ORIGINAL ARTICLE

Amrad-i-Tarkib (Structural Diseases): Pathological perspectives in Unani/Persian System of Medicine

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Abstract
Amrad-i-Tarkib refers to the disorders affecting the shape, size, number, and position of organs. This classification is rooted in Unani and Persian medical traditions, which categorize diseases based on their structural abnormalities and their impact on physiological functions. This concept is essential in both Unani and contemporary medical practices, highlighting the importance of understanding how structural changes can lead to various health issues.
The study is primarily theoretical and interpretive, relying heavily on historical texts from Unani and Persian medicine. *Asbab-o-Alamat* related to the *Amrad-i-Tarkib* were extracted through a comprehensive review of selected textbooks, primarily focused on *Kamil al-Sinaa al-Tibbiyah* and Electronic databases, such as PubMed, Scopus, and Research Gate, were systematically searched for articles published in English, utilizing keywords pertinent to Structural Disease.
The paper aims to bridge the gap between traditional and contemporary medical perspectives, emphasizing the relevance of historical knowledge in understanding structural diseases today. This synthesis of ideas aims to refine diagnostic and therapeutic approaches in contemporary medical practice.

Key words: *Amrad-i-Tarkib*, *Amrad-i-Shakl*, *Amrad-i-Miqdar*, Unani/Persian Pathology, Aneurysm, Carotid Stenosis, Limb Deformities

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Introduction

Disease broadly refers to any condition that disrupts normal physiological function and homeostasis. In Unani/Persian medicine, the human body is composed of two types of organs: simple and compound (Karimi, and Kasiri, 2025, pp. 155–164). Accordingly, diseases are categorized as *Amrad-i-Mufradah* (simple diseases) and *Amrad-i-Murakkabah* (complex diseases). Simple diseases include disorders of *Suʾ-i-Mizaj* (dystemperament) and *Suʾ-i-Tarkib* (structural disorders), while classical authorities further recognize diseases arising from loss of continuity (Avicenna, 1993, pp. 120-122).

Among these, *Amrad-i-Tarkib* represent structural abnormalities affecting compound organs, involving alterations in shape, size, number, or position. When such disorders involve the *Aʿdà-i-Aliya* (principal organs), they are described as *Marz-e-Aali*, reflecting their profound impact on vital bodily functions (Majusi,1889, pp. 20-21). Although structural pathology is well established in modern medicine, the conceptual framework of *Amrad-i-Tarkib* remains underexplored in contemporary scholarly discourse, particularly in terms of its systematic correlation with modern clinical and pathological classifications.

This review's novelty is in its comprehensive synthesis of classical Unani/Persian descriptions of *Amrad-i-Tarkib* with modern biomedical concepts of structural disease. Unlike earlier studies that examine these disorders separately or only in historical contexts, this review systematically organizes classical classifications, aligns them with current pathological concepts, and emphasizes their potential relevance for modern diagnostic reasoning and integrative clinical practice. By doing so, it aims to provide a structured interpretive framework that connects traditional medical theory with modern pathology, thereby supporting future interdisciplinary research and evidence-based integration of Unani/Persian medicine into contemporary healthcare systems.

Materials and Methods

The methodology used in this review paper on structural disease involved thoroughly examining relevant literature from Unani/Persian and modern medical perspectives. Alamat and the Asbab related to the *Amrad-i-Tarkib* were extracted through a comprehensive review of selected textbooks, including *Kamil al-Sinaa al-Tibbiyah*, *Al-Qanun fi al-Tibb*, *Kitab Al Mukhtarat Fit Tibb*, and *Zakhira Khurzam Shahi*. Electronic databases such as PubMed, Scopus, Embase, and ResearchGate were systematically searched for articles published in English, using keywords related to Structural Disease, including its types, subtypes, and causes. Additionally, Unani/Persian texts and manuscripts were carefully reviewed to gain insights into the ancient perspective on *Amrad-i-Tarkib*. The collected data were then narratively synthesized, highlighting the similarities and differences between Unani/Persian and modern medical approaches. This methodology aimed to provide a comprehensive overview of the current knowledge regarding *Amrad-i-Tarkib* and to identify opportunities for future research and collaboration between Unani and modern medicine.

Understanding *Amraz-i-Tarkib*

Amrad-i-Tarkib (structural diseases) occurring in compound organs. Types of *Amrad-i-Tarkib* / *Amrad-i-Aliya* (Structural Diseases) See Table1.

1- *Amrad-i-Khilqat* (Diseases of malformations)

It is a disease where the original shape of the organ is changed to different forms. Its possible English equivalent is constitutional diseases/malformations/organic diseases. There are four types of *Amrad-i-Khilqat*.

Table 1: Types and Subtypes of *Amrad-i-Tarkib*

	Amrad-i-Tarkib	English Equivalent	Definition	Sub type
1	*Amrad-i-Khilqat*	Constitutional diseases/ malformations / organic diseases	A disease in which the riginal shape of the organ is changed to different forms	• *Amrad-i-Shakl* (morphological alterations) • *Amrad-i-Majari* (luminal alterations) • *Amrad-i-Aw'iya* (cavitational alterations) • *Amrad-i-Safa'ih* (surface abnormalities)
2	*Amrad-i-Miqdar*	Voluminous disorders	A disease deals with the pathological changes in the size/ weight of body viscera/organs. All kinds of hypertrophies or atrophies come under this category.	• *Tazāyud al-Miqdār* (Abnormal increase in Size) • *Tanaqquṣ al-Miqdār* (Abnormal decrease in Size)
3	*Amrad-i-'Adad*	Numerary disorders	concerned with the Congenital or acquired numerical abnormality of viscera or body organs.	• *Zyadti Adad* • *Ṭab'ī Ziyādah* (Natural Increase) • *Ghayr Ṭab'ī Ziyādah* (Unnatural Increase) • *Nuqṣān Adad* • *Ṭab'ī Nuqṣān* (Natural Decrease) • *Ghayr Ṭab'ī Nuqṣān* (Unnatural decrease)
4	*Amrad-i-Wad'*	Positional and proximity disorders	The defects in position and proximity of body organs. The defects in position include total or partial shifting of any organ. It also includes the defects in voluntary and involuntary movements of body organs.	• *Maradh al-Waḍ'* (Disease of Position) • *Maradh al-Mushārakah* (Disease of Coordination)

