



An Applied Physiology on Sthaulya (Obesity) Disease- A Lifestyle Disorder

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ABSTRACT

Obesity is one of the dietary lifestyle illnesses that has an influence on both developed and developing countries. Obesity is a condition marked by an increase in body weight and the buildup of fat. Obesity is the root cause of calorie overconsumption and physical inactivity, which leads to serious health issues. In nature, multifactorial, with aetiology playing an equal part in environmental, lifestyle, and genetic effects. Ayurveda is an ancient science that explains both the fundamental and practical principles of health, sickness, and management. The word Medasvi refers to a person's nutritional status, implying that they are well-nourished rather than ill. Sthaulya, a branch of the Medovridhi, studies classical obesity, which is defined as endocrine imbalance rather than rational adiposity. Obesity is the most common dietary condition in wealthy societies. Sthaulya is discouraged by society for both social and medical reasons. Obesity is commonly linked to poor eating habits and a lack of regular exercise.

Keyword: *Sthaulya, Medodhatu, Obesity, etc.*

Introduction

A happy and balanced state of Atma and Indriya, as well as a healthy state of our body's Dosha and Dhatu, Agni, Mala Kriya, and a happy and balanced state of Atma and Indriya, all play an important role in our body; if they are in equilibrium, there is no illness; if they are vitiated, they trigger several diseases.¹

Sthaulya

Over satiation, high sweet, cold, fatty food intake, lack of physical activity, day sleeping, enjoyment, and other factors induced by Nidana Sevan contribute to Medodhatu vitiation, which manifests as abdominal and flank region enlargement and is also responsible for conditions such as Swasa, Kasa, and others. Sthaulya Lakshanas include Anutsaha, Swedaadhikyata, Ayasenswasa, Nidradhikya, Adhika Kshudha, Atipipasa, Alpa Vyayama, Angagourava, Angasithilata, Gatradasa, and Dourgandhya, which are caused by a vitiated Medo Dhatu. As a result, the management of Ahara and Vihara is critical. Ushnodaka is a Special Dravadravya explained by Yogratnakara under Jala Prakrana, which has a positive function with Lekhana, Deepan, Medoghna, property in the management of Sthaulya Ushnodakpana, removes excess Meda through the excretory technique, and is also advised to be regular. Under Vihara in Charaka Samhita, Vyayama practise gives lightness, capacity to work, steadiness, pain resistance, and alleviation from Doshas (especially Kapha). Vyayama removes excess Meda from the body through the excretory system and enhances compactness with Aptarpan Karma, Laghu Karma, Deepan Karma, and Medoghna Karma.

Methodology

Materials on Sthaulya (Obesity) were provided by many newspapers, ayurvedic and modern text books, authoritative pages, reputable magazines, literature, manuscripts, Sanskrit Shabdakosha, and other sources.

Historical retrospection of *Sthaulya*

The Vedas are said to be the world's oldest and earliest literature. There are four Vedas: Samaveda, Yajurveda, Rigveda, and Atharvaveda. Ayurveda is said to be the Upaveda of Atharvaveda. The history of Indian medicine began with Veda, and Sthaulya's history may be traced back to Veda. The historical elements of Sthaulya and Sthaulya have been tracked from the Vedas era till today, since Sthaulya was not a popular name until the time of Samhita and Sthaulya's illness is closer to its aetiology. According to the available evidence, Madhava Nidana was the first work to utilise the term Medo Roga, which was then adopted by Sharangadhara Samhita and Yogaratnakara. However, the term Sthaulya was used only in Sharangadhara's Deepika commentary and was later defined by Bhavaprakasha Samhita.

Sthaulya

Etymology:

Meda is derived from the root "Jhimida Snehana," which stands for Sneh, fat, oil, and so on². This implies that the chemical with Snigdhatva properties is known as Meda. However, there are numerous compounds in the body that belong to Snigdhatva, such as Vasa, Majja, Vapa, and so on.

