AN ANATOMICAL REVIEW ON CHANGES IN GULPHA AND MANIBANDHA SANDHI SHARIR PARTICULARLY IN RHEUMATOID ARTHRITIS (AMAWAT)

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ABSTRACT
Amavata is one of the vaatavyaadhi, mainly affecting the sandhi to produce ruja and shopha. In this disease, vitiated vata along with kapha gets sthaanasamshraya in sandhi to produce different lakshanas. Gulpha Sandhi is a kora variety of chala sandhi and one of the most important Sandhi of the lower extremities as it is mainly associated with locomotion and to balance our body weight and help in walking. Gulpha sandhi in our body are two in number, which is present in between pada and jangha. The ankle joint present at the junction of leg and foot can be understood as the same. Amavata is a disease in which vitiation of Vata Dosha and accumulation of Ama take place in joints, which simulate rheumatoid arthritis (RA). Localized ama gets in the body tissue or joints, it can lead to production of pain, stiffness, swelling, tenderness, etc., in the related joints. Rheumatoid arthritis (RA) is a systemic inflammatory condition that results in cartilage and bone destruction. It is characterized by a typical pattern and distribution of synovial joint involvement.

Keywords: Gulpha sandhi, Manibandha, Amavata, mamsa peshi, Snayu,

INTRODUCTION
According to Achaarya Sushruta, Gulpha sandhi is adhoshakhagata sandhi are two in number. Detailed description about sira, dhamani, snaayu, peshi etc. related to gulpha pradesha is not found in the classical texts of Ayurveda. Sandhi can be taken as union of two or more bones. Where two or more articular surfaces of bones are joined is known as Sandhi (Joint). Acharya Sushruta has considered only asthi sandhi, while the joints between mamsa peshi, Snayu, and Sira are innumerable.1 According to Acharya Vagbhata Sandhi’s are lubricated by Kapha. In between articular surfaces of bones Shleshaka kapha is situated. Thus, making the joints to move comfortably.2 Person having Vata prakruti is krusha and produces sound on movement in joints.3 Joints of pitta prakruti person are generally Shithila and banded by mamsa.4 Kapha prakruti person having gudha, snigdha, shlishta sandhi asthi.5 Sandhi’s are considered as the one of the moola sthana’s of Maj-javaha Srotas.6 Amavata is the term which is formed by two distinct individual terms i.e. Ama and Vata.7 Amavata is mainly affecting the sandhi to produce ruja and shopha. In this disease, vitiated vata along with kapha gets sthaanasamshraya in sandhi to produce different lakshanas.8
**Objectives:** To study anatomical changes in Gulpha and Manibandha sandhi particularly in Rheumatoid Arthritis (Amavat).”

**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:**

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: Srotara, Sringhataka

**Gulpha Sandhi:**

Gulpha Sandhi is one of the most important Sandhi of the lower extremities as it is mainly associated with locomotion and to balance our body weight and 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 vitiating 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.

Amavata is one of challenging diseases caused by Ama combining with vitiating Vata Dosha. The Samprapti (pathogenesis) starts in the Annavaha Srotasa and then spreads through Madhyama Roga Marga with special inclination for Kapha Sthanas especially Sandhis (joints).

**DISCUSSION**

Acharya Madhavakar first time explained regarding the Amavata. It is a disease in which vitiation of Vata Dosha take place and there is accumulation of Ama take place in the different joints, which simulate rheumatoid arthritis (RA). This Ama gets localized in the body tissue and circulate in joints, it further leads to develop symptoms like pain, stiffness, swelling, tenderness, etc., in the related joints. The Ama which plays an important role in the joint disease associating itself with vata, moves quickly to the different sites of kapha in the body and accumulates them along the dhamanis (Blood vessels) this blocks the tissue pores and passages. Hence it effects the heart and joints etc. when vitiated doshas are severe then these effects the joints like, Gulpha, Jaanu, Trika etc. The features of Amavata are similar to rheumatoid arthritis, an autoimmune disorder which causes chronic inflammatory and symmetrical polyarthritis.

**Anatomical Changes in Rheumatoid arthritis:**

Rheumatoid arthritis (RA) condition is progress in three stage; in first stage there is swelling of synovial lining, pain in joints, warmth, stiffness, swelling around the joint. In the second stage there is a rapid division and growth of cell, which cause the synovium to thicken in joints sometimes along with fever. Last stage the inflamed cell releases the enzyme that may digest bone and cartilage and causing the involved joint to lose its shape and alignment, more pain and loss of movement. It is a systemic inflammatory condition that results in cartilage and bone destruction. It is characterized by a characteristic outline and distribution of synovial joint involvement. Inefficiency of the joint leads to deformities and loss of function which then results in the quality of life. In the hands, the metacarpophalangeal (MCP), proximal interphalangeal (PIP), and thumb interphalangeal (IP) joints are most frequently involved. The distal interphalangeal (DIP) joints are involved only in the presence of a coexisting MCP or PIP disease. Tenosynovitis of the flexor tendons causes a reduction in finger flexion and grip strength. Nodular thickening in the tendon sheath may also produce a trigger finger.
The MCP joints characterize a good model system for studying synovitis and bone impairment in RA because these joints have a comparatively simple anatomy, are invariably involved at disease onset, and are characteristic sites of bone destruction. Bone erosion in RA has been considered in the context of primary immunologic abnormalities, or cellular abnormalities of synovial fibroblasts, osteoclasts, and other cells.

In radiological findings it can be noted that joint space narrowing is due to destruction of articular cartilage. Osteo arthritis and Osteoporosis around joint is earlier and due to synovial inflammation. Soft tissue swelling in infective arthritis with joint effusion. Articular Erosion is an area of destruction of the articular cortex.

**CONCLUSION**

Rheumatoid arthritis is the common form of articular disorder commonly infected joints mainly Gulpha, Manibandha sandhi. The Ama produced due to vitiation of dosha get circulated in various joints associating with vata, moves quickly to the different joints in the body. Rheumatoid arthritis can be correlated with Amavat as per the aetiology, sign and symptoms. With appropriate diagnosis and treatment, attempt should be made to prevent Anatomical Changes in Gulpha and Manibandha sandhi to avoid excessive impact on the quality of the life of an individual.

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