A. *Amrad-i-Shakl* (Diseases of Morphological alterations)

According to Ali Ibne Abbas Majusi, the greatest Iranian physician (Sarveravan, and Amalsaleh, 2013, pp. 87-89), *Amrad-i-Shakl* refers to conditions where the physical shape of a body part becomes abnormal (Majusi, 1889, pp. 20-21).

Amrad-i-Shakl occurs when an organ's physical form (geometry or structure) deviates from its natural or healthy shape, leading to a disturbance in function (see Table 2). The shape changes from its normal course, causing a functional disturbance; for example, a straight organ becomes curved and a curved one straight, or a square organ becomes round, or a round one becomes square. According to *Zakhira Khurzam Shahi*, *Amrad-i-Shakl* are conditions in which both the structure and function of an organ are affected. These diseases result in physical deformities that interfere with the organ's natural operation—an example being *Raas Musfat* (flattened skull).

This concept is crucial in Unani/Persian medicine because it links structural deformity to functional loss, offering a more comprehensive view of how physical changes can lead to disease (Jurjani, 2010, p. 11).

Table 2: *Amrad-i-Su'i-Tarkib* with integration of Pathology

Morphological Disorders	Unani View	Modern Term	Aetiology	Functional Impact
Congenital Skull Shape Deformities	Flattening of the anterior or posterior skull	Plagiocephaly, Brachycephaly	Positional pressure on the infant's head during development, premature suture fusion (craniosynostosis)	Affects brain development, Vision, and may require surgical correction
Valvular Deformation	Deformity in a curved or straight organ, causing dysfunction	Mitral Valve Prolapse (MVP)	Myxomatous degeneration of the mitral valve leaflet	Blood leaks backward into the atrium (regurgitation), causing fatigue and palpitations
Gastrointestinal Structural Deformities	Round stomach	Megagastria / Volvulus	Weak ligaments, nerve issues	impaired digestion, Obstruction, pain
Abnormal Pupil Shape	Absence of flatness in the pupil	Coloboma	Congenital defect in the closure of the optic fissure	Vision loss, sensitivity to light, and depth perception issues
Limb Deformities	Curved to straight or vice versa	Clubfoot / Genu Varum	Intrauterine malposition, genetic factors	Difficulty in walking, gait abnormalities

Causes of *Amrāz-e-Shakl*:

I. Natural Causes (Internal): Defect in *Quwwat-e-Musawwira* (formative faculty): This *Quwat* is responsible for giving shape to organs during embryogenesis.

II. External Causes: Birth trauma, such as injury during labour, Drug side effects, or teratogenic exposure in utero, injuries, surgical complications, or diseases affecting the organ's framework.

There are three categories of causes for *Amrāz-e-Shakl* (Majusi,1889, pp. 32-36; Avicenna, 1993, pp. 173-174; Baghdadi, 2005, pp. 136-138):

i. Prenatal Causes: These deformities occur before birth, primarily due to pathological changes in the uterine environment. There are four key etiological factors:

(a) Excess of formative matter: An overabundance of embryonic material that overwhelms the Quwwate Musawwira (formative Faculty; one of the reproductive faculties which gives images to each organ of the body in resemblance to the species or race) (Saltanat, et al., 2024, pp. 47-62).

(b) Thinness or dilution of the formative substances: When the embryonic material becomes too thin or diluted, the vital faculty cannot effectively act upon it to shape the fetus.

(c) Deficiency of formative substance: An insufficient quantity of embryonic material that is incapable of proper formation or differentiation.

(d) Weakness of the *Quwwat-e-Mughaiyarah*: A congenital deficiency or weakness in the innate formative energy, known as quwwat mughirrah awliya, responsible for shaping the body.

ii. Perinatal Causes: These causes arise during childbirth:

(a) Abnormal fetal presentation: Delivery occurs in a non-physiological position (e.g., breech or transverse).

(b) Incorrect handling of the fetus: This refers to improper obstetric manipulation or poor handling during delivery.

(c) Injury or malpositioning of fetal limbs: Deformity may result from trauma or incorrect movement while attempting to reposition the fetus.

(d) Fracture or compression injury: Damage is due to pressure or fractures that are not properly treated or aligned by the attending physician.

iii. Postnatal Causes: They are deformities Developing after birth

(a) *Mādah ḥārrāh fāsidah* (infected hot humors): This refers to conditions such as *jadhām* (leprosy).

(b) Deficiency of vital substances: They are conditions such as *Sil* (tuberculosis), in which tissue loss leads to structural deformities.

(c) Neuromuscular disorders: This refers to conditions such as Istirkha (flaccidity) or Tashannuj (spasticity), which impair muscular control and joint alignment and may cause deformities over time.

