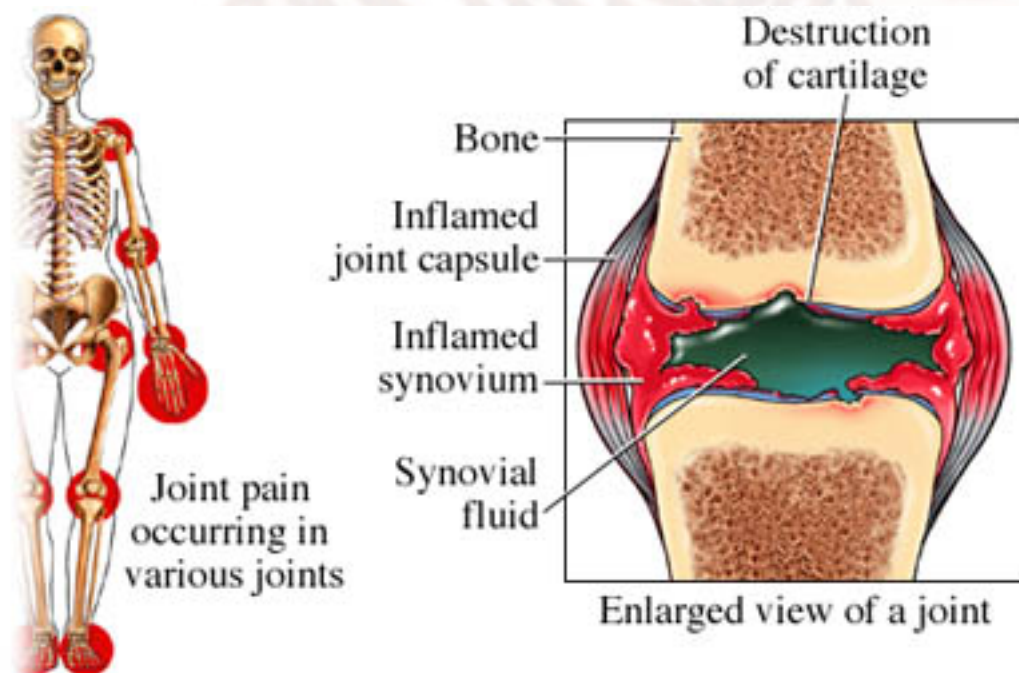


Rheumatoid Arthritis

Rheumatoid arthritis (RA) is a progressive autoimmune disease that initially causes signs and symptoms like joint pain and swelling in the joints. Unlike the degenerative changes caused by osteoarthritis, Rheumatoid arthritis affects the lining of your joints causing painful swelling that can eventually result in bone erosion and joint deformity. It is a chronic inflammatory disease and can damage a wide variety of body systems including the skin, eyes, lungs, heart and blood vessels. It is estimated that up to 1 percent of the world population suffers from Rheumatoid arthritis with incidence in women is twice when compared to men. Even with improved treatment facilities, this disease has still the potency to create physical disabilities and hence is considered as one of the major serious health issues.

What Is Rheumatoid Arthritis?

Rheumatoid arthritis is an autoimmune disease that causes chronic inflammation of the joints. Autoimmune diseases are illnesses that occur when the body's tissues are mistakenly attacked by their own immune system. The immune system contains a complex organization of cells and antibodies designed to find and destroy foreign substances entering the body, particularly infections. Patients with autoimmune diseases have antibodies and immune cells in their blood that target their own body tissues, where they can be associated with inflammation. While joint tissue inflammation and inflammatory arthritis are classic RA features, the disease can also cause extra-articular inflammation and injury in the organs. Because it can affect multiple other organs of the body, rheumatoid arthritis is referred to as a systemic illness and is also called rheumatoid disease.



Causes

Rheumatoid arthritis occurs when the immune system attacks the synovium (the lining of the membrane that covers the joints). The exact reason that triggers the immune system is unknown. But there are some suspected reasons for RA which is not yet proved as the exact cause. They include:

- **Hereditary** - RA can be genetically inherited. Certain genes have been identified as the ones increasing the risk of RA in people.
- **Environmental Factors** - Certain environmental factors also play a role in causing RA. The exact causes are unknown, even though Smoking tobacco and Exposure to Silica mineral can increase the risk of RA.
- **Diseases** - Chronic periodontal disease, certain bacterial, viral and fungal infections can trigger the immune system causing RA.
- **Gut Bacteria** - Some theories consider certain gut microbes seen in the lining of the bowels as cause RA in genetically susceptible people. But the exact microbe is not yet identified.

Risk Factors

- **Age** - Likely to start by the middle age. The adults in their 60s are more prone for RA.
- **Sex** - The incidence of RA is two to three times greater in females than in males.
- **Smoking** – Smoking increases the risk of RA or can worsen the disease.
- **Obesity** - People with overweight have higher risk of developing RA than others.
- **Early Life Exposures** - Some early life exposures increase the risk of developing RA in adulthood, e.g. children who are malnourished or whose parents are smokers have higher probability of developing RA in their adulthood.
- **Child Births** - Women who have not given birth have higher risk of developing RA. In contrast, women who are breast feeding have a decreased risk of developing RA.

Signs and Symptoms

A typical case of rheumatoid arthritis has two different presentations around the year. There are periods when the signs and symptoms appear or aggravate; these periods are called **Flares**. There are also periods when these signs and symptoms become less bothering or disappear completely; these periods are called **Remissions**.

