

## CORRELATION BETWEEN STHAULYA AND CALCANEAL SPUR

Dr. Suryakant D. Rokde<sup>\*1</sup> and Dr. Somya O. Singh<sup>2</sup><sup>1</sup>Head of Department of Rachna Sharir, Govt. Ayurveda College, Nanded, Maharashtra-431601.<sup>2</sup>P.G. Scholar, Dept. of Rachna Sharir, Govt. Ayurveda College, Nanded, Maharashtra-431601.**\*Corresponding Author: Dr. Suryakanta D. Rokade**

Head of Department of Rachna Sharir, Govt. Ayurveda College, Nanded, Maharashtra-431601.

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**ABSTRACT**

Our country was and is one of the world's most affluent nations and the affluence of sedentary habits are known to be the leading cause of obesity. This is due to a deadly imbalance of high energy input through rich food and low energy expenditure due to lack of physical exercise. *Sthaulya* (Obesity) is one of the *Medo-Roga* occurring due to vitiation of *Medo-vaha -