B. *Amrad-i-Majari* (luminal alterations)

It is a type of *Amrad-i-Khilqat* specific to tubular structures such as vessels, ducts, etc. In these conditions, the lumen may become dilated, narrowed, or completely obstructed. Ali Ibne Abbas Majusi divided *Amrad-i-Majari* (luminal alterations) into three main categories:

I. Anatomical Classification: Diseases of the channels are divided into two types:

i. *Ittisā ʻ-e-Majār* (Dilation of the Channels): This refers to widening or expansion of a channel beyond its normal diameter, potentially leading to impaired function.

- Varicose Veins: Dilated superficial veins caused by valve failure, leading to pooling of blood in the lower extremities. They are commonly seen in people who stand for long periods.

- *Ittisa ʻal-Shu ʻab* (Bronchiectasis): Bronchiectasis is the chronic dilation of the bronchi due to repeated infections or inflammatory conditions, such as cystic fibrosis.

- Aneurysm: It is the localized dilatation of an artery (commonly the aorta) due to weakening of its wall; it can be life-threatening if ruptured.

- Megacolon (e.g., in Hirschsprung's disease or Chagas disease): It is a massively dilated colon due to nerve supply dysfunction.

Causes of *Ittisā ʻ-e-Majāri* (Baghdadi, 2005, pp. 136-138):

(a) Strong *Quwwat Dafiʻa* (Expulsive Force): Forceful expulsion or excessive flow stretches the channels.

(b) Weakness of *Quwwat Masika* (Retentive Faculty): Inability to hold or control substances leads to relaxation and expansion.

(c) *Ghalaba Harārat wa Rutoobat* (Dominance of Heat and Moisture): These soften tissues, causing relaxation and dilatation.

(d) Use of *Adwiyah Muftitah* (Expansive or Opening Medications): These pharmacological agents dilate ducts and passageways.

(e) The other underlying cause may be the overexertion or trauma affecting the walls of the channel.

ii. *Taḍyīq-e-Majāri* (Narrowing of the Channels): This refers to abnormal narrowing of a passage, which hinders the flow of fluids, gases, or food.

- Asthma: Bronchial constriction can be due to hyper-responsiveness and inflammation of airways, leading to wheezing and breathlessness.
- *Intibaq al-Mari* (Oesophageal Spasm): Abnormal closure of the oesophagus. In this disease, the lumen of the oesophagus becomes narrow, thereby causing difficulty in the passage of liquid diets. It is a type of psychogenic spasm of the oesophageal muscles.
- Pyloric Stenosis: Narrowing of the pyloric sphincter in infants, causing projectile vomiting and feeding difficulties.
- Carotid Artery Stenosis: Narrowing due to atherosclerosis increases the risk of stroke.
- Pulmonary Embolism: A blood clot blocks an artery in the lungs, impairing oxygenation and potentially becoming fatal.
- Renal Calculi: Stones obstruct the urinary tract, causing severe pain and hydronephrosis.

Causes of *Taḍyīq-e-Majāri* (Ibn Rushed, 1987, pp. 97-99; Baghdadi, 2005, pp. 136-138).

(a) Intrinsic causes of narrowing (from within the channels):

- Vigour of *Quwwat Masika* (Retentive faculty): This occurs when the body's ability to retain substances is too strong.
- Weakness of *Quwwat Dafi'a* (Expulsive faculty): The body cannot effectively expel waste or secretions.
- Excessive *Burūdat* (Coldness): Internal temperature decreases, reducing fluid mobility.
- *Qabz* (Constipation): *Qabz* is the obstruction of the proper flow.
- *Ghalaba-e-Yubūsat* (Dominance of dryness): It leads to stiffening or narrowing of ducts.
- External pressure on the organ: It physically compresses the channel.
- *Fasād-e-Shakl* (Deformity of the organ): This refers to structural abnormalities.
- *Waram* (Inflammation or swelling): It can constrict or block passageways (Razi, 2013, p. 209).

(b) Causes of Adhesion or Fusion of Channels:

- Post-injury scarring: After wounds or ulcers within the channels, healing can lead to fibrous adhesions, causing partial or complete occlusion.

(c) Causes of Obstruction of Channels:

- *Laisdār Khilt* (Viscous phlegm): Thick secretions clog the passage.
- Stone in the channels and *Injimād-i-Dam* (Blood coagulation).
- Excessive tissue growths e.g. *Zā'id Gosht* (Fleshy overgrowths) such as *Nasal tumor* (Hossein Hashemi, and Golshani, 2023, pp. 301-306), *Thālīl* (Wartsand Masa (Callosities or fibrous masses), etc.

II. Based on the Physiological Function of the Organ:

(a) When the affected duct serves a general function for the entire body, its dysfunction can precipitate a broad spectrum of diseases, affecting various systems.

(b) If the duct is specific to a particular organ only, its malfunction usually causes a single, localized disease related to that organ.

III. Based on Pathology:

(a) *Saddah ba sabab al-Waram*: When inflammation or swelling causes a blockage, two major problems arise: the duct loses its ability to produce or carry the requisite substance (e.g., blood or energy), and it simultaneously loses its capacity to deliver or distribute that substance. For instance, if a hepatic vein, such as the vena cava, becomes obstructed due to swelling, two consequences follow: first, blood production is compromised owing to impaired hepatic function; second, systemic blood distribution fails.

(b) *Saddah ba sabab Khilṭ Lazij*: If sticky bodily fluids cause the blockage, this does not destroy the duct's power completely but only clogs it temporarily, e.g., thrombosis.

Tasaddud al-Majāri (Complete obstruction of the ducts): This occurs when a duct becomes completely blocked, preventing any flow. In the case of *Yaraqān* (jaundice), e.g., the bile duct is blocked (Qarshi, 2010, pp. 76-79).