Common signs and symptoms of RA are:

- Stiffness, pain on movement and tenderness of the joint.
- Polyarthritis - Usually more than one joint is affected. Commonly involve joints are proximal interphalangeal and metacarpophalangeal joints of the hands, wrists, shoulders, elbows, hips, knees, ankles and metatarsophalangeal joints of the feet.

The distal interphalangeal joints and the spine are usually unaffected, even though stiffness in the cervical region is noticed.

- Morning Stiffness or Stiffness after long periods of sitting and inactivity that can last for more than an hour is one of the characteristic features of RA.
- Bilateral Occurrence - Usually the symptoms occur in the same joints in both sides of the body.
- Muscle pain
- Loss of joint range of motions, joint activity and warmth on the joints on examination.
- Rheumatic Nodules - Firm lumps seen under the skin; most commonly over the elbows and fingers. Seen in 20 to 30% of the cases.
- Fatigue
- Malaise
- Loss of appetite
- Fever - Usually low grade
- Weight loss
- Anemia
- Depression
- Frustration and social withdrawal
- Hoarseness of the voice if the rheumatoid disease affects the throat.

Rheumatoid arthritis has a slow onset with the signs and symptoms taking several weeks to months for its development. Usually the smaller joints are affected first and as the disease progresses the symptoms spread to other bigger joints.

Stages of Development of RA

Based on the progression of the disease, Rheumatoid arthritis can be classified under 4 stages. The progression to these stages can take years to complete. The different stages are:

1. Stage 1 (Early RA):

- People feel pain, stiffness and swelling of the affected joints.
- There is inflammation inside the joint and tissues in the joints swell up.
- There is no damage to the bones but the synovium is inflamed.
-

2. Stage 2 (Moderate Progressive)

- People experience pain and motion of the affected joint become limited.
- With inflammation of the synovium, there is damage to the joint cartilage (the tissue that covers the end of the joints at the site of joints) resulting in loss of mobility or there is limited mobility of the joint.
-

3. Stage 3 (Severe Progressive)

- At this stage, people experience more pain and swelling.
- Also muscle weakness with more mobility loss is seen.
- With damage in cartilage the bones tend to rub each other often resulting in bone erosion and also some deformities to the joint.

4. Stage 4 (Terminal Progression)

- This is the end stage of RA.
- People experience severe pain, swelling, stiffness, loss of mobility of the joint along with reduced muscle strength.
- There is no longer inflammation in the joint but the joint becomes destroyed and the bones are fused together resulting in joint deformity.

Types of Rheumatoid Arthritis

Based on the presence of anti-CCP (Anti-Cyclic Citrullinated Peptide) in the blood, Rheumatoid arthritis is of 2 types. Anti-CCP are antibodies that attack the body and produce symptoms of rheumatoid arthritis. There is another antibody called as RA factor which is also used to confirm the presence of rheumatoid arthritis. Based on the presence or absence of these 2 antibodies, Rheumatoid arthritis can be classified into:

1. Seropositive Rheumatoid Arthritis

- In this type, the presence of anti-CCP is positive.
- About 60 – 80 % of the patients test positive for the presence of anti-CCP.
- Most of the patients who test positive for anti-CCP also test positive for RA factor.
- Presence of anti-CCP can be detected 5 to 10 years earlier before the actual manifestation of Rheumatoid arthritis symptoms in a person's body.

2. Seronegative Rheumatoid Arthritis

- In this type, the patient test negative for the presence of anti-CCP or RA factor in blood.
- In these patients, the disease is diagnosed by x-ray findings or by demonstration of clinical symptoms. Usually, these patients do not respond well to the typical Rheumatoid arthritis treatment.

3. Juvenile Rheumatoid Arthritis

- Usually affects children under the age of 17.
- It can be seropositive or seronegative.
- Also called as juvenile idiopathic arthritis.
- Swelling, stiffness and pain of the joints lasting for several months are common characteristics of the disease.

- Along with this, children also suffer from growth issues, eye and lymph node inflammation.

Diagnosis

Rheumatoid arthritis is confirmed after several examinations which include:

1. **History Taking:** a very detailed history about the signs and symptoms including the onset, aggravating factors, relieving factors, etc. is asked and recorded.
2. **Physical Examination:** Includes examination of the joint for swelling, redness, warmth on touching, tenderness, etc. Range of motion, joint function, nerve and muscle reflexes, muscle strength are tested.
3. **Blood Tests:** Includes testing for RA factor, Anti-CCP, Antinuclear antibody test, ESR, C-reactive protein, etc.
4. **Imaging Techniques:** These are done to find joint damage or to find the severity of the joint. X-rays, ultrasound and MRI are the various imaging techniques used.

Complications of Rheumatoid Arthritis

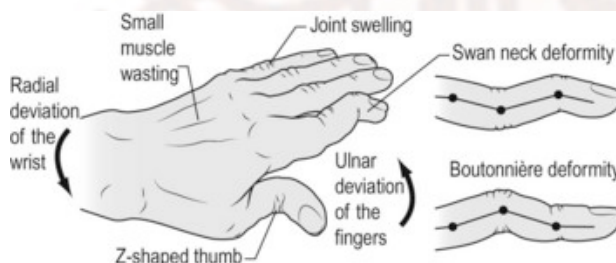
Even though the principle focus of rheumatoid disease are the joints, since it is a systemic disease other organ system may also get involved. Involvement of other organ systems is usually seen in seropositive patients.

Hence the complications caused by RA can be classified as:

- a) Joint deformities
- b) Other Systemic Manifestations caused by RA

Joint Deformities:

The common joint deformities seen in RA patients' are:



- **Boutonniere Deformity:**

The middle finger joint bends towards the palm while the outer finger joint may bend opposite the palm.

