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An Anatomical Review On Changes In Gulpha Sandhi Sharir With Special Reference To Amavata

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ABSTRACT

This study reviews the changes in the Gulpha Sandhi Sharir, with a specific focus on Amavata. Gulpha Sandhi Sharir refers to the ankle joint in Ayurveda, which is crucial for movement. Amavata is a chronic inflammatory disorder that resembles rheumatoid arthritis and primarily affects the joints, leading to pain, swelling, stiffness, and limited mobility. The review examines key structures in the Gulpha Sandhi, including bones, ligaments, tendons, and synovial membranes, and explains how Amavata impacts these structures. By analyzing classical Ayurvedic texts alongside modern medical literature, this study clarifies the development of Amavata, highlighting the accumulation of Ama (toxins) and its interaction with Vata dosha. The study discusses significant issues such as joint tissue damage, abnormalities in synovial fluid, and inflammation. It aims to link Ayurvedic principles with modern anatomical understanding, providing valuable insights for the management and treatment of this challenging condition.

Keywords: Gulpha Sandhi, Sharir, Amavata, Synovial Fluid

Introduction:

Ayurveda is a science of life, intended to ensure a disease-free existence. It is the oldest known traditional system of medicine, holding potential for greater health through more attention to disease prevention and the prolongation of life. Ayurveda adopts a holistic approach to both preventing and treating diseases, primarily through natural therapies and lifestyle interventions. According to Acharya Sushruta, "To be a good physician one should have sound knowledge of Ashtanga Ayurveda and with that the clarity about concepts mentioned in Shastra." Without a sound knowledge of Ashtanga Ayurveda, it is not possible to diagnose various diseases correctly or treat them accordingly.

शरीरचैव शास्त्रे च दृष्टार्थः स्यादद्विशारदः।

दृष्टशृताभ्यां सन्देहमवापोह्य चरेत् क्रिया : ॥ सु. शा. ५/६३

Acharya Sushruta has said that Sharir Rachana (anatomy) is so essential that it will enable the practitioner to understand the pathology of the disease and treat the patient from the root cause. The Sushruta Samhita describes Sharir Rachana in detail. The rigidity and hardness of our body are mainly due to Asthi (bones) and Sandhi (joints). Asthi plays a crucial role in the structural support (Dharana Karma) of our body. Asthi and Sandhi are essential for the locomotor functions of the body. When the joints are injured, daily activities become difficult and life becomes painful. Acharya Sushruta said that Gulpha Sandhi is an Adhoshakhagata

Sandhi[1] Gulpha Sandhi is mainly associated with locomotion and weight balance. There are scattered references to Gulpha Sandhi Sharir in classical texts, and the detailed knowledge of the structures of the ankle joint is essential to understand the pathological conditions affecting the joint for better management. In Ayurveda, Acharya Madhavkara first identified Amavata as a unique disease entity, primarily affecting the heart, vital points (Marma), and joints (Sandhi). Amavata is a disease of the Madhyam Rogmarga.

Modern lifestyle changes, dietary habits, and emotional stress impair digestive power leading to undigested food, or Ama. At the same time, Vata moves towards Kapha Sthana along with joints. Ama and Vata are predominant factors involved in the disease pathogenesis. Ama, accumulated under the influence of Vata, in the joints, starts giving severe pain.[2]The Asthi and Sandhi are the main locations of cardinal symptoms such as joint pain (Sandhishool), swelling (Sandhishoth), and stiffness (Sandhigrah).[3] Amavata in modern medical science can be correlated with rheumatoid arthritis in its clinical manifestation. Rheumatoid arthritis is a chronic, progressive autoimmune disease and the most common chronic inflammatory joint disease.[4] It causes joints to become swollen, painful, and leads to permanent disability. Modern medicine offers no curative treatment, only palliative measures to reduce symptoms, but they have many side effects. Since Amavata affects middle-aged and young people, crippling them, it adversely affects the country's economy. Rheumatoid arthritis remains a challenge for physicians due to its chronic and crippling nature. Ayurveda offers a holistic approach to the disease. Our Acharyas have recommended numerous therapeutic modalities for managing the disease. However, it has become so essential to reestablish their efficacy through intensive research to eliminate the disease from its root without any side effects. The treatment modalities available in modern medical science may cure one part of the body at the cost of affecting another part with life-threatening side effects. Therefore, people have hope in Ayurveda to rescue them from pain and disability caused by the disease.

MATERIAL AND METHODS:

Objectives: To study anatomical changes in Gulpha w.s.r. to Amavata

Concept of Sandhi:

Sandhisharir:

The Kora sandhis are found in the places Anguli (Inter phalangeal), Manibandha (Wrist), Gulpha (Ankle), Janu (Knee), and Kurpara (Elbow). This is Hinge joint according to modern science.

Classification based on Rachana[5]

As per Acharya Sushruta; based on structure Sandhi's are classified under eight types.

Kora - Anguli, Manibandha, Gulpha, Janu, Kurpara.

Ulukhala - Kaksha, Vanshana, Danta

Samudga - Amsapeeda, Guda, Bhaga.

Pratara - Greeva, Prishtavamksha

Vayasatunda - Hanu.