IV. *Amrad-i-Aw'iya* (Cavitational alterations): According to Ali Ibne Abbas Majusi, cavity diseases affect the natural hollow spaces or depressions within organs. These parts of the body should have some emptiness or concavity as part of their normal structure. When these spaces are filled abnormally due to swelling, fluid accumulation, or mass growth, they are considered diseases of the cavities. According to Unani, a defect in an organ's jauf (cavity) can occur in four ways (Avicenna, 1993, pp. 120–122).

V. Enlargement or Expansion of the Cavity: The internal space (cavity) of an organ becomes larger, wider, or overstretched; in hydrocele, e.g., the scrotal sac becomes abnormally distended and enlarged.

VI. Constriction or Shrinking of the Cavity: The cavity becomes narrower or smaller than normal. In *Sighar-e-Mi'dah* (gastric atrophy), for instance, the stomach shrinks and its cavity becomes tight, and in *Sar'* (epilepsy), the ventricles of the brain become constricted, affecting brain function.

VII. Cavity becomes *Mumtali* (Filling): The cavity becomes filled and partially or completely blocked, preventing normal function; for example, in *Saktah* (stroke), the noble ventricles of the brain become obstructed, resulting in the complete loss of sensation and movement due to disruption of the vital faculty.

VIII. Vacuity of the Cavity: The cavity becomes abnormally empty, leading to dysfunction. In *Farah Muhlik* (lethal joy, a state of extreme emotional shock), for instance, the ventricle of the heart may become empty, which is life-threatening (Baghdadi, 2005, pp. 127-129).

C. *Amrad-i-Safa'ih* (surface abnormalities)

A type of *Amrad-i-Khilqat* concerning alterations in the surface appearance of viscera/organs cause compromised physiological functions. There are two main types:

I. *Amrāḍ-i-Malāsat*: This occurs when a surface that is usually rough or folded becomes abnormally smooth. This often happens due to weakening or degeneration of its structure. This is illustrated with a few examples, such as in chronic atrophic gastritis, where the gastric mucosa loses its normal rugae (folds), becoming smooth, thin, and pale. This affects digestive function due to reduced secretion of gastric enzymes and acid. Similarly, in uterine atrophy, the endometrial lining becomes thin and smooth, losing its natural texture, which may impair normal uterine responsiveness.

Causes of *Milāsat* (Greasiness) of Body Surfaces (Baghdadi, 2005, pp. 136-138):

(a) Internal Causes: This refers to the flow or secretion of *Laisdār Khilt* (viscous humor)



over dry surfaces of internal organs, leading to unnatural greasiness or sliminess.

(b) External Causes: The application or contact of external greasy substances, such as wax or oil, on dry outer surfaces of the body, produces artificial lubrication or slipperiness.

II. *Amrāḍ-i-Khushūnat*: This occurs when a surface that is normally smooth becomes roughened, usually due to inflammation, irritation, or pathological growths. The inner lining of the trachea and bronchi becomes rough, thickened, and inflamed in chronic bronchitis, resulting in impaired airflow and causing persistent cough and mucus production. In atherosclerosis, the inner lining of arteries becomes rough and irregular due to plaque formation, increasing the risk of blood clot formation and obstructed circulation.

Causes of Khashūnat (Roughness) of Body Surfaces (Baghdadi, 2005, pp. 136-138):

(a) Internal Causes: The presence of irritating *Khilṭ-e- Ḥār* (hot humors) eliminates the natural lubricants or moisture from the surfaces of organs, leading to dryness and roughness.

(b) External Causes: They refer to the exposure to environmental factors that desiccate the surface, such as smoke, dust, or dry air, excessive hot baths, bathing in styptic waters, dry foods and aliments, desiccant medicaments, which result in the loss of moisture from the outer layers of the skin or mucosal membranes.

2- *Amrad-i-Miqdar* (voluminous disorders)

This is a type of *Amrad-i-Khilqat* that deals with pathological changes in the size of body viscera /organs. All kinds of hypertrophy or atrophy come under this category. In Unani/Persian medicine, diseases of size are categorized based on abnormal increases or decreases in the size of an organ or body part. These structural changes affect the function of organ due to either excessive accumulation or deficiency of matter, or abnormalities in the body's natural faculties (like formative, retentive, or nutritive faculties).

Amrad-i-Miqdar is classified into two main types:

A. *Tazāyud al-Miqdār* (Abnormal Increase in Size)

This occurs when an organ becomes larger than its proportionate size, disrupting normal function, as shown in the following:

- Macrocephaly (Enlarged Head): This may occur due to hydrocephalus or congenital abnormalities.
- *Dā' al-Fīl* (Elephantiasis): It is a chronic parasitic condition where limbs or genitals swell abnormally due to lymphatic obstruction.
- *ʿIẓm al-Lisān*: This is a condition where the tongue enlarges abnormally, interfering with speech, swallowing, and breathing (seen in conditions like Down syndrome or amyloidosis).

Causes of *Tazāyud al-Miqdār*: There are several leading causes of the pathological increase in the quantity or size of bodily organs or tissues (Majusi,1889, pp. 32-36):

I. Excess of *Mādah*: When there is an overabundance of material (humoral substances) in the body, the *Quwwat-e-Jādhbah* (absorptive power) draws a large quantity of this material towards specific organs, thereby increasing their size or volume.

II. Strengthening of *Quwwat-e-Jādhbah*: If the *Quwwat-e-Jādhbah* becomes excessively strong, it draws in an abnormal amount of material, causing hypertrophy of the

affected organ.