- **Swan-neck Deformity:**

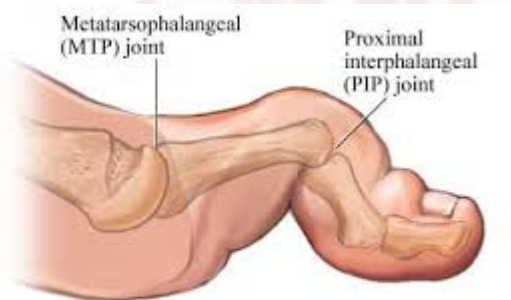
The base of the finger and the outer joint bends while the middle joint straightens giving the appearance of a swan.

- **Hitchhiker's Thumb:**

The thumb flexes at the metacarpophalangeal joint and hyperextends at the interphalangeal joint below the thumb nail. Also called as Z-shaped deformity.

- **Claw Toe Deformity:**

The toes are either bent upward from the joints at the base of the foot, downward at the middle joints, or downward at the top toe joints and curl under the foot.



Other Systemic Complications Caused by Rheumatoid Arthritis

Eyes:

- **Sjogren's syndrome:** Dryness of the eyes and mouth caused due to inflammation of the glands of eyes and mouth.
- **Corneal Abrasion:** due to dry eyes.
- **Scleritis:** Inflammation of the sclera/ white part of the eyes.

Cardiopulmonary:

- **Pleuritis:** Rheumatic inflammation of the lining of the chest. This leads to chest pain on deep breathing, shortness of the breath or coughing.
- Formation of rheumatoid nodules within the chest
- **Pericarditis:** Inflammation of the tissue surrounding the heart. Causes chest pain whose intensity is reduced on lying down or bending forward.
- **Atherosclerosis**

Circulatory System:

- **Anemia:** Reduced red blood cells
- Reduced white blood cells

- **Felty's Syndrome:** Associated with decreased white blood cells. Increases the risk of infections. Characterised by splenomegaly and leukopenia. Recurrent bacterial infections and chronic refractory leg ulcers are major complications.
- **Lymphoma:** Carcinoma associated with the lymph glands.

Skin:

- **Rheumatoid Nodules:** Firm lumps or nodules under the skin. Usually seen around the elbows and fingers where there is frequent pressure. Also seen at the pressure points on the feet and knees. Rarely are they seen in the lungs, heart, and sclera of the eyes. They are usually asymptomatic but have the chances of getting infected.

Skeletal System:

- **Osteoporosis:** A condition in which the bones become thin and brittle and become more prone to fractures. Rheumatoid arthritis along with certain medications used to treat RA increases the risk of osteoporosis.

Neurological Complications:

- **Peripheral Neuropathy:** Usually mild in nature.
- **Carpel Tunnel Syndrome and/or Tarsal Tunnel Syndrome:** Entrapment neuropathies usually caused due to compression of the peripheral nerves by the inflamed tissue.
- **Cervical Myelopathy:** Rarely happens; but has the potency to cause permanent or fatal neurological damage.
- **Rheumatoid Vasculitis:** Small digital infarct along the nail bed is a common manifestation. Sudden onset of an ischemic mononeuropathy or progressive scleritis is typical.

Other Systemic Complications:

- **Abnormal Body Composition:** The proportion of fat to lean mass is often higher in people suffering from RA even if they have normal BMI. This leads to increased chances of blood pressure and cholesterol.
- **Diabetes:** Usually people suffering from RA are at a higher risk of developing diabetes than others.
- **Increased Infections:** Rheumatoid arthritis along with the medications used to treat it can impair the immune system leading to increased chances of infections in the body.

Management

There is no permanent cure for rheumatoid arthritis. Early detection and medical intervention has proven in improving outcomes.

The goal of treatment in rheumatoid arthritis is

- to reduce joint inflammation and pain
- maximize joint function
- Prevent joint destruction and deformity

The treatment of RA usually involves combination of medicines, rest, joint and muscle strengthening exercises and patient education.

1. Medications used in RA: 2 classes of medicines are used in treatment of rheumatoid arthritis.
 - a) **Fast acting First line drugs**- Used to reduce pain and inflammation. Include:
 - ✓ Nonsteroidal anti-inflammatory drugs (NSAIDs)
 - ✓ Corticosteroids
 - ✓ Acetaminophen
 - b) **Slow acting Second line drugs**- Promotes disease remission and prevents progressive joint destruction. Includes:
 - ✓ Disease-modifying anti-rheumatic drugs (DMARDs)
 - ✓ Biologics
 - ✓ Janus kinase (JAK) inhibitors
 - c) **Supplementary Medicines**
 - ✓ Omega-3 fatty acids supplements such as fish oils to improve immunity
 - ✓ Calcium and Vitamin D to prevent osteoporosis
 - ✓ Folic acid supplements to prevent side effects of medications
2. Occupational Therapy: To improve joint functions and also to improve the quality of living. Includes:
 - ✓ Exercises to keep the joint flexible
 - ✓ Usage of assistive devices such as splints and braces for holding the joints in resting position; canes and crutches to maintain mobility.
3. Surgery: Done to repair the damaged joints in case if medications failed to prevent joint destruction. The following surgical procedures are usually performed in RA patients:
 - ✓ Synovectomy-Removing the inflamed synovium.
 - ✓ Tendon Repair
 - ✓ Joint Fusion
 - ✓ Total Joint Replacement
4. Proper regular Exercise. Swimming is highly recommended
5. Proper rest
6. Practicing Yoga
7. A healthy diet that includes more fibers and avoiding carbohydrates and fats.