Composition of *Meda* in *Ayurveda*:

Sneha has a lot of different tissues in her body, including Meda, Vasa, and Majja. Snehatva is a characteristic shared by all three, although its composition and function differ³. When Sneha is present in Anu Asthi, it is termed Sarakta Medas, and when it is present in Sthula Asthi, it is called Majja. Vasa⁴ is the purest form of Sneha found in Mamsa (Peshi). Medo Dhatu is noteworthy among them since it is involved in the development of several metabolic disorders such as Medoroga, Prameha, and others. Pathology of

Medhodhatwagnimandhya refers to the circulation of excess homologues Poshaka Medo Dhatu, which can be linked to diseases like obesity.

Types of Meda Dhatu:

Two types of *Meda* are described in *Ayurveda*⁵:-

Baddha Meda

Fat that is not in circulation and is stored in the form of fat in various areas (fat depots/muscles throughout the body).

The other type is *Abaddha Meda*

The fat that circulates in the body with the blood is referred to as lipid type (Cholesterol, Triglycerides, LDL, HDL & VLDL etc.). Poshya and Poshaka Medo Dhatu are the other names for these two. Poshaka Medo Dhatu circulates throughout the body with Rasa Rakta Dhatu in order to provide nutrients to Poshya Medo Dhatu. Using various visualisation approaches, it can be visualised that the blood circulates lipids as well as cholesterol⁶. Second, Poshya Medo Dhatu, found in Medodharakala, has been pinpointed. Medodhara kala takes place in Udara (abdomen) and Anuasthi (bones). Udara, Sphika (buttocks), and Stana are also Poshya Meda depots (breast tissue).⁷

Formation of Medo Dhatu:

Dhatu is continuously being produced, dismantled, and reconstructed using proper elements taken from Poshak Dravya from the moment of creation until the time of death. The seven kinds of Dhatwagnis are in charge of converting adequate nutrition ingredients existent in a potential shape in the Ahara Rasa into the matching Poshaka or Asthayi Dhatu (precursor Dhatu) till the same is created as part of the Poshyas or Sthayi Dhatu concerned. In this way, the Sthayi Ahara Rasa circulates around the Medo Dhatu, supplying it with the nutrition Ahara Rasa, as well as a large amount of Sneha. That is correctly stated by Acharya Kanthadatta in his 'Madhukosha' commentary-'Snehat medo janayati'⁸ Jatharagni Paka makes subsequent advancements in Sneha, which are referred to as

1. Step: Change Guru to Laghu and Sthula to Sukshama, i.e., a long-chain triglyceride to a short-chain triglyceride.
2. Step: Sara Bhaga, which is generated by Jatharagni at the conclusion of digestion, travels via Bhutagni Paka, in which Laghu Guna is converted back into a guru, i.e., Triglyceride re-esterification occurs in the small intestinal mucosa.
3. Step : Sneha's subject is Dhatvagni Paka. Nyaya Kedarikulya claims that

4. Step: Sneha travels to each Dhatu and is transformed according on the necessity, absorption, and consumption of their individual Dhatuagnis. Medo-Dhatvagni, for example, digests Madhura Rasayukta Sneha after passing through Rasadi Agni's digestion.

Moola of Medovaha Srotasa:

The Medodhatu is carried by macro and micro channels in the Medovaha srotas⁸ in Ayurveda. The source of the Medovaha srotus is Vrikka & Vapavahana, according to Charaka, Sushruta, Vrikka & Kati, and Vagbhatta Vrikka & Mamsa. Their perspectives differ, which explains the disparity. The name Moola refers to a root, which can be a genesis root, a manifestation root, or a diet root, among other things. In the case of Medoroga, adipose tissue is deposited into theca abdomen, notably the omentum and subcutaneous region, which is plainly indicated by the adipose tissue.

Function of Medo Dhatu:

The functions of Meda Dhatu⁹, according to Sushruta, are Sneha, Sweda, and Asthi Pusti. Snehana is the major aspect of Meda Dhatu, and Snigdha Gatrata is caused by Meda Dhatu's over-functioning, which is one of Sthaulya's symptoms. Asthanga Samgraha has identified Netra and Gatra Snigdhata as extra activities of Meda¹⁰. This Sneha characteristic aids in the maintenance of skin, hair, and eye shine, among other things.