III. The combined effect of excess material and strong *Quwwat-e-Jādhbah*

IV. Excess of *quwwat-e-Musawirah*

V. *Warm* (Swelling)

VI. Stimulated Absorptive Faculty due to use of *Musakhkhināt* (Heating Agents): Even if the absorptive faculty is not inherently strong, the use of heating agents, Musakhkhināt, likes hot plasters, massage, can enhance the *Harārat-e-Gharīziyyah* (innate heat), which, in turn, stimulates absorptive capacity, leading to the accumulation of large quantities of material in the organs and resulting in organ enlargement.

B. *Tanaqquṣ al-Miqdār* (abnormal decrease in size)

In this condition, an organ is smaller than its natural or functional size, leading to reduced functional capacity. This reduction in the size of an organ or tissue may occur due to either failure in development or degeneration after growth.

I. *Umoomi Kami* (generalized): e.g., cachexia

II. *Khususi Kami* (localized): associated with a specific organ or part of the body.

- *Ṣighar al-Mi'dah* (Gastric Hypoplasia): This refers to a condition where the stomach is underdeveloped, potentially resulting in impaired digestion or early satiety.

- *Ṣighar al-Lisān* (Microglossia): This is an abnormal small tongue, which may affect speech and feeding (congenital or acquired).

- Cerebral Atrophy in Alzheimer's Disease: The shrinkage of brain tissue leads to cognitive decline, memory loss, and dementia (Javed, G., Ahmed, F., 2020, pp. 281 –290).

- Miosis (Constricted Pupil): The pupil becomes abnormally small, affecting vision and light response.

Causes of *Tanaqquṣ al-Miqdār* (Majusi, 1889, pp. 32-36):

(a) Congenital: *Quwate ghaziyah ka zauf*, is the deficiency in quwwat musawwira (formative power), and a shortage of nourishing matter during development.

(b) Acquired: Excess of barudat (coldness) may occur alone or along with yabusat (dryness), trauma (cuts, burns, frostbite), internal decay, such as corrosion, putrefaction, or ischemia, and inadequate nourishment, or blood supply.

3- *Amrāḍ al- 'Adad* (Numerical abnormalities)

These are conditions in which an organ or body part deviates from its normal number or count, either due to congenital anomalies or acquired changes (Avicenna, 1993, pp. 120 –122). According to Ali ibn al-'Abbās Majūsī, Ibn Hubal al-Baghdādī, and Ibne Sīnā, Amrāḍ al- 'Adad is divided into four types:

A. *Ṭab'ī Ziyādati* (Natural increase)

The organ is present in greater number than is naturally required, without being harmful by itself, although it may sometimes impair function or cause discomfort. The following examples illustrate this concept:

- Polydactyly: Having extra fingers or toes may interfere with hand function or gait.

- Accessory spleen: A small additional spleen found in some individuals; it is usually benign but can complicate surgical procedures.

B. *Ghayr Ṭabʿī Ziyādati* (Unnatural increase)

This involves the appearance of growths, masses, or abnormal structures that are not natural parts of the organ system. These often result from pathological changes (Majusi,1889, pp. 32 – 36)

- Kidney stones: Solid deposits that are formed in the urinary tract.
- *Nakhūnah* (Onychogryphosis) are abnormally thickened and deformed nails.
- *Sulaʿah* (Tumors) refers to benign or malignant masses in various organs.
- *Masah* (Lipomas or cysts) are soft-tissue swellings that may develop under the skin.
- *Butūrī* (Boils) refer to localized skin infections causing pus-filled swellings.
- *Ḥabb al-Qurʿ* (Warts) are growths on the skin caused by viruses.

Causes of increase in Adad (Number) (Baghdadi, 2005, pp. 136 –138).

I. Natural Increase is the excessive strength of the *Quwwat Qawiyyah* (formative Faculty), whereby a strong internal faculty promotes tissue or organ multiplication, and together with an abundance of pure or high-quality material, optimal biological material supports the formation of additional structures.

II. Unnatural Increase: abnormal increase in anatomical number occurs due to dysregulation of *Quwwat Qawiyyah* (formative faculty) and the accumulation of *Raddī Mawād* (morbid material); poor-quality matter results in abnormal tissue formation, such as tumors, cysts, or duplications.

C. *Ṭabʿī Nuqṣān* (Natural deficiency)

This refers to an organ that is missing or underdeveloped from birth. The condition may or may not cause symptoms depending on the organ involved, such as congenital absence of a limb (a hand, finger, or foot) or renal agenesis (being born with only one functional kidney).

D. *Ghayr Ṭabʿī Nuqṣān* (Unnatural deficiency)

In this condition, the organ was originally present and complete, but became damaged, decayed, or removed due to disease, injury, or surgery (Majusi,1889, pp. 32 – 36).

- Amputation refers to the loss of a finger, limb, or part of an organ due to trauma, infection, or complications like diabetes.
- Tissue necrosis refers to a body part that rots or decays due to infection, which may lead to gangrene.
- Post-surgical removal refers to the removal of a body part due to disease (e.g., appendectomy or mastectomy).

Ali ibn al-ʻAbbās Majūsī further classified the *nuqṣān* (deficiency) into two categories: *Nuqṣān Kāmil* (Complete deficiency), defined as the complete loss of an organ or limb (e.g., complete finger amputation), and *Nuqṣān Nāqiṣ* (Partial deficiency), which is defined as the loss of a portion of an organ (e.g., amputation of a phalangeal tip).

Causes of Decrease in Adad (Number) (Baghdadi, 2005, pp. 136-138):

I. Internal Causes are *Qillat-e-Mādah* (Deficiency of formative material), whereby insufficient biological material fails to support normal development, leading to the underdevelopment or absence of certain organs or tissues.