Rheumatoid Arthritis in Ayurveda

Ayurveda has a different management approach for rheumatoid arthritis and is found to be very efficient. Unlike the Allopathic approach where exact cause of RA is still not clear, Ayurveda has listed a variety of causes for Rheumatoid arthritis and hence its management is found to be more effective. Rheumatoid arthritis is compared to *Amavata* in Ayurveda. *Amavata* is caused by two main factors- *Ama* (product of inappropriate digestion and metabolism) and *Vata*. The vitiated *vata* circulates the *ama* in the whole body and produces block in the channels of circulation and get stationed itself in the *sandhis* (joints) and give rise to *Amavata*.

Amavata

The vitiated *vata* along with *ama* moves around *koshta* (GIT, gastro intestinal tract), *trika* (the lower back) and *sandhis* (joints) and creates pain in the joints, loss of appetite, indigestion, stiffness of joints, swelling in joints, weakness and heaviness in the chest region and this condition is called as *Amavata*.

Nidana (Causes)

1. *Aharaja Nidana*

- *Virudhahara*- The dietary articles which are unwholesome for the normal functioning of the *doshas* and *dhatu*s (body tissues), e.g. boiled yoghurt, fish along with fruits, milk along with pulses especially black gram, untimely food, eating food before digestion of previous food, improper quantity of food, food which is not properly cooked, etc.
- *Guru Ahara*- Foods which are heavy and large and difficult to digest.
- Excessive intake of tubers and roots for the purpose of body nourishment.
- Consumption of food with allergens, e.g. animal products, nuts, wheat products, seafood.
- *Mandhagni*- Low digestive fire

2. *Viharaja Nidana*

- *Virudha Chesta*- Activities which are not favourable to the normal physiology of the body. This includes suppression of natural urges,

sleeping during day time, late night sleep, not maintaining the proper body posture during walking, lying, sitting, etc.

- Doing exercises beyond the body capacity leading to physical exertion.
- Excess indulgence in sex
- *Nischalata*- Physical inactiveness or a sedentary life style.
- Doing exercises immediately after taking *snigdha ahara*, i.e. heavy food or oily food or food rich in fat, carbohydrates.

3. *Manasika Nidana*

- Emotional disturbances
- Stress

Samprapthi (Etiopathogenesis)

Due to above mentioned causes there is formation of *ama* along with vitiation of *vata dosha*. This *ama* driven by the vitiated *vata* circulates the whole body and gets lodged in *sandhis*. Also the *ama* circulating through *dhamanis* (blood vessels) interacts with the *doshas* (*vata, pitta, kapha*) in their normal *sthanas* (places) and becomes more virulent. Thus the *ama* becomes qualitatively more heavy and viscous leading to blockage of channels. This chain of events leads to *Amavata*.

Poorva Roopa (Pre-monitory Signs and Symptoms)

- *Siroruja* (Headache or feeling of heaviness of the head)
- *Gaatraruja* (Mild body ache)
- *Jwara* (Occasional occurrences of mild fever)
- Mild ache or stiffness of the affected joints

Roopa (Signs and Symptoms)

Since *Amavata* is a metabolic disorder which is progressive in nature and also since all the *doshas* are involved, the signs and symptoms according to Ayurveda is further explained as:

1. *Samanya Amavata Lakshanas* (General or constitutional symptoms)
2. *Pratyatma Lakshanas* (Cardinal or Specific Symptoms)

3. ***Doshanubandha Lakshanas*** (Symptoms according to Predominance of *Doshas*)
4. ***Pravrudha Amavata Lakshanas*** (Progressive Signs and Symptoms)

1. ***Samanya Amavata Lakshanas*** (General Signs and Symptoms)

- ***Angamardha*** (General body pain which is of crushing type)
- ***Aruchi*** (Anorexia or loss of appetite)
- ***Trsna*** (Excessive thirst)
- ***Alasya*** (Lethargy or feeling inactive)
- ***Gaurava*** (Feeling of heaviness in the body)
- ***Jwara*** (Fever)
- ***Apaka*** (Indigestion)
- ***Angashoonata*** (Swelling or puffiness all over the body)

2. ***Pratyatma Lakshanas*** (Cardinal Signs and Symptoms)

- ***Sandhi Sotha*** (Swelling in the joints)
- ***Sandhi Shoola*** (Continuous and severe Pain in the joints that even disturbs the sleep)
- ***Sandhi Stabdhatta*** (Stiffness of the joints that can affect the movements)
- ***Sandhi Gaurava*** (Feeling of heaviness in the joints)
- ***Agnimandhya*** (Low digestive fire)

3. ***Doshanubandha Lakshanas***) Signs and Symptoms according to Predominant *dosha*

In *Amavata*, all the 3 *doshas* (*vata*, *pitta* and *kapha*) are vitiated. According to the level of vitiation of *doshas*, often one *dosha* is seen predominant to others. As a result, the predominant *dosha* exhibits its own symptoms along with the other symptoms of *Amavata*. On the basis of predominance of *dosha* vitiated, the following additional symptoms can be seen in the patient

- ***Vata Pradhana Lakshanas: Shoola*** (Severe pain in the joints). Though joint pain is common in all types of *Amavata*, in *Amavata* with predominance of *vata dosha*, it is severe compared to other types.

