Review on etio-pathogenesis and diagnostic approach of Amavata.

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Abstract:

Amavata is a one of the difficult disease for clinicians due to it’s chronicity, incurability, complications, and morbidity. It is chronic disease as it needs repeated hospitalization so it put economic burden on family members and poor quality life. Madhavakara had described etiopathogenesis and clinical presentation of the disease briefly before thousands of years. Amavata is a multisystemic illness can be caused by vitiation of Vata and generation of Ama in the body which has articular as well as extra articular manifestations. Rheumatisim and Amavata have great similarities in the clinical presentation. Amavata can be clinically identical with any of the rheumatic disorder.

Diagnosis of Amavata is not difficult in patient when it’s clinical presentation is classical but it may be confusing in a early stage. In Amavata most of the clinicial features are nominal and categorical there is wide range of clinical signs and symptoms narrated in Madhavakara So the diagnosis often made by some degree of subjective interpretation of clinician. To make a valid, reliable, consistent diagnosis of Amavata some pathological investigations can be included in the diagnostic criteria of Amavata. This study gives insight into review of diagnostic criteria of Amavata.

Keywords: Amavata, rheumatisim, etiopathogenesis, diagnostic criteria

Introduction:

In this modern era life has become fast, competitive, mechanical and stressful that one could not follow the daily regimen and seasonal regimen which are explained by Ayurveda. This results in to vitiation of dosha and agnidusti. Mandagni and agnidushti which is impaired status of angi leads to develop various diseases one of them is Amavata. In case of Amavata the clinical features are produced due to Ama, dosh prakopa, and rasadushti which are
nominal and categorical so clinicians have to assess these sign symptoms with lots of subjectivity. As there are great similarities are seen in the clinical presentation of the Amavata and Rheumatism, Amavata can be correlated with rheumatism. So to make a consistent, valid, reliable diagnosis of Amavata some pathological investigations must be used which are routinely used for the diagnosis of rheumatic conditions. Here attempt has been made to review of the diagnostic criteria of Amavata.

**Review of literature:**

Description of Amavata as a complete diseases not found in brihattrayi, Amavata has explained by Madhavkara as separate disease in 16th century AD. Madhavakara has narrated the brief etiopathogenesis and clinical presentation of Amavata. Amavata is a disease of madhyam marga and initially it is disease of rasavaha srotasa but later on it spreads in pranvaha and asthivaha srotasa. The basic root cause of the disease is the Ama. Ama is fermented or putrefide form of first dhatu (adya-rasa), which was not properly digested due to mandagni.\(^2\). Ama may form in the body by two ways acute formation and insidious formation, when Ama forms in a acute way the diseases like visuchika and alasaka may develops\(^3\), but when Ama forms gradually diseases like Amavata can be develops.

When this Ama mix with dosha and dushya they are termed as sam dosha and sAma duhsya. The diseases which ate produced by sAma dosha and dushya are known as sAma vyadhi\(^4\). Diseases are produced according to the type of samdosha (Vatadi) and site where the dosh-dushya samurchana occurs and sign symptoms are produced accordingly. Such diseases should be diagnosed on the basis of clinical manifestations\(^5\).

**Etiopathogenesis:**

Virudh ahar and virudha chesta along withagnimandya and sedentary lifestyle are the main etiological factors responsible for Amavata. Ahar dravyas which have properties opposite to dhatu and which vitiates the Dosha but cannot eliminate vitiated dosha from body are called as virudh ahar\(^6\).

An individual suffering from mandagini and having lack of physical activities in his day to day life if indulgence with incompatible eatables (Virudh ahar) and Virudhchesta, causes vitiation of vata and generation of Ama in his body. This condition also produced in the body when one indulges in performing strenuous exercise after taking fatty eatables. This Ama associating itself with vata, moves quickly different sits of kafa and fill them and dhAmani with this vaxy mate. This Ama again become toxic when it is associated with vata, pitta, kafa assuming different colors, blocks tissue pores (sukshma srotas) and passages with toxic Ama (thick waxy material). At this stage Ama and vata produces weakness in the body and heaviness in precordial area (Hriday gaurava) immediately. This Ama is responsible for so many distressing diseases in human. Provoked Ama with vata simultaneously produces the stiffness, swelling, pain in pelvic, shoulder, girdles and other joints of the body this clinical condition is called as Amavata\(^7\).
Clinical features of Amavata:

SAmanya Rupa of Amavata: In prarambhik avastha Amavata clinically present with Angmarda (Pain all over body), aruchi (loss of taste), trishna (thirst), alasya (lezziness), gaurava(heaviness), jwar(fever), Apaka(indigation), shoonata(Joints swelling)\(^8\).

Advanced stage of Amavata (Pravrudha): In pravrudha avastha Amavata clinically presented with joint pain specially at joints of hastha, pada, sheera, gulfā, trick, janu etc. There is pain and swelling present wherever Ama with vayu goes in the joint that joint get affected. Pains can be typically compare with vrishik danshvat vedna (scorpion bite pain) associated with agnidorballya(weakness in digestive fire), prasek (dribbling of saliva), aruchi (anorexia), gaurava (heaviness), vairasya (ageusia), daha (burning sensation), bahumutrata (polyurea), pain and hardness of abdomen( guarding and rigidity) sleeplessness, thirst, vomiting, giddiness, increased peristalsis movements, abdomen pain- distension and several such difficult symptoms\(^9\).