II. External Causes are environmental or physical factors, such as exposure to excessive heat or cold, amputation or physical loss of a body part, and infection (Ufoonat), that may result in tissue destruction.

4- *Amrad-i-Wad‘* (Positional and proximity disorders)

These are defects in the position and proximity of body organs. They include all unnatural situations in which an organ is found in relation to its proximity to or distance from a neighboring organ. They are of two types: first, when the movement of an organ toward or away from a neighboring organ becomes impossible, and second, when an organ can no longer move away from a neighboring organ, although it was previously able to do so. For example, it may be impossible for a finger to move into contact with its neighboring one or to move away from it, although it was previously possible; or there may be difficulty in opening or closing the eyelids, or the difficulty of separation of joints due to laxity during paralysis or extension of the palm (Qarshi, 2010, pp. 76-79).

The defects in position include total or partial displacement of any organ, e.g., bone dislocation or visceral hernia. They also include defects in the voluntary and involuntary movements of body organs. Movements may be either increased, as in Parkinsonism, or decreased, as in Ankylosing spondylosis. The defects in proximity include loss of the gap between two adjacent organs, leading to the cessation of their movement, e.g., stricture between two organs or viscera, or ptosis.

According to the author of *Kāmil al-Ṣinā ʿah*, diseases of position are classified into two main types (Majusi,1889, pp. 32-36):

A. *Maradh al-Waḍ ʿ* (Disease of position)

Refers to a condition in which an organ shifts from its natural position, e.g., *Khul‘* (Dislocation), in which a joint or bone moves out of place, causing pain and loss of function.

Causes of *Maradh al-Waḍ ʿ* (Baghdadi, 2005, p. 139):

- *Ḥarakat Mufraṭah* (Excessive movement): Sudden or forceful physical movement can cause an organ to shift from its original position, like, Fataq (hernia), resulting from jumping or physical exertion, in which abdominal contents protrude through a weakened area; and *Tharb al-Ṣifāq* (peritoneal protrusion) caused by excessive straining or loud shouting, potentially leading to displacement or bulging of the abdominal lining.

B. *Laisdār Ruṭūbat* (Viscous moisture)

Accumulation of sticky or viscous humors can lead to slippage or displacement of organs, e.g., *ʿIrq al-Nisā* (sciatica), in which the femoral head may become displaced due to the excessive buildup of viscous fluids, contributing to pain and difficulty in movement.

C. *Maradh al-Mushārakat* (Disease of coordination)

This occurs when the natural coordination or relationship between two organs is disrupted. There are two forms of disease of Coordination:

I. The active organ becomes passive: An organ that is normally responsible for movement becomes immobile or fixed. For instance, the fusion of lips or fingers, where parts that should move independently become stuck or joined, happens, and hence prevents normal motion.

II. The passive organ becomes overly active: An organ that is normally stationary or controlled starts to act without proper control. In a disorder of the tongue’s ligaments, for example, the tongue becomes rigid or restricted, making it impossible to protrude —a loss of its expected movement despite normal external signals.



Causes of *Amrāz-e-Mushārakat*:

i. Congenital Cause: A developmental defect present at birth, in which two body parts are abnormally fused, like the congenital fusion of the eyelids, where the upper and lower eyelids are joined.

ii. *Indimāl al-Zakhm* (Adhesion from wound healing): Improper or excessive fibrotic healing of a wound can lead to adhesions or scar contractures, causing abnormal fusion or restriction between adjacent tissues or structures.

According to *Kitāb al-Mukhtārāt fī al-Ṭibb*, there are four types of abnormalities in the position and coordination of an organ:

(a). *Khul'* (Dislocation): The organ physically moves out of its natural position due to dislocation.

(b). Deviation of an organ from its location without (complete) dislocation: The organ shifts from its natural position without complete dislocation. For example, a part of the intestine moves into the scrotal sac (as in an inguinal hernia). In this case, although no bone is displaced, the organ is no longer in its correct cavity.

(c). Involuntary and unnatural movement of an organ in its location: An organ that is usually immobile or stable begins to move abnormally or involuntarily, disrupting functional coordination. For instance, *Ra'shah* (Tremors), in which the limbs or muscles shake involuntarily, interferes with smooth voluntary movement.

(d). Abnormal immobility of a normally active organ: An organ that is normally mobile becomes unnaturally fixed or stiff, resulting in loss of function. For example, in the case of *Taḥajjur al-Mafāṣil* (Joint stiffening) as seen in arthritis, joints become rigid and cannot move properly.

Galen's View (*Jālīnūs*): According to Galen, every organ has a specific position and a specific relationship with other organs. If either is disturbed, the organ can no longer function normally. Therefore, both the position of an organ and its coordination with neighboring organs are essential for normal function.

Discussion

The concept of *Amrāḍ-i-Tarkīb* (structural diseases) is a significant aspect of Unani and Persian medicine, in which diseases are categorized according to morphological abnormalities that affect the function of the organ. This categorisation is crucial for understanding how structural alterations contribute to the development of different disease conditions.

Luminal alterations can indicate underlying pathologies. Congenital or acquired narrowing or blockage of the bile ducts can cause cholestasis, and if left untreated, liver failure is likely to occur (Squires, and Ng, 2015, pp. 1807–1810).

Narrowing of the ureters leads to upstream dilation (hydronephrosis), pain, and kidney damage (Smith, Howards, and Preminger, 2012, pp. 114-117). Permanent dilation of the bronchial walls due to chronic infection impairs mucociliary clearance (Barker, 2002, pp. 1383–1393). Thickening of the arterial wall and narrowing of the arterial lumen due to plaque buildup impair blood flow (Libby, 2002, pp. 868–874).

