

A DHAMANI FOR TRANSPORTATION OF AMA IN AMAVATA: A REVIEW ARTICLE

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ABSTRACT

Charaka and Sushruta believed that diseases were caused by a disturbance in the equilibrium of the three Ayurvedic humors, and that this disturbance was often a direct cause of the disease. They also recognized several remote causes, both external and internal, for example, entry of toxic materials from outside to inside through vessels, errors of living, natural decay from old age, and climate or weather that could play a role in the manifestation of disease. Ama is also an entity which causes vitiation in dosha, dhatu and mala. Ama is a pathological entity and causes abnormality in srotas, dhatu etc resulting into development of various diseases. Ama generates acute diseases and chronic conditions as well. Amavata is one of such chronic state of ama. Derangement of kapha dosha especially shleshaka kapha in amavata produces joint pain and swelling with tenderness which can be correlated with rheumatoid arthritis. Ama is the toxin that builds up in the body usually as a result of improper digestion. These toxins circulate through dhamanis in the body and typically deposit in weaker areas such as the joints. This leads to the arthritic symptoms of pain and inflammation

KEYWORDS: Ama, Agni, Dhamani, Amavata, Rheumatoid Arthritis, Free Radicals.**INTRODUCTION**

Ayurveda is a comprehensive and integrative health science originating in India. Ayurveda, commonly translated as the knowledge of life, is part of the Vedas, an ancient Hindu text written in the Sanskrit language. Human body has three basic physical components Dosa, Dhatu and Mala, which are responsible for the stability of the body in their natural state while disequilibrium state causes diseases. There are two main objectives of Ayurveda-first is to maintaining health of individual and second is to alleviating ailments of diseased. Susruta says that, one who's Dosas (humors), Agni, Dhatu and Malas are in balanced state and whose senses, mind and soul are functioning properly is a healthy individual.

Ama

Ama is also an entity which causes vitiation in Dosa, Dhatu and Mala. Ama is a pathological entity and causes abnormality in Srotas, Dhatu etc resulting into development of various diseases. Ama is responsible for the initiation of many diseases in body hence during the description of synonyms of Vyadhi, Amaya (disease produced due to Ama) synonym is also given. The term Ama is literally means unripped, immature or incompletely formed is referred in Ayurvedic medicine as the factor, which arise or event, which follows as

consequence of hypo functioning of Agni. The substance, which is not properly digested, disintegrated, foul smelling excessive in quantity, slimy in nature and produces stiffness of the whole body is known as Ama. Ama is produced also due to accumulation of by-products of metabolism as well as metabolic waste not properly eliminated or utilized in the body. Here it is noteworthy that whenever there will be improper metabolism due to impaired functioning of Agni then only Ama will be formed. This process is an outcome of the deviation of main metabolic pathway in the direction to form defective metabolic end products. Ama is a condition that occurs when the immune system mistakenly attacks its own constituent parts as self and destroys its own cells and tissues. The Ama and antibodies then interact with each other to form an immune complex's and damages the joints and other body parts leading to acute pain and swelling. According to new researches, it has been stated one of the most attractive explanations for the autoimmune phenomenon has centered on the exposure to various environmental factors such as infections that are capable of initiating disease in genetically predisposed individuals. Synovial fluid of patients with rheumatoid arthritis shows the presence of bacterial DNA and their products arising from naturally occurring commensalism in the gut and

other mucosal surfaces. One explanation for the presence of gut commensalism in the joints of rheumatoid arthritis patients could be a leaky gut or loss of intestinal integrity that facilitates the migration of gut commensalism or their products to the peripheral organs. The bacterial products released in the joints may result in local and systemic immune stimulation.

Dhamani- To understand the concepts of Dhamani, we should first understand the relation of Srotas, Sira, Dhamani and Nadi. We generally relate all these as the channels of the body which are assigned a job of carrying substances within the body. It is well admired fact that Acharya Susruta managed to trace even minute channels present in the body even when they were very difficult to be traced with naked eyes. He was able to recognize the ever pore in the skin that had its own nerve, blood and lymphatic supply. Acharya Charaka said that, there were about 700 Siras, 200 Dhamanis, which could be easily enumerated but when the minute Siras and Dhamanis were counted with their tributaries and branches, their number was estimated to be the same as the number of hair follicles which was distributed throughout the body. Approximately their number was calculated at 2 99567. Acharya Charak has described about the circulation enumerated Dhamani (artery) as the first of transporting channel in which due to the each beat of heart pulsation occurs because of Dhamanat (pulsation) arteries called as Dhamanis. In the order Srotansi come second for which Charak has mentioned that because of Sravanam (oozing, filtering or permeation). This is called Srotas (Sravanat Srotamsi). In the perspective of modern anatomy and physiology it can be well understood that in the circulatory cycle arteries are the first structure through which blood goes to the different parts of the body further these arteries are branches and re-branch as finer arterioles. The arterioles are further branched into finer capillaries through which the nutrient materials to the tissues are supplied by oozing and permeation. The structure as, Siras (veins) taking part in circulation are stated as third in the order. After Srotamsi come Siras for which Charak has mentioned that because of Sarana.