Clinical features in association with Dosha:

If pitta becomes the predominant dosha, there could be daha (burning sensation), raga(redness). If vata is predominant pain will be very sever and If kafa is predominant stimit (feeling of being covered with wet clothes), guru (heaviness), kandu (itching sensation) are present\(^10\).

Table: 01 Clinical features of Amavata

| Vyadhipratyanic | SAmanya | Pravridha | In Association to Dosha dushti |
|-----------------|---------|-----------|------------------------------|
|                 |         |           | Vata | Pitta | Kafa  |
| Sandhi shool    | Angmarda| Saruja-Sandhi Shotha (Axial/peripheral joints) | Shooal | Daha  | Staimity |
|                 |         |           |      |       |       |
| Sandhi Shostha  | Aruchi  | Sanchari Vedna | Raga | Guruta |       |
| Trishna         |          | Vrichikdanshavata vedana |       | Kandu  |       |
| Alasya          | Agnidourbalya |         |       |       |       |
| Gaurava         | Daha    |           |       |       |       |
| Jwara           | Bahumutrata |         |       |       |       |
| Apaka           | Nidraviparya |         |       |       |       |
| Shoonta anganam | Hridgraha |         |       |       |       |
|                 | Antrakujana |         |       |       |       |
|                 | BhrAma-Murcha |         |       |       |       |
**Rheumatic Fever Arthritis**: Rheumatic fever is an auto allergic disease, it is systemic illness nearly always accompanied by arthritis and sometimes by skin rashes, *carditis*, sydenham’s chorea.\(^\text{(11)}\) Acute rheumatic fever is a systemic disease of childhood & young adults, often recurrent that follows group A beta hemolytic streptococcal (GABHS) infection. It is a delayed non-*suppurative sequelae* to URTI with GABH streptococci. It is a diffuse inflammatory disease of connective tissue, clinically presented as arthritis, *carditis*, *corrhea*, subcutaneous nodules and *erythema marginatum*\(^\text{(12)}\).

Individuals of age group 5-15 yrs are more susceptible to Rheumatic fever, girls are more affected, it is uncommon in age group less than 3yrs. It is common in 3\(^{rd}\) world countries, environmental factors, overcrowding, poor sanitation, poverty also increases the risk of Rheumatic fever. Incidences are more during fall, winter and early spring.

Arthritis is flitting & fleeting migratory *polyarthritis*, involving major joints commonly involved joints knee, ankle, elbow & wrist, Occur in 80%,\(^\text{(13)}\).

**Rheumatoid Arthritis**: (RA) is a chronic inflammatory multisystem disease involving articular and extra articular tissues. Cause is still uncertain. Genetic factor, environmental factor, autoimmune factors may responsible for RA. It is characterized by persistent symmetrical arthritis involving peripheral small joints\(^\text{(14)}\) . Morning stiffness is common PIP (Proximal inter phalangeal), MCP (*metacarpophalangeal*) joints are frequently affected. Joint deformities may develop after persistent inflammation\(^\text{(15)}\). The prevalence of 0.8% of the population(range 0.3% to 2.1 %) and sex ration of women vs men is 3:1 the onset is most frequent during 4\(^{th}\) and 5\(^{th}\) decades of life\(^\text{(16)}\).

*Articular Manifestations*: Symmetrical poly arthritis of peripheral joints, with pain, tenderness, swelling of affected joint, morning stiffness, PIP and MCP joints are involved.

Extra *articular Manifestaions*: *Cutaneous nodules, vasculitis Pulmonary Nodules, Pulmonary Interstitial disease, bronchitis pericarditis, Myocarditis* etc\(^\text{(17)}\).

**Table: 02 Amavata comparison with Rheumatic fever arthritis, Rheumatoid arthritis, Seronegative Arthritis:**

| Joint involvement | Amavata | Rheumatic fever Arthritis | Rheumatoid Arthritis | Seronegative Arthritis |
|-------------------|---------|--------------------------|----------------------|-----------------------|
| Generally Starts with Major joint | Starts with Major jt | Starts with Minor joint (PIP and MCP) | Axial joints or Peripheral joints of Both |
| Migratory Arthritis | Yes | Yes | No | Rarely |
| Symmetrical | Usually | No | Yes | Usually |
Ankylosing Spondylitis:

Ankylosing spondylitis is a chronic inflammatory seronegative arthritis of unknown cause that primarily involves the axial skeleton, peripheral joints and extra articular structures. Seronegativity is the absence of rheumatoid factor. This disease begins in second and third decade, with men three times more afflicted than women. There is striking correlation between HLA B27 and ankylosing spondylitis. The disease is mild in women, so men usually present with symptoms. The typical presentation is intermittent bouts of low back pain, dull in character. Sacroilitis is the earliest feature with pain in buttocks radiating down the back of the both legs accompanied by low back morning stiffness of few hours duration that improves with activity and returns following period of inactivity. Nocturnal exacerbation of pain that forces the patients to get up and move around may be frequent. In some patients bony tenderness may accompany back pain. Common sites of pain are costochondral junction, spinous processes, iliac crests, greater trochanters, ischial tuberosities, tibial tubercles and heals. Arthritis of peripheral joints other than hip and shoulders is usually asymmetric. Enthesopathy is a hallmark of the disease. In the spine initial inflammatory lesion occurs at the junction of annulus fibrosus of the intervertebral disc cartilage and the margin of the bone. Extra articular manifestations includes anterior uveitis, pulmonary fibrosis and aortic insufficiency that may lead to congestive heart failure. Pathological investigations like HLAB27 is present in 90% of cases. ESR and C-Reactive protein are found raised.

So from above comparison rheumatic fever is closer with Amavata than Rheumatoid arthritis and Seronegative arthritis. But the Cardinal clinical features of Amavata like saruja sandhishotha, etc may be found Rheumatic fever arthritis, Rheumatoid Arthritis, and some forms of seronegative arthritis. So Amavata can be describe as the

| Joint involvement | asymmetrical | Cardiac complications | asymmetrical |
|-------------------|--------------|----------------------|--------------|
| Hridgaurava       | Hridgraha    | Pancarditis          | Pericarditis, Myocarditis |
|                   |              |                      | Congestive Heart failure |
| Patho Investigations | ….          | ASO /CRP            | RA /CRP      |
|                   |              |                      | Sometimes HLAB-27/ESR/CRP |
family of diseases like Rheumatic fever arthritis, Rheumatoid arthritis, seronegative arthritis (Ankylosing spondylitis).

Table no 03: Revised Diagnostic criteria of Amavata.

| Clinical features | Diagnosis of Amavata |
|-------------------|----------------------|
| Major Criteria    |                      |
| 1. Symptoms related with Ama-Agni daurbalya, Apaka etc |
| 2. Symptoms related with Vata-Pitta - Kapha prakop-Angamard, Daha, Prasek, Gaurav, |
| 3. Saruja Sandhi shotha (Involvement of Axial joints or Peripheral joints or Both/Symmetrical or Asymmetrical presentation) |
| Minor criteria    |                      |
| 1. Daha, 2. Bahumutrata, 3. Sanchari Vedana, 4. Gatrastabdata, 5. Vrishikdanshavata vedna |
| Supportive Criteria (Investigation) | Essential any one |
| RA, ASO, CRP, HLA-B27 |
| Essential all three |

Discussion:

Amavata can be describe as the family of diseases like Rheumatic fever arthritis, Rheumatoid arthritis, seronegative arthritis (Ankylosing spondylitis). There is great clinical similarities are found with rheumatic fever arthritis, rheumatoid arthritis, seronegative arthritis. Common clinical feature is monoarticular or polyarticular, axial or peripheral joint or both joints may involve, they have extraarticular signs and symptoms also, they can produce cardiac abnormality in a different extent. Clinicacl features of Amavata can be categorize as clinical features due to Ama and agnimandya, clinical features due to doshaprapkopa, articular and extra articular. Pathological investigations like RA, ASO, CRP, HLA-B27 are useful for the diagnosis of Amavata. Presence of RA factor in serum gives evidence for Amavat (Rheumatoid arthritis type), ASO titre gives evidence for infection of Group A beta hemolytics streptococi which produces rheumatic fever. In these disease joints and connective tissues
are affected hence CRP (C-Reactive Protein) will be increase. Human leukocyte antigen-B27 is measured in lymphocytes is useful supporting evidence in a difficult case. It is important to know that may normal people (2% to 5%) carry the gene. HLA-B27 is present in 90% if cases of Ankylosing spondylitis. (20)

Diagnosis of Amavata is not difficult if patients with typical establishment but may confusing in a early stage due to presence of prominence extra articular manifestations. (21) To make a valid, consistent, reliable diagnosis of Amavata proper history should be taken, examination of Joint should be done and the diagnostic criteria must be applied as suggested in table no 3. Investigations like Synovial fluid examination, ECG, 2D Echocardiography, X ray of affected joints, X ray chest are useful for study of complications. Final diagnosis should be made by correlation between clinical manifestation and investigation.

Conclusion:

1. Amavata is multisystem involving syndrome which has a articular and extra articular manifestations.
2. Clinical features of Amavata comprise features of Ama and Agnimandya, features of doshaprakopa, rasavaha srotodushhti, and sandhivikriti.
3. There is huge range and variation of clinical presentation of Amavata is hound in patients.
4. As signs and symptoms of Amavata found as nominal and categorical some pathoinvestigations must be used for confirmative and consistent diagnosis.
5. Amavata can be clinically correlated with rheumatic fever arthritis, rheumatoid arthritis, seronegative arthritis (Ankylosing spondylitis)
6. Amavata may be found in association with any one of patho investigations like RA, ASO, CRP, HLA-B27.

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