The paper also discusses how changes in the surface texture of organs occur. For instance, smoothing of the gastric mucosa due to chronic atrophic gastritis can impair digestive function and increase the risk of gastric cancer (Correa, 1988, pp. 504–509).

Thickening of the bronchial walls in chronic bronchitis and alteration of the uterine lining after menopause serve as examples of how structural alterations may interfere with normal physiological processes (Goldblum, et al., 2017; Hogg, et al, 2004, pp. 2645–2653). The normally Smooth endothelium becomes irregular and rough due to plaque buildup, calcification, and fibrosis (Libby, 2002, pp. 868–874).

Disorders reflect deviations from the natural, functional size of an organ, which can result in serious physiological consequences. Whether too large or too small, the imbalance in size hampers its function, structural harmony, and interaction with surrounding organs. Hepatomegaly can compress nearby organs and signal conditions such as fatty liver disease, congestion, or malignancy. Conversely, atrophy of the liver lobes is linked to cirrhosis and portal hypertension (Sherlock, and Dooley, 2002). Cardiac hypertrophy may initially be adaptive but often causes heart failure and arrhythmias due to structural and functional decline (Frey, and Olson, 2003, pp. 65, 45–79). Thyroid enlargement may create a mass effect, leading to vocal problems, difficulty swallowing, and tracheal constriction (Gharib, et al., 2006, pp. 849–910). Kidney atrophy or asymmetry in size frequently corresponds with a decreased glomerular filtration rate and progressive kidney dysfunction. Brain shrinkage, associated with cognitive decline and neurodegenerative diseases, impacts memory, language, and behavior (Fox, and Schott, 2004, pp. 392–394). Loss of muscle mass results in decreased strength and mobility, impairing daily function and quality of life (Bonaldo, and Sandri, 2013, pp. 25–39).

Abnormalities in the number of body parts can lead to mechanical dysfunction and psychological effects. Absence or reduction of limbs significantly impairs mechanical function, mobility, and daily activities (Gold, and Westgate, 2011, pp. 305–314). Syndactyly (fused fingers), a congenital condition, can interfere with grasping, walking, or fine motor tasks and may require surgical correction to restore function (Malik, 2014, pp. 817–824).

Amrad-i-Wad ('Positional and Proximity Disorders'): This framework explains how movement, stability, and spatial relationships of organs affect health. The body functions properly only when each organ stays in its normal position and maintains harmonious relations with neighboring organs. When the uterus drops into the vaginal canal, pelvic organs are displaced, causing discomfort, urinary incontinence, and bowel problems (Barber, 2016, p. i3853). Congenital failure of the intestines to rotate normally can lead to volvulus (twisting), obstruction, or ischemia (Gamblin, et al., 2003, pp. 517–520).

Unani/Persian physicians had a remarkable understanding of gross pathological changes, exploring their causes and internal effects on the human body despite lacking microscopes. Relying on observation, logic, and clinical experience, their visionary approach to disease development was well ahead of its time. Today, it is essential to combine medical imaging techniques and microscopic insights with the classical Unani/Persian concept of *Amrad-i-Tarkib* (structural disease). While Unani/Persian medicine provides a rich understanding of disease based on humoral imbalance and structural changes, modern diagnostics offer detailed insights at the cellular and tissue levels. Integrating both approaches enhances clarity in explaining disease concepts, especially for students trained in both systems. This combination not only deepens academic understanding but also improves diagnostic and therapeutic accuracy, reinforcing the relevance and credibility of Unani medicine in modern practice.

Conclusion

The Unani/Persian concept of *Amrāḍ-i-Tarkīb* (structural diseases) offers a systematic and anatomically based framework for understanding disease through abnormalities in shape, size, number, and position. This review shows that classical descriptions of structural pathology closely resemble modern clinical conditions, including luminal obstructions, organ hypertrophy and atrophy, cavitary changes, surface modifications, numerical anomalies, and positional disorders. These similarities highlight the depth of pathological understanding achieved by Unani scholars through observation and clinical reasoning, even without modern diagnostic technologies.

Although this review is mainly theoretical, the comparison between traditional Unani descriptions and modern clinical conditions sets a base for future empirical research. Future studies should focus on defining *Amrāḍ-i-Tarkīb* using current diagnostic methods, such as imaging, histopathology, and standardized clinical criteria. From a clinical standpoint, combining traditional structural ideas with modern pathology could improve clinical reasoning, especially in chronic and complex anatomical disorders. Also, including Unani structural pathology in medical education and interdisciplinary studies could promote more integrated and culturally sensitive approaches to health and disease.

In conclusion, the systematic reinterpretation of *Amrāḍ-i-Tarkīb* presented in this review emphasizes the value of Unani/Persian medical knowledge in contributing to modern medical science. Connecting traditional structural pathology with modern diagnostic methods offers a promising path toward a more integrated, evidence-based, and diverse medical approach.

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Conceptualization, study design, and drafting of the manuscript were performed by S. M. Ahmer. Anwar Husain assisted in collecting the relevant Arabic textbooks and their translations. All authors read and approved the final version of the work.

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Conflict of Interest

None.

References

Avicenna, 1993. *Al-Qanoon fil Tibb*. Book I. English translation of the critical Arabic text. New Delhi: Jamia Hamdard.

Baghdadi, I.H., 2005. *Kitab al-Mukhtarat fit-Tibb*. Urdu Translation by Central Council for Research in Unani Medicine. New Delhi: CCRUM.