Free Radical- There is some views suggesting those free radicals are pathologically correlated with Ama. In this regard it is said that property and manifestation of free radical are similar to those of Ama. Free radicals are an unpaired electron. When a molecule loses or gains a single electron in its outer orbit, it becomes free radical. Thus a free radical is defined as, a molecule that can exist independently for a period of time with one or more unpaired electrons. Free radicals are unstable chemicals formed in the body during normal metabolism and exposure to environmental toxins such as environmental pollutions. These free radicals and other reactive oxygen species such as super oxides, H_2O_2 and OH radicals are molecular species capable of independent existence that. They are unstable chemical formed in the body and can cause degenerative changes and other diseases.

Transportation of Ama

The digestion of food is carried out from oral cavity up to the small intestines and absorption of digested food starts from small intestine to large intestines into the venous system. The main factor concerned in the production of Ama is Mandagni and impairment of the mechanism responsible for the secretion of the digestive juices. The absorption of Ama starts from intestine to enter into the venous system. The absorption at small intestines is the most important, which drains mainly by superior mesenteric vein and inferior mesenteric veins. The superior mesenteric vein and splenic vein combines to form portal vein and inferior mesenteric vein will be attached to the splenic vein. The portal vein now enters into the liver where maximum metabolic process are completed and from there the absorbed food materials along with blood will enter into inferior vena cava which ultimately reaches to the right atrium which is mixed along with the deoxygenated blood drain from the whole body. From right atrium it reaches to the right ventricle and from there through pulmonary trunk it reaches to lungs, where it is converted into oxygenated fluid and reaches to left atrium through pulmonary vein. Then it enters into the left ventricle from here the heart first receives the blood with Ama and then it gives to rest of the body through aorta for nourishment of the tissues. Now Ama enters into small and big joints through articular arteries. In Ayurveda these Dhamanis are called as Rasavaha Dhamanis. Amavata- Amavata is most common chronic joint disease which is spreading very fast now-a-days and correlated with rheumatoid arthritis. In Amavata as Ama gets accumulated in the joints leads to restriction in movement of joint, pain, tenderness, swelling in affected site or joint. Ama is major factor for production of Amavata. Due to ingestion of the etiological factors like disagreement dietetics and drinks, hindered activities or behavior, slowness or inactivity in the digestive mechanism Amavata is generated. Unchangeable or sedentary habits, consumption of sticky food followed by exercise etc. disturbs the normal function of Agni. As a result, food not properly digested, yields Amarasa in the Amashaya and this undergoes fermentation and putrefaction because of its retention for longer duration, manifests Ama. Then it absorbed in the system and is taken up by the aggravated and vitiated Vayu especially to the Kaphasthanas mainly Amashaya, Sandhi, Uras, Kantha etc. and the same undergoes in the above mentioned sites and enters the Dhamani by circulation with the help of Vata. Here it amalgamates with the existing Dosas and vitiated further in excess and produces distress in the body channels due to its excessive unctuous nature and some other different qualities of Amarasa. This leads to general weakness and heaviness in the pre-cordial region and this Amarasa is responsible for the genesis of symptom complex, that's why this disease is considered challenging and difficult to treat. So, both Ama and Vata aggravates simultaneously and enters Kosta, Trika and Sandhi and ultimately leads to Stabdghata (stiffness) in the body, this is called 'Amavata'

Etiological Factors

Charaka has very elaborated view regarding etiology and pathogenesis of Ama. He says that not only food taken in excess quantity cause production of Ama but heavy, cold, dry, impure etc. diets may also cause Ama. He also indicates mental factors causing Ama like anger, greed, jealousy, grief, fear etc. Intake of wholesome food in proper quantity do not get properly digested when individual is afflicted with these mental conditions. Again the impairment of Agni may be brought about by abstinence from food, indigestion, never-eating, irregular diet habits, indulgence in incompatible food items, the consumption of cold substances, mal-effects of Virechana, Vamana, Snehana, wasting of tissue due to diseases, unfavorable changes in place, climate, season and suppression of natural urges cause impairment of Agni which fails to digest even the most easily digestible light food. Thus, the undigested food attains fermentation leading to the onset of toxic state. Thus produced Ama when get amalgamated with tridoshas and dhatus as well as mala, a condition called sama is produced. Wherever Ama situated and vitiated by Dosas it produces respective symptoms and disease. Chakrapanidutta says that, manifestation of certain reaction inside the body due to under processed Annarasa is called Ama-Pradosha. Acharya Gangadhara says that resulting action of Ama inside the body is called Amadosha.