- **Pitta Pradhana Lakshanas:** *Daha* (Burning sensation) and *Raga* (Redness) in the joints.
- **Kapha Pradhana Lakshanas:** *Staimithya* (subjective feeling of cold and dampness over the body especially in hands and feet), *Gaurava* (Feeling of heaviness is felt more compared to other types) and *Kandu* (itching) especially in the affected joints.

4. **Pravrudha Amavata Lakshanas (Progressive Signs and Symptoms)**

These are the signs and symptoms exhibited by the patient towards the advanced stage of the disease. These include:

- **Sarujam Sandhi Shotha-** Edema in all major joints associated with severe pain. The joints include the joints of *hastha* (hands), *patha* (feet), *Shiras* (head), *gulpha* (ankle joints), *janu* (knees) and *uras* (thorax).
- **Vrischika Danshavat Vedana-** The pain is so severe that it resembles the pain in scorpion sting.
- **Utsahahani-** subjective feeling of lack of enthusiasm.
- **Bahumutrata-** Increased frequency and quantity of urine.
- **Kukshi Katinya-** Rigidity of abdomen.
- **Kukshishoola-** Pain in abdomen.
- **Nidra Viparyaya-** The pain gets aggravated at night and leads to lack of sleep.
- **Chardhi-** Vomiting
- **Brama-** Confusion or hallucinations due to reduced coordination.
- **Antrakoojana-** Increased bowel sounds.
- **Moarcha-** Loss of motor functions or inability of the sense organs to perceive its sensory objects.
- **Hritgraha-** Stiffness in the chest or the cardiac region.
- **Vibandha-** Constipation
- **Anaha-** Abdominal distension
- **Agnimandhya-** The digestive fire is impaired again and again.
- **Praseka-** Excessive secretion of saliva.
- **Gaurava-** The stiffness all over the body especially in the joints increases.
- **Vairasya-** Abnormal perception of taste.
- **Daha-** Warmth in the joints, or generalized or localized burning sensation over the body.
- **Trsna-** Excessive thirst

- ***Grahanidosha***- Inflammatory bowel disease.

Bheda (Classification of *Amavata*)

Based on different factors, *Amavata* has 4 different classifications in Ayurveda. They are

1. Based on *Dosha Pradhanyata*
2. Based on *Avasta* (stages of development)
3. Based on *Lakshanas*
4. Based on Prognosis

➤ Based on the *Dosha* Predominant

Classified into 7 types:

1. *Vataja Amavata*- *vata dosha* is more predominant.
2. *Pittaja Amavata*- *Pitta dosha* is predominant.
3. *Kaphaja Amavata*- *Kapha dosha* is predominant.
4. *Vatapittaja Amavata*- *Vata* and *Pitta* is predominant
5. *Vatakaphaja Amavata*- *Vata* and *Kapha* is predominant
6. *Pittakaphaja Amavata*- *Pitta* and *kapha* is predominant
7. *Sannipataja Amavata*- All the 3 *doshas* are equally vitiated.

➤ Based on *Avastha* (Stages of Progression)

1. *Samanya Amavata*-Starting stage where the symptoms are starting to manifest and become clear.
2. *Pravrudha Amavata*-The advanced stage of *Amavata*

➤ Based on *Lakshanas* (Different Symptoms manifested)

1. *Vistambi Amavata*- Patient presents with constipation, Feeling of pain in abdomen and area of urinary bladder, heaviness of the body.
2. *Gulmee Amavata*- Patient presents with symptoms like spasmodic pain in abdomen, increased audible peristaltic sounds and stiffness in pelvic region.
3. *Snehi Amavata*- Patient presents with unctuousness of the body, loss of appetite, passing of unctuous and undigested stools and stiffness of body parts.

4. ***Pakwamavata***- Passing of yellowish, black or bluish coloured stools which is devoid of wetness and well formed, fatigue and exertion are the characteristic features.
 5. ***Sarvanga Amavata***- Presents with Pricking pain in pelvis, low back and chest, pain in region of urinary bladder, inflammation of body parts, gurgling sounds in abdomen as in abdominal tumors, heaviness of the head and excretion of *ama*.
- **Based on *Sadhyasadyatha* (Prognosis)**
1. ***Naveena Amavata*** – Here the duration of disease is less than one year. Easy to treat.
 2. ***Purana Amavata***- The duration of disease is more than one year. Difficult to treat.

Upadravas of Amavata (Complications)

Towards the terminal stage or if *Amavata* is not treated in time, it creates different complications in the body. These include:

- All the ***Pravrudha Amavata Lakshanas*** can be considered as complications of *Amavata*.
- ***Angavaikalya*** – deformity or destruction either in appearance or regarding the function or both in the affected organ.
- ***Sandhi Vikruthi***- Deformity of the affected joints or loss of function of affected joint.
- ***Sankocha***- Permanent flexion of joints resulting in shortening of the joints due to its stiffness and immobility
- ***Khanja***- Limping gait
- ***Hridgraha***- Complications associated the normal functioning of heart.

Upasaya (Pacifying factors)

- Drugs which are pungent and bitter in taste, hot in potency and carminative and digestive stimulants are suitable for treatment.
- ***Rooksha sweda*** (fomentation techniques without the use of oil) is suitable.
- Fasting
- Use of food which are bitter and pungent in taste, e.g. bitter gourd, garlic, sponge gourd, etc.
- Use of hot water for drinking
- Getting proper rest
- Use of splints or other assistive devices if necessary
- Regular exercise
- Maintaining proper body posture while walking, sitting and lying
- Hot water bath
- Warm climate as in summer season or the late morning hours or the noon time in other seasons are found to be suitable for the patient.