Derangement of Metabolism (Parinama) of Medas:

Agni is in charge of all physiological functions in the body. It is purely due to any increase or decrease in Dosha, Dhatu, or Mala. The vitiation of Agni has major health repercussions at various levels, depending on the type of Agni involved. As Agni declines, it leads to a variety of metabolic disorders and releases "Ama" (undigested/partially digested molecules), implying that Agni fails to convert Vijatiya (non-assimilable) Dravyas into Sajatiya (assimilable) Dravyas, and the Dhatus are unable to absorb the end products.

These substances are hazardous to the body and, as a result of their existence, can cause indications and symptoms at various stages of physiological development. If Agnimandya is present at the Dhatwagni stage, nutrients in circulating Ahara Rasa or circulating Poshaka Dhatu would be unable to be absorbed by the individual Dhatus. As a result, in Ahara Rasa, some Poshaka Dhatus will collect in unpredictable amounts and in unusual locations. This approach is known as Leenatwa (deep seated) of Ama in Dhatus. This form of Leenatwa can be caused by a number of conditions. In Ayurveda, there is no obvious link to a single disease agent that is especially linked to excess weight, obesity, and hypertriglyceridemia. Furthermore, some researchers have opposing viewpoints on the nearest possible overweight condition that might potentially be a cause of hypertriglyceridemia, such as obesity.

1. *Rasagata Sneha Vriddhi,*

2. *Raktagata Sneha Vriddhi,*

3. Medoroga or Medodosha,
4. Ama Medodhatu and its advanced stage can be
5. Shonita Abhishyanda,
6. Kapha Medo Margavarana,
7. Kaphaja Hridroga.

Nidana

Nidana is the term used to describe the circumstances that cause the illness to develop. Because Nidana Parivarjana, or the cessation of the etiological reasons, is the first line of treatment for any ailment, evoking cause is a crucial element of diagnosis and treatment. In the Charaka Samhita, there is an empirical definition of Nidana of Sthaulya (Medoroga). Exogenous influences (Meda increasing diet) cause endogenous participation of variables like Dosha, Dhatu, Mala, and Srotas, among others.¹¹

Vishista Ahar Avastha:

It necessitates the use of particular dietary, behavioural, and psychological factors that contribute to Medo Roga. By adopting Samanya Siddhanta, these variables result in a direct rise in the Medo Dhatu, either due to similarity in characteristics or similarity in behaviour. The variables identified by Acharya Charaka as contributing to overnutritional diseases (Santarpana janya vyadhi) might also be considered overweight etiological causes. Medovaha Sroto dushti induces the Meda Dhatu state of Khavaigunya due to¹² factors such as high consumption of Medya Ahara and Varuni.

2. Aharaja Nidana:

A). Gunataha: Due to the associated Bhautika composition, Guru, Madhura, Sheeta, Snigdha, Shleshmala, Atipicchila, and Abhishyandi qualities in Ahara that dominate Prithvi and Apa Mahabhuta might induce a direct rise in the Kapha Dosha, Medo Dhatu, and Pitta Dosha.

B). Dravyataha : Navanna, Navamadya, Gramya Rasa, Audaka Rasa, Mamsa Sevana, Paya Vikara, Dadhi, Sarpi, Ikshu Vikara, Guda Vikara, Shali, Godhuma, Masha, Varuni Madya are some of the items that might help Meda Dhatu.

Bhojana Vidhana:

1. Aharaj Nidana:

Adhyashana, Vishamashana, Samashana, Viruddhashana, Atyambupana, Jalapana Bhojanottara, and more. Overeating (atisampurana) causes extra energy storage, which surpasses consumption. Extra carbs are converted into butter, proteins, or fats, as shown above. Excessive calorie consumption from any dietary source, along with weight growth, can lead to an increase in VLDL overweight. Ama is created by factors

2. *Viharaja Nidana:*

3. *Manasa Nidana:*

Shatkriya Kala:

Sanchaya:

Prakopa:

Prasara:

In Prasara Avastha, Dosha extends and applies to various bodily parts, organs, and systems. The vitiated Doshas in this Avastha, according to Sushruta, expand and overrun the bounds of their respective locations. The vitiated Kapha and Pitta Dosha can spread to other areas of the body through this site and other sites related to it, producing incapacity.¹⁵

Sthana Samshraya:

This stage is defined by the localisation of the vitiated Dosha, which signals the start of illnesses specific to particular systems. Dalhana defines this process as one in which the vitiated Doshas have grown and spread to other parts owing to Srotovaigunya or the pathological interference of the linked Srotasa leading to an association between the Dosha and the Dushya. This occurs during the Srotasa stage and is known as the prodromal or Purvarupa phase.¹⁶

Vyakti:

This stage is when all of an infection's signs and symptoms appear. Different signs of a disease are evident here to comprehend the continuing pathology. Various symptoms of the illness can be appreciated depending on the localisation platform. Circulating lipoproteins can show up as xanthelasma, xanthomas, corneal arcus, and even additional systemic symptoms including dyspnea, paresthesia, and overweight tiredness. There are also the fundamental indications and symptoms of Medo Roga, Prameha, and Dhamani Pratichaya.¹⁷

Bheda:

This stage¹⁸ describes the chronicity of the disease to the point where it becomes sub-acute or incurable. It pertains to the progression of obesity, regardless of whether the unresolved chronicity leads to significant illnesses like atherosclerosis as a result of ailments like myocardial infarction, cerebral strokes, and so on.

Purva Roopa

Sthaulya is not preceded by any warning signs or symptoms. The Avyakta Lakshanas of Sthaulya can be called its Purva Roopa. Sthaulya's Purva Roopa refers to the emergence of moderate Ama/ Sthaulya like Lakshana heaviness in the body, exercise dyspnoea, and indigestion in patients.

Roopa

In the majority of Sthaulya may patients, there are no problems. It happens when lipid levels in the blood rise together with a spike in B.M.I. Sthaulya's symptoms, on the other hand, might be addressed as fatigue, paraesthesia, disorientation, and shortness of breath.

Samprapti

Samprapti develops the entire illness pathway, from the start of the anomaly of Dosha to the current condition of the disease. The alternative mode of etiological factors, in which Santarpana Ahara Vihara plays a significant role, makes Rakta Margavarana conceivable. This causes an unnecessary build-up of irregular Kaphadosha and Medodhatu in Raktavahasrotasa. Raktamarga is hampered by its unique features, such as Picchhilatwa, Upalepakaratwa, and so on. Because the work of Chalatawa is largely due to Vata Dosha, it also causes vitiation of Vatadosha when the normal motion of Dhatu is interrupted.

Obesity is produced by an abnormal build-up of Kapha and Meda, according to Sthaulya Samprapti. Morbid Sleshma increases as a result of frequent and unhealthy indulgence in Sleshma dominating Ahara, as

well as poor exercise, forming Dhatugata Ama when coupled with Apakwa Annarasa. As a result, the food consumed does not properly and uniformly convert all tissues (Dhatu). The Ahara Rasa is immediately converted to Medodhatu, exceeding other Dhatus at the level of Medodhatu, resulting to impaired bio-transformation. As a result, other bodily tissue does not receive adequate nutrition.

As the route progresses, there is a rare and severe accumulation of morbid Medodhatu in various bodily channels. The obstruction in the canal creates obstacles in the direction of Vatadosha (Normal movement of Vata is indispensable for preserving homeostasis of body). Both of these things eventually lead to a medical condition known as Medasavrita Vata (encapsulation). The morbid Vata that gets trapped in the GI tract enhances the Jatharagni, allowing all nutritious elements to be digested early and fast, resulting in an insatiable hunger for food and beverages¹⁹.

Upadrava

If Sthaulya is not treated, it can lead to other disorders including Sthoulya, Atisthoulya, and Prameha, as well as a variety of problems. According to Acharya Charaka, there are ²⁰ Ashta Doshas of Atisthoola Purusha, which might be regarded as the overweight Upadrava:

Pathya-Apathya: ^{21, 22}

Food products, medicines, and regimens that do not negatively impact the body or mind are classified as Pathya and are recognised as Apathya in the same manner that those that negatively affect the body are. The tradition of proper Pathya-Apathya coupled with illness management is one of the unique characteristics of Ayurvedic medicine.