DISCUSSION

According to Susruta, a disease is produced in six steps viz. Sanchaya, Prakopa, Prasara, Sthanamsraya, Vyakti and Bhedadvstha. In case of diseases produced by Ama, Sanchaya of Ama is first step. It happens due to impairment of Agni at that place. Similar is the case with free radicals. At certain site due to impairment in action of free radical scavengers, increased production of free radicals takes place. When this accumulation of Ama is in small amount it does not cause any major problem, but if treatment is not given, this Sanchaya exceeds the threshold. Then it starts producing minimal symptoms, this is the state of Prakopa. After this state, Ama goes into circulation. Now this Ama requires a site for creating disease in form of Kha-vaigunya, which should be considered as weakness in any body tissue. Therefore depending upon this site of Kha-vaigunya different diseases are produced in different manner from same root cause, i.e. Ama or free radicals. This is the Sthana-Samsryawastha. Now symptoms of diseases become very clear. After this stage, pathology at gross level becomes visible. If even at this stage the disease is not treated is not treated it leads to complications, which are described in Ayurvedic classics as Updravas. From above discussion, it becomes clear that the method of production of disease at its basic level is described in similar manner in modern as well as in Ayurvedic literature. The Madhava Nidana states that when the digestive fire is weak and Ama is allowed to accumulate, it moves to the different locations of Kapha in the body. Kapha is derived from the Sanskrit root word 'Shlesh,' which means 'to embrace.' Thus, Kapha binds the joints

together, nourishing and protecting the articular surfaces. Like Ama, Kapha is Guru, Snigdha and Shita in nature. For this reason, Ama typically associates with Kapha before the other two Dosas. When Ama is allowed to accumulate in the joints they become congested. Soon the Dhamanis (circulatory channels) that supply these regions become congested as well. Eventually this blockage affects the Hridaya (heart). Once Kapha has become vitiated the other Doshas eventually become involved. To restore homeostasis the body will initiate local inflammatory processes (i.e. Pitta) in the joint in order to cook the accumulated Ama. Despite the inflammatory component of this condition however, the hallmark of Amavata is the progressive pathological influence of Vata in the synovial joints, and the resultant joint degeneration. Although Amavata is primarily a disease of Vata, it is differentiated into three basic subtypes, namely, Vata, Pitta, and Kapha. This differentiation allows the practitioner to identify a greater range of subtlety within the diagnosis and treatment of Amavata. There may also be a combination of any two or three of the Dosas. If one Dosa is involved the condition is said to be easy to cure. With two Dosas the situation is more difficult, and with all three Dosas in a state of vitiation the condition is said to be incurable. Similarly, when there is migrating pain and severe inflammation in the joints of the hands, feet, head, heels, waist, knees and thighs, Amavata is said to be incurable.

CONCLUSION

Ama is the root cause of nearly all the diseases. Though all the Dosas take part in the causation of the disease, yet as clear from the term 'Amavata', Ama and vitiated Vata play the dominant role in the pathogenesis of disease. It is produced mainly because of Mandagni (decreased digestive and tissue fire) i.e. impairment of the mechanism for the secretion of digestive juices and thereby digestion. Food which is not properly digested, remains in the stomach whether half digested or not full digested and stays there for some time after that it starts moving in the channels of body and creates obstruction (Strotorodh), after that it leads to production of diseases and produces symptoms like pain and stiffness in the body. According to above description, it appears that Amavata of Ayurveda is very much similar to rheumatism of modern medicine. Rheumatism is a general term to indicate any painful disorder in which the peripheral symptoms are related to joints or their supporting structures. Due to the similarity of its biophysical properties, Amarasa goes to Slesmasthana through Dhamanis and stays there. Here it is a contaminated further and comes through Siras in general circulation in the body where it is vitiated by various Dosas and is converted into an extremely virulent substance, which has got the tendency to localize itself into various joints. This extremely virulent state of Ama may be compared with the antigen in the complex etiology of rheumatoid arthritis.

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