Anupashaya (non-pacifying Factors)

- Use of drugs which are sour, unctuous and cold in potency.
- *Snigdha Sweda* (Fomentation with the use of oil)
- *Taila abhayangam* (Oil massage)
- Oily and fried foods
- *Abhishyandi* (food which causes obstruction to body secretions, such as curd.
- Foods which are sour in taste, such as pickles, citrus fruits, etc.
- Excess nourishment and weight gain
- Fish, milk and milk products, sugar, etc.
- Heavy foods
- Suppression of natural urges
- Physical inactivity or over exertion.
- Sleeping during day time
- Cold water bath
- Cold climate especially cloudy season and early morning and night hours usually are not suitable for the disease.
- Use of alcohol and tobacco

Sadhyasadhyatha (Prognosis) of Amavata

Amavata is considered to be a *krchasadhya vyadhi* (disease whose management is difficult yet can be completely managed)

Prognosis of *Amavata* is based on number of doshas and sandhis involved.

Amavata is considered to be:

- *Sadhya* (curable) if there is involvement or predominance of only one *dosha* and which is less than one year of its onset.
- *Yapya* (not curable but manageable) if there is 2 *doshas* involved and which is more than one year after its onset.
- *Asadhya* (Not curable) if all the 3 *doshas* are involved, all joints are affected and there is presence of swelling in all the joints.

Chikitsa (Treatment)

Since *Amavata* is a progressive disorder, the treatment of *Amavata* is also done in different phases.

Two major stages of treatment of *Amavata* are:

1. **Treatment in amavastha**– the major aim of this stage of treatment is to remove *ama* by using *ama pachana* and *ama nirharana* (elimination of *ama*) and to make

the disease to a *kevala vata roga* (Diseases caused due to vitiation of *vata dosha* alone).

2. **Treatment in *niramavastha***- By this phase of the treatment, *ama* is completely eliminated and the treatment is done to the vitiated *vata dosha*. After the *vata* is brought back to normalcy, treatments to improve the natural strength and vitality and to nourish the body which has become weak by the treatment are done.

Combining all these factors, treatment of *Amavata* can be further subdivided as:

- i. *Ama pachana and Agni deepana*
- ii. *Shodana*
- iii. *Shamana*
- iv. *Brahmana*
- v. *Rasayana*

I. *Ama Pachana and Agni Deepana*

Ama which is one of the major cause of *amavata* is eliminated by this procedures. The main cause of *ama* is *agnimandhya* (low digestive fire). *Ama nirharana* (Digestion or elimination of the already formed *ama*) and *Agni Santookshana* (the correction of digestive fire) is the main aim of treatment at this stage. It is attained through medications and treatment both internally and externally.

a) *Abhayantara Chikitsa* (Internal Medications)

- i. ***Langana***- Any treatment that brings lightness to the body is called as *langana*. In *amavata*, *langana* is achieved by *Upavasa* (fasting) or *laghu bhojana* (food processed with *deepana* and *pachana* drugs, for e.g. *panchakola choorna* and in minimum quantity). This helps in bringing back the *jataragni* or digestive fire to normalcy.
- ii. **Medications**- *Ajamodadi choorna*, *Vaiswanara choorna*, *Chitrakadi vati*, *Panchakola choorna*, *Trikatu choorna* etc. can be used for this purpose. These drugs are *katu*(pungent), *tiktha*(bitter) and is *deepana* (carminative) in nature.

b) *Bahya Chikitsa* (External Treatments)

- i. ***Swedana***- *Swedana* is done as a major treatment in *amavata*. *Rooksha sweda* (Fomentation without application of oil or fomentation which is dry in nature) in particular is advised in *amavata*.

Swedana eliminates *stambha* (stiffness), *gaurava* (heaviness) and *staimithya* (coldness) in the body. *Rooksha sweda* in particular reduces *Srotorodha*

(obstruction to channels of circulation) which in turn increases circulation. The following techniques are used in *Rooksha sweda*:

- a. *Valuka Sweda*
- b. *Putra sweda*
- c. *Karpasastyadi sankara sweda*
- d. *Sneha avarjitha upanaha sweda*

II. *Shodana* (Elimination Procedures)

After the *ama pachana* and *agni deepana*, the disease enters *nirama Avasta* (where the *ama* is completely digested). The next phase of treatment is then to eliminate the vitiated *doshas* (*Vata*, *pitta* and *kapha*).

By *swedana*, the vitiated *doshas* get liquefied and has reached the *koshta* (GIT). From there they have to be eliminated out through the nearest channels. This elimination procedures comes under *Shodana karma*.

The different *Shodana* procedures used in *amavata* are:

- i. ***Virechana* (purgation)**- By *virechana*, the vitiated *pitta* and *kapha* which is lodged in *koshta* gets eliminated. Also it brings *Vatanulomana* (Downward movement of *vata*).

Usually in *amavata* mild purgation is recommended. Purgation by the use of *Eranda taila* (castor oil) is ideal. Purgation using *Trivrut choorna*, *Phalatrikadi choorna*, *Eranda paka*, etc. can also be done.

Snehapana- Internal administration of oil. after *virechana* there is only one *dosha* vitiated ;i.e. *vata*. One of the primary treatments for vitiated *vata* is *snehapana*. In *amavata*, the patient is usually weak ;so *hraswamatra sneha* (minimum dose) is advised. also *snehapana* brings about *koshta shuddhi* (cleanses GIT), and *vata shamana* (pacifies *vata*). *Eranda taila* can be used for this purpose.

- ii. ***Vasti* (Enema)**- The vitiated *vata* is now moved out of *koshta* and is seated in *pakwasaya* which is considered to be one of the major seats of *vata* can be further eliminated by *vasti* since *vasti* is the ideal *Shodana* procedure for elimination of *vata*.

Vasti is of 2 types:

1. ***Niruha Vasti***- administration of enema with decoctions which has *vatahara* property and also with drugs which has *deepana* (digestive

stimulant) and *pacana* (carminative) in nature. *Kshara vasti*, *Swalpa prasarini tailyadi anuvasana vasti*, etc. are the *vasti yogas* mentioned in *amavata*.

2. **Anuvasana Vasti-** administration of enema with medicated oils which has *vatahara* properties. *Saindhavadi taila* is used in *amavata*.

A combination of both these enemas alternatively is given in order to eliminate the vitiated *vata dosha*.

III. *Shamana Chikitsa*

By this the vitiated *doshas* are eliminated. In order to pacify the left over *doshas* and to bring them back to normalcy, *shamana* treatments are done. This can further be classified into:

- a. **Bahya Chikitsa-** treatment procedures done externally. The various procedures include:
 - i. **Dhanyamla Dhara:** a procedure in which the warm or hot fermented liquid obtained after cereals and other medicinal herbs is poured over the body of the patient in monitored streams. This usually reduces inflammation in the affected region.
 - ii. **Kashaya dhara:** a procedure in which an herbal decoction made out of specific herbs is poured with a specific vessel from a certain height in rhythmic manner and is rubbed into the body. Again act as anti-inflammatory.
 - iii. **Choorna Pinda Sweda:** Procedure in which herbal powders are heated or fried in herbal oils and tied in a poultice to rub against the painful region for a fixed duration of time. This reduces the pain and related conditions, strengthen and rejuvenate the joints, muscles and soft tissues.
 - iv. **Patrapinda Sweda:** procedure in which the herbal drugs or leaves of medicinal plants obtained from nature is boiled or fried in herbal oils ;made into poultice and used to rub against the painful region. Acts an analgesic and also rejuvenates the joints and muscles.
 - v. **Lepas:** local application of pastes prepared out of medicinal herbs. *Choornas* such as *Kolakulathadi*, *Nagaradi*, *Jadamayadi*, *Gruhadhoomadi*, *Shatapushpadi*, *Ahimsra kebukadi*, etc. are used.
 - vi. **Abhyananga:** Oil massage usually done with oils which are hot in potency such *Kottamchukkadi*, *Karpasasthyadi*, *Saindhavadi*, *Mahavishagarbha*, etc. are used.

b. **Abhayantara Chikitsa (Internal medications)**

Medications which are *vatakaphahara* and *deepana* in nature are usually given. Includes:

- i. **Decoctions** such as *Amrutotharam, Maharasnadi, Rasnerandadi, Gandharvahastadi, Rasnaptakam, Rasonadi*, etc. are used.
- ii. **Tablets** such as *Dhanwantaram, Simhanada guggulu, Yogaraja Guggulu, Amrita Guggulu, Shiva Gulika*, etc. are used.
- iii. **Choornas** such as *Pippalyadi, Vaishwanaram, Trikatu, Amrutadi*, etc. are used.

IV. *Brhmana* (Nourishing Therapies)

By these treatments, the body has become weak especially the joints. So some treatments to provide nourishment are done. This can again be classified as:

a. *Bahya Chikitsa* (External)

Includes:

- i. **Abhyangam**: Whole body massage with medicated oil. Provides nourishment to the affected region. Also improves circulation. Oils such as *Sahacharadi tailam, Kottamchukkadi tailam, Dhanwantaram tailam, Vishagarbha tailam, Karpasastyadi*, etc. can be used.
- ii. **Shastika shali pinda sweda or Njavarakizhi**: A procedure in which special type of rice called *shastika shaali* is prepared in milk processed with herbal medicines is made into poultices and rubbed on the affected body part, this gives nutrition and strength to the region. Instead of poultice, it can also be used as a paste to be applied on the affected region.
- iii. **Kati, Janu, uro or Greeva Vasti**: Involves specially prepared warm herbal oil being poured and retained inside flour dough boundary kept in the lower back, knees, thorax, back of the neck respectively for a specified duration of time. It strengthens the muscles and connective tissue and also lubricates the joints and makes it more flexible. *Dhanwantaram tailam, Mahanarayana tailam*, etc. can be used.
- iv. **Nasyam**: Nasal drops of medicated oils are used. Improves the functioning of the nervous system. *Kshherabala taila* is an ideal choice.
- v. **Pizhichil**: Also called as oil bath. A procedure in which luke warm made out of specific herbs is poured with a specific vessel from a certain height in rhythmic manner and is rubbed into the body. Again act as nourishing in nature.
- vi. **Matra Vasti**: Enema with minimum amount of oil can be administered daily. *Tila taila* (sesame oil) can be used.

b. *Abyantara Chikitsa* (Internal medications)

Gritha yogas (Ghee) such as *Dhanwantara grhta*, *Nagaradi grhta*, *Mahashunti grhta* , etc.

V. *Rasayana Chikitsa* (Rejuvenating Therapies)

Medications which improves the vitality and efficacy are included under this.

Aswagandha powder, *Triphala* , Milk processed with different medicines ,etc. comes under this.

Key Drugs

- *Guduchi* (*Tinospora cordifolia*)
- *Eranda* (*Ricinus communis*)
- *Guggulu* (*Commiphora mukul*)
- *Ashwagandha* (*Withania somnifera*)
- *Shunti* (*Zingiber officinale*)
- *Ajamoda* (*Trachyspermum ammi*)
- *Rasna* (*Alpinia galanga*)
- *Saindava lavana* (Himalayan salt)
- *Maricha* (*Piper nigrum*)
- *Pippali* (*Piper longum*)
- *Haritaki* (*Terminalia chebula*)
- *Haridra* (*Curcuma longa*)

Home Remedies

- Alternate application of hot and cold packs.
- Getting enough rest.
- Good sleep
- Regular low impact exercises to improve mobility and range of motion.
- Maintaining correct body postures.
- Use of turmeric in daily diet.
- Use of assistive devices such as splints and braces.

Yoga Asanas Recommended in *Amavata*

- *Veerabhadrasana* or Warrior pose
- *Vrikshasana* or Tree pose
- *Marjarasana* or Cat stretch
- *Setubandhasana* or Bridge pose

- *Trikonasana* or Triangle pose
- *Shavasana* or Corpse pose
- *Surya Namaskara* or Sun salutation
- *Pranayama*

Do's and don'ts

<i>Pathya</i> (do's)	<i>Apathya</i> (Don'ts)
Freshly prepared warm and easily digestible food	Heavy meals
Cereals like red rice, barley	Oily and fried foods
Pulses like horse gram, bengal gram, peanuts	Frozen and canned foods
Kodo millets	Cereals like black gram
Vegetables like garlic, bitter gourd, snake gourd, pigweed, Horseradish, White goose-foot, broccoli, soy	White flour and white sugar
Fruits like berries, grapes	Milk, yoghurt and other dairy products
Spices like turmeric, pepper, ajwain, cumin, ginger, asfoetida	Red meat
Olive oil	Tobacco and alcohol
Omega 3 rich fish such as salmon, mackerel, sardines	Fish other than salmons, sardines and mackerel
Luke warm water	Exposure to eastern wind
Butter milk	Suppression of natural urges
Swimming , regular exercises	Excessive eating
Practicing mindfulness, correct body postures	Cold water
Yoga	Physical inactivity or excessive activities
Proper sleep, rest	Sitting up at night or sleep during morning hours

Clinical Experience

A female patient aged 55 complained of pain and swollen knee joints since 6 years. She also complained of stiffness in the joint especially during morning hours, difficulty walking, occasional fever and indigestion.

On examination, tenderness, swelling and warmth over the knee was found, also the flexion and extension motion of knees was reduced or limited.

On blood examination, erythrocyte sedimentation rate (ESR) was found to be high and RA factor was tested positive.

She is of *Kaphapitta prakruti* with reduced *agnibala* and was moderately built.

During her 28 days stay, the following treatment method was adopted:

External treatments:

1. *Valuka sweda* (using sand poultices) and *Udwartana* (powder massage) for 4 days.
2. *Dhanyamladhara* and application of *Jadamayadi lepa* for 4 days.
3. Oil massage using *Kottamchukkadi taila* for 2 days.
4. Since day 3, patient was advised to take *Eranda taila* (castor oil) - 2 tsp with lukewarm milk every night.
5. *Yoga vasti: Saindhavadi taila anuvasana vasti* and *kshara vasti* for 8 days.
6. *Janu vasti* was done to both knees after the swelling has reduced for 7 days.
7. *Pizhichil* with *Dhanwantaram tailam* for 7 days.
8. After the *yoga vasti*, *nasyam* with *Ksheerabala taila* was done for 7 days.

Internal Medications:

1. For the first week, she was advised to take *Amruthotharam kashayam*, *Panchakola choorna*, *Dhanwantaram* tablets twice daily.
2. *Eranda taila* with lukewarm milk every night till the end of treatment.
3. For 2 and 3 week, she was advised to take *Gandharvahastadi kashaya*, *Simhanada guggulu*, *Vaishwanara choorna* twice daily.
4. Along with these medications, *Aswagandha choorna* with milk was advised early morning empty stomach in the fourth week.

Along with this, she was put on a strict diet and advised to practice yoga.

After the treatment, the stiffness and swelling reduced by 40 % and pain reduced by 60 %. Range of motion has improved and problem of indigestion was completely cured.

Advice on discharge:

- *Rasnasaptakam kashayam* with *Simhanada guggulu* tablets twice daily for 2 months
- *Vaishwanara choorna* thrice daily for 2 months
- *Aswagandha* powder with lukewarm water at morning for 4 months
- *Eranda taila* with lukewarm milk at night for 2 months
- *Dhanwantaram taila* for application on knees
- *Pratimarsha nasya* with *Ksheerabala taila* early morning for 3 months
- Diet advices and exercise routine was advised.

CONCLUSION

Amavata is a slow progressive metabolic disorder which has the potency to limit our day-to-day activities. During the progression, it affects bodily systems other than the joints. Towards the terminal stages it can also become life threatening due to the complications. An early intervention and treatment is necessary since it can cause permanent deformities in the body especially the joints. The pain is another important feature of *Amavata* which makes the life miserable. Because of all these, *Amavata* has also a negative impact on the psychology of the patients. Ayurvedic approach in management of *Amavata* does not only limit to the removal of the symptoms but also focuses on improving the health status of the patient post the treatment of *Amavata* by its various nourishing and rejuvenating therapies. Ayurvedic treatment combined with strict diet and exercises has a high success rate in treatment of *Amavata*.

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