When it comes to Medoroga's Pathya Ahara, it's important to note that the Ahara Kalpas should always be Kaphahara and Medohara.

Discussion

Life style and behavioural modifications:

As previously indicated, the discrepancy between energy intake and expenditure is the most significant aetiology of all illnesses produced by Kapha Medo Marga varana. Obese people must make such lifestyle changes that will help to minimise inequality. As a result, the most important aspect of it is good bodywork. Certain workouts that are required for his strength and endurance should be chosen, according to Ayurveda's advice. A proper amount of sexual intercourse is one of the greatest alternatives for weight loss. The nature and degree of sexual contact must be determined by the season and the individual's structure. Night outs and avoiding day sleep are also beneficial in this regard. Another important consideration is the activity of the mind. A sluggish and gloomy mind would always make a person idle. Overweight people and those with a history of Kapha Medo Margavarana must endeavour to be mentally active by engaging in positive and realistic concepts.²³

Sadhyaasadhyata:-

Medoroga is recognised as a Kricchra-Sadhya Vyadhi. Medoroga's poor prognosis has been linked by Acharya Charaka to the fact that if an obese person is not properly treated, he is prone to death owing to excessive hunger, thirst, and complications. Sahaja Medoroga is also known as Asadhya. Only simple patients with more Bala and less chronicity are curable, according to the Vagbhata Medogata illness enumeration. Medoroga is classified as Asadhya Vyadhi by Vagbhata because of its relapsing and demanding nature.²⁴

Chikitsa: -

Karshya, according to Acharya Vagbhata, is superior than Sthaulya²⁵ since Sthaulya 25 lacks a proper cure. Tikshna Jatharagni and Medo Dhatvagni mandya are the two most important factors in the Samprapti. Krichha Shadhya illness is caused by irrationality between two phases of Agni, however Panchkarma treatment may be a superior cure for this condition. Ayurvedic writings mention several Shodhna procedures for the care of Sthaulya, Vamana, Virechana, Lekhana Basti, and Raktamokshana. Shamana Chikitsa can be performed in a variety of ways.²⁶ It is the perfect treatment for the disease's Sama condition, Deepana, Marut sevana, Kshudha Nigraha, Pachana, Atapa sevana, Trusha Nigraha, Vyayama in Samtarpanajanya Vyadhi, Amashyotha Vikara, Shleshmika Vikara, Rasaja Vikara, and it is the perfect treatment for the disease's Sama condition, Deepana, Langhana is recommended. According to Rogi-Roga Bala, all seven types of Langhana can be given to Sthaulya patients.

Conclusion

Dushya's main Vyadhi is Sthaulya. Vitiate Vata Kapha-Meda is an etiological ingredient. This increases the disease's severity and allows the Sthaulya Krich sadhaya to spread. Due to Meda's blockage, Vyana Vayu was unable to transfer nutrients to other Dhatus, resulting in a rise in Medadhatu and a decrease in Uttar Dhatu. Charaka found Sthaulya as the most common metabolic disorder in Ashta nindita Purusha. Sedentary lifestyles, lack of exercise, poor eating habits, urbanisation, and psychological factors such as Harshanitya and Manasonivrita are also factors to consider. Sthaulya etiopathogenesis, in addition to genetic susceptibility, plays an important role. Sthula is more likely to affect Kapha Prakriti. Obesity affects women more than males, and it increases after marriage, light job, IUCD usage, contraceptive pills, delivery, and the menopausal era, among other things. Ama Rasa, Kapha-Vata Pradhana Tridosha play an essential part in the Samprapti of Sthaulya Medo dhatvagni mandya. The Meda, Kapha, and Vata therapy modalities. It is recommended that Lekhana Basti and Virechana Karma be planned. Basti produced greater results since it eliminates Doshas from the body while also allowing ingested medicines to do their Samprapti Vighatana activity at the cellular level.

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