic or intrinsic or both factors. As extrinsic factors (Asbabe kharija), Sardi mizaj, uncovered head, exposure to cold, cold water hammam, working in cold environment, massaging the head with cold oils or usage of cold hair oils, sleeping immediately after food, consumption of cold things like spinach, water melon, *Isabghol* etc., bathing after exercise followed by improper wrapping, or strenuous psychic or physical activity^[16].

Also due to *Sue mizaj* of brain^[17], Zoa'fe dimagh, seasonal variation^[18] and predisposing factors: ^[19] heredity/ genetic predisposition, chronic rhinosinusitis, chronic allergic rhinitis^[11], idiopathic: cystic fibrosis (rarely), irritation, asthma, infection, and aspirin sensitivity and 'Samter triad' (asthma, NSAID sensitivity and nasal polyps)^[8].

3.4 Clinical features

Clinical features may vary from individual to individual in terms of severity, frequency, duration and the nature of aetiologies involved.

Nasal polyps can be asymptomatic or large enough to protrude from the nose. Patients typically complain of progressive nasal obstruction, mucoid postnasal drip, and rhinorrhea. Nasal obstruction can result in anosmia, a sore throat derived from mouth breathing, and a characteristic hyponasal voice. Upper respiratory infection commonly results in exacerbation of symptoms, and recurrent sinusitis is experienced when polyps obstruct the normal sinus outflow tracts^[20].

The main presenting symptom of NP is nasal obstruction which is constant but can vary depending on the site and size of the polyps. Sufferers will also frequently complain of watery rhinorrhea and postnasal drip. Anosmia or hyposmia with an ensuing alteration in taste are also characteristic symptoms of NP. Anterior and posterior rhinoscopy reveals single or multiple pale, grey polypoid masses arising most frequently from the middle meatus and prolapsing into the nasal cavity^[21]. These symptoms decrease the quality of life (QOL) of affected individuals^[13].

And also, foul smelling nasal discharge^[17] Nasal stuffiness leading to total nasal obstruction, partial or total loss of sense of smell, frontal headache or heaviness, snoring, sneezing and watery nasal discharge, mouth breathing and mass protruding from the nostril^[8].

3.5 Types

Primarily three types of *Bawaseer al Anf* have been defined throughout the Unani literature based on the involvement of the *maaddah* (disease producing matters) as^[1]:

Balghami: white in colour, soft to touch with no pain. Easy to treat^[1, 17].

Damvi: mass may be red in colour. most of the time foul smelling pus discharge with severe pain. This variety is difficult to treat^[1, 17].

Sartaani: the mass is dusky in colour, damage the structure of the nose and painful when it pulled. Very bad structure and that has penetrated deeply^[1, 2, 17].

Nasal polyps are divided into two main varieties as^[8]:

1. Bilateral ethmoidal polypi and
2. Antrochoanal polyp.

According to the severity of the condition^[7]:

Mild
Moderate
Severe

Table 1: Differences between antrochoanal and ethmoidal polyp

	Antrochoanal polyp	Ethmoidal polypi
Age	Common in children	Common in adults
Aetiolo gy	Infection	Allergy or multifactorial
Number	Solitary	Multiple
Laterali ty	Unilateral	Bilateral
Origin	Maxillary sinus near the ostium	Ethmoidal sinuses, uncinate process, middle turbinate and middle meatus
Growth	Grows backwards to the choana; may hang down behind the soft palate	Mostly grow anteriorly and may present at the nares
Size and shape	Trilobed with antral, nasal and choanal parts.	Usually small and grape-like masses
	Choanal part may protrude through the choana and fill the nasopharynx obstructing both sides	
Recurr e nce	Uncommon, if removed completely	Common
Treatme nt	Polypectomy; endoscopic removal or Caldwell–Luc operation if recurrent	Polypectomy, endoscopic surgery or ethmoidectomy

3.6 Diagnosis^[8]

A diagnosis is usually made based on the symptoms and an examination of the nose. Polyp may be visible with the aid of a simple lighted instrument.

Diagnosis can be easily made on clinical examination. Computed tomography (CT) scan of paranasal sinuses is

essential to exclude the bony erosion and expansion suggestive of neoplasia.

Simple nasal polypi may sometimes be associated with malignancy underneath, especially in people above 40 years and this must be excluded by histological examination of the suspected tissue. CT scan also helps to plan surgery.

X-rays of paranasal sinuses may show opacity of the involved antrum. X-ray (lateral view), soft tissue nasopharynx, reveals a globular swelling in the postnasal space.

3.7 Differential Diagnosis

The symptoms and signs of *Bawaseer al Anf* frequently overlap with those of other forms of various anatomic abnormalities of the upper airway such as:

Arbiyan- is a soft excess *lahem* in the pathway of the nose^[17] Sartaan- is a mass which is hard to touch on examination^[17]

A blob of mucus often looks like a polypi but it would disappear on blowing the nose^[8]

Hypertrophied middle turbinate^{Maqbool} is differentiated by its pink appearance and hard feel of bone on probe testing^[8]

Angiofibroma^[11, 8] has history of profuse recurrent epistaxis. It is firm in consistency and easily bleeds on probing^[8].