Tunnasevini - Shira, Kati, Kapala.

Mandala - Netra, Hridaya, Kanda. Yakrut pleeha, klomanaadi

Sankhavartha - Srotra, Sringhataka

Gulpha Sandhi [6][7]

It is the most important Sandhi of the lower extremities because it is mostly associated with locomotion and to balance our body weight to help in walking. It is a kora variety of chala sandhi, which is of 2 in number (one in each limb).

Definition of Ama

Due to the decreased digestive capacity of Agni in amashaya, the food is not digested properly, this causes the formation of vitiated rasa dhatu which spread in the body and obstruct the srotas it is known as ama. It is also considered as mala Sanchaya, apakva anna rasa which is the root cause for all disease.[8]

Amavata is one of the difficult diseases caused by Ama combining with vitiated Vata Dosha. The Samprapti (pathogenesis) begins in the Annavaha Srotasa and then progresses through Madhyama Roga Marga with special tendency for Kapha Sthanas especially Sandhis (joints).[9]

Discussion

Acharya Madhavakar was the first to voice a comprehensive view of the Amavata, a disorder condition due to the Vata Dosha's malfunctioning and an adverse accumulation of Ama in multiple joints of the body. It closely resembles RA, a recognized debilitating condition.[10] The Ama, like toxic metabolic byproducts, localizes in the connective tissues and systematically circulates in the joints. Consequently, patients experience a variety of painful symptoms, such as stabbing pain, crippling stiffness, marked swelling, and tenderness in the involved joints.[11] Importantly, this Ama contributes to joint pathology when it combines with Vata, quickly moving to various locations in the body where Kapha is predominant. It is essentially the accumulation along the dhamanis, which means it poisons and effectively clogs the tiny pores and openings of the tissues to cause a derangement or loss of circulation and vitality. It will obstruct vital organs, such as the heart, including impacting the joints terribly. The disease may go for major joints like Gulpha (ankle), Jaanu (knee) and Trika (hip) if the dosha vitiation is higher and the symptoms get aggravated highly.[12] The clinical presentation of Amavata closely resembles the disease manifestations found in rheumatoid arthritis, an autoimmune condition infamous for perpetuating chronic inflammation and symmetrical polyarthritis, characterized by a profound and relentless attack on the body's own joints.[13]

Anatomical changes in relation to Amavata :

In the first stage, the patients are characterized by swelling of the synovial lining, which is accompanied by pain in the joints, and warmth, stiffness, and swelling around the joint. In the second stage, where the disease has fully developed, there is a rapid and relentless division of cells and the synovium thickens and bulges out within the joint, usually with systemic symptoms such as fever. The inflamed cells in the final stage are powerful enough to digest both cartilage and bone through the action of enzymes and thus cause the structural changes that are significant to the affected joints. This causes the loss of normal shape and alignment of the joints, a increased level of pain, and significantly reduced mobility. Rheumatoid arthritis is basically a systemic inflammatory condition that devastates the cartilage and the bone, making joints painful and, most importantly, dysfunctional. The hallmark of this condition lies in its characteristic pattern and distribution of synovial joint involvement. As the disease progresses, joint inefficiency can lead to malformations and a considerable decline in overall functionality, profoundly affecting the quality of life of the individual. The most commonly affected joints are the metacarpophalangeal (MCP), proximal interphalangeal (PIP), and thumb interphalangeal (IP) joints, with the distal interphalangeal (DIP) joints usually only being involved in the presence of coexistent disease at the MCP or PIP joints. Tenosynovitis of the flexor tendons can also result from the condition, which seriously limits finger flexion and severely compromises grip strength. Nodular thickening in the tendon sheath can lead to the development of a trigger finger, adding to the difficulties faced by people struggling with this complex inflammatory disorder.[14]

Conclusion

The study of Gulpha Sandhi Sharir in the context of Amavata offers compelling insights into the anatomical and pathological changes linked to this chronic inflammatory condition. By effectively merging classical Ayurvedic principles with modern medical insights, this research firmly establishes the necessity of a holistic approach in the management of Amavata, closely paralleling rheumatoid arthritis.

Key Findings

1. **Anatomical Changes:** The review decisively underscores the vital role of the ankle joint (Gulpha Sandhi) in locomotion and weight distribution. It reveals that Amavata leads to pronounced swelling, stiffness, and pain, primarily driven by the accumulation of Ama (toxic metabolites) and the imbalance of Vata dosha.
2. **Pathogenesis:** The dynamic interplay between Ama and Vata is critical to the disease's progression, resulting in significant joint damage and reduced mobility. This finding resonates with modern rheumatology, where rheumatoid arthritis is characterized by similar inflammatory mechanisms.
3. **Holistic Management:** The study strongly advocates for Ayurvedic treatment modalities that target both symptoms and root causes, highlighting the urgent need for further research to validate these approaches and enhance their effectiveness.

In summary, this anatomical review not only bridges traditional Ayurvedic concepts with contemporary medical understanding but also powerfully affirms Ayurveda's potential to provide effective

management strategies for Amavata. Future research efforts should focus on clinical trials to substantiate these findings and investigate the therapeutic benefits of Ayurvedic interventions in alleviating the burden of this condition.

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