Barber, M.D., 2016. Pelvic organ prolapse. *BMJ*, 354 (20), p. i3853. https://doi.org/10.1136/bmj.i3853. PMID: 27439423.

Barker, A.F., 2002. Bronchiectasis. *New England J Medicine*, 346(18), pp.1383–1393.

Bonaldo, P. and Sandri, M., 2013. Cellular and molecular mechanisms of muscle atrophy. *Disease Models & Mechanisms*, 6(1), pp. 25–39. https://doi.org/10.1242/dmm.010389.

Correa, P., 1988. Chronic gastritis: a clinico-pathological classification. *American J Gastroenterology*, 83(5), pp. 504–509.

Fox, N.C. and Schott, J.M., 2004. Imaging cerebral atrophy: normal ageing to Alzheimer's disease. *The Lancet*, 363(9406), pp. 392–394. https://doi.org/10.1016/S0140-6736(04)15441-X.

Frey, N. and Olson, E.N., 2003. Cardiac hypertrophy: the good, the bad, and the ugly. *Annual Review of Physiology*, 65, pp. 45–79. https://doi.org/10.1146/annurev.physiol.65.092101.142243.

Gamblin, T.C., Stephens, R.E., Johnson, R.K. and Rothwell, M., 2003. Adult malrotation: a case report and review of the literature. *Current Surgery*, 60(5), pp. 517–520. https://doi.org/10.1016/S0149-7944(03)00159-2.

Gharib, H., et al., 2006. Thyroid nodules: clinical importance, assessment, and treatment. *Endocrine Reviews*, 27(6), pp. 849–910. https://doi.org/10.1210/er.2006-0027.

Gold, N.B., and Westgate, M.N., 2011. Epidemiology of limb defects. *American J Medical Genetics Part C: Seminars in Medical Genetics*, 157(4), pp. 305–314.

Goldblum, J.R., Lamps, L.W., McKenney, J.K., and Myers, J.L., 2017. Rosai and Ackerman's surgical pathology. 11th ed. Philadelphia: Elsevier.

Hogg, J.C. et al., 2004. The nature of small-airway obstruction in chronic obstructive pulmonary disease. *New England J Medicine*, 350(26), pp. 2645–2653.

Hossein Hashemi, Z., and Golshani, S.A., 2023. Rhazes's View on Nasal Tumors. *J Res Hist Med*, 12(4), pp. 301-306.

Ibn Rushed, A.A.W.M., 1987. *Kitabul Kulliyat*. Urdu Translation by Central Council for Research in Unani Medicine (CCRUM). 2nd ed. New Delhi: Central Council for Research in Unani Medicine.

Javed, G., and Ahmed, F., 2020. The Concept of Alzheimer's Disease in Unani System of Medicine: A Historical Perspective. *J Res Hist Med*, 9(4), pp. 281-290.

Jurjani, A.A.H., 2010. *Zakhira Khwarazm Shahi*. Urdu Translation by Hakim Hadi Husain Khan. New Delhi: Idara-e-Kitab-us-Shifa.

Karimi, M., and Kasiri, M., 2025. Eastern Physicians' Perspectives on the Principal Vital Organs (Azayeh Råīsa) in Islamic Medicine (3rd-6th Centuries AH/9th-12th CE). *J Res Hist Med*, 14(2), pp. 155-164. doi: 10.30476/rhm.2025.50699.

Libby, P., 2002. Inflammation in atherosclerosis. *Nature*, 420(6917), pp. 868–874. https://doi.org/10.1038/nature01323.

Majusi, A.I.A., 1889. *Kamil al-Sana't*. Urdu Translation by Hakeem Ghulam Hasnain Kintoori. Vol. 1, Part II. New Delhi: CCRUM.

Malik, S., 2014. Syndactyly: phenotypes, genetics and current classification. *European J Human Genetics*, 22(6), pp. 817–824. https://doi.org/10.1038/ejhg.2013.205.

Qarshi, A.A., 2010. *Afad-e-Kabeer*. Translated by Mohammad Kabeeruddin. New Delhi: Idara-e-Kitab-us-Shifa.

Razi, A.B.M.B.Z., 2013. *Kitab Ma al-Fariq aw al-Furooq aw Kalam fi al-Furooq Bayn al-Amraz*. Urdu Translation by Salman Qitaya. New Delhi: Central Council for Research in Unani Medicine (CCRUM).

Saltanat, S., Ahmad, W., Ansari, A., and Jamal, A., 2024. Evolution of Embryology from Rational Science to Evidence-based Science. *J Res Hist Med*, 13(1), pp. 47-62.

Sarveravan, P., and Amalsaleh, E., 2013. Al- Majusi: The Great Moslem Physician of Buyid Dynasty Era. *J Res Hist Med*, 2(3), pp. 87-89.

Sherlock, S., and Dooley, J., 2002. *Diseases of the liver and biliary system*. 11th ed. Oxford: Wiley-Blackwell.

Smith, J.A., Howards, S.S., and Preminger, G.M., 2012. *Ureteral stricture repair and ureterolysis*. In: J.A. Smith, S.S. Howards, and G.M. Preminger, eds. Hinman's Atlas of Urologic Surgery. 3rd ed. Philadelphia: Elsevier Saunders, pp. 114–117.

Squires, R.H., and Ng, V.L., 2015. *Biliary atresia and other disorders of the extrahepatic bile ducts*. In: Kliegman, R.M. et al. eds. Nelson Textbook of Pediatrics. 20th ed. Philadelphia: Elsevier, pp. 1807–1810.