Neoplasm may be differentiated by their fleshy pink appearance, friable nature and their tendency to bleed^[8]

Rhinoporioidosis^[11].

3.8 Complications Associated With *Bawaseer Al Anf*

When *Bawaseer al Anf* is untreated or inadequately treated, symptoms may become chronic and contribute to conditions such as, nosebleeds, infection- lower resistance to sinus infections, obstructive sleep apnea, orbital Cellulitis, visual impairment or even blindness, meningitis and recurrent after surgery

3.9 Preventive measures

Avoid day time sleep and sleep on back^[18] and / or sleep immediately following meal. Devoid warmth of the body Precaution from oily, *Ghaleez lesdaar* and delayed digestible foods, meat, alcohol, onion, garlic, tea, akhrot, pista etc. sour things like milk, curd along with *Ghaleez* and *sageel ghiza*,^[18] but if they feel weakness in the body, they can use chinks with meats (ratab gosht), curd^[18]

Reduce the quantity of food and drink^[18]

Try to avoid exposure to sunlight, hot or cold air and water^[18]

The mainstay of treatment of *Bawaseer al Anf* involves identification of avoidance of provoking allergens where possible and the use of oral immunomodulators. Although the concept of allergen avoidance seems straightforward and obvious, in practice it is often difficult to undertake. However, it is now possible to document environmental allergen exposures with a great degree of precision.

Allergen avoidance measures such as:

No excessive use of seasonal fruits and *khushboodar* snuff (extreme flavors)^[18]

Use of an air conditioner to prevent air born pollen from entering the home Initial stage: adopting symptomatic measures:

Try to expel the *maaddah*^[18] by *Inkibab* (steam inhalation) with *Sambalu*, *Ustakhuddoos*, *Reehan*, *Fil Fil e siya* and *Kishneeze*,^[17] and apply *fateela* (medicated thread) in the nose to divert the *maaddah* from throat or chest^[18]

Fasd (venesection) is advisable if *Damvi khilt* is involved^[17, 18] followed by *mushilat* (purgatives)^[17].

Lateef ghiza (easily digestible foods) like *maushaeer*^[17]

Munzijat (concoctive)^[17]

Hammam (bath) by luke warm water^[17] is advisable before prescribing *munzijat* Snuffing by luke warm *shoneez*, *Sambalu* and *zeera*^[17].

Should not use any medicines to arrest sneezing, this may interfere with the mature of the *maaddah*, leading to collection of fuzlat (waste) in the brain^[18]

Proper maintenance of six essential factors “*Asbaab e Sitt e Zarooriya*”.

3.10 Management of *Bawaseer al Anf*

Effective treatment of *Bawaseer al Anf* depends upon accurate clinical diagnosis and assessment of the patient's dominant symptoms. Although avoidance of interventions can reduce extrinsic and intrinsic factors they often fail to produce clinically significant improvement as a result complete therapy is frequently required.

According to Unani system of medicine, *Bawaseer al Anf* can be treated by *Dawa* (drugs), *amal-e-kai* (cauterization) and *Ilaaj bil yad* (surgery)^[2]. So, as a line of treatment, it is advisable to adapt the followings.

Izale sabab (Elimination of the cause) Correction of *Sue mizaj* (mal temperament) *Ta'deele mizaj* (temperamental balance) *Tadabeer-* *Inkibab* (steam inhalation), *su'oot* (errhine), *takmeed* (fomentation), *fasd* (venesection) and use of suitable oils as *Qutoor* (nasal drops).

Ghiza (diet) - dietary precaution *Muqawwiyyate dimagh wa me'dda* (strengthen the brain and stomach) *Munzij va Mushil Balgham va Sauda Tabreed* (cooling)

If there is no response by using drugs with maintaining precautions, or there is recurrent growth of mass, it is advisable to go for *Ilaaj bil yad* (surgery), i.e. cut the mass by a fine knife and then peel out the rest. After removal of the mass, wash the nose by *Sirka* mixed with water and check for nasal congestion. If there is no congestion, it indicates that the mass is removed completely.

No single surgical technique has proved to be entirely curative and patients often undergo repeat procedures despite also receiving long-term medical therapy. Recurrence is common with severe disease recurring in around 5%–10% patients^[21].

Conclusion

The condition *Bawaseer al Anf* is multi-factorial disease, but most often it is due to the alteration in *akhlat*. Despite the use of numerous newer therapeutic regimes, in western medicine, nasal polyp has remained a challenge because of its recurrence. Nearly all the classical texts of Unani medicine claims for successfully treating this condition without any unwanted effects. The treatment is based on *munzij va mushil* therapy along with different types of effective local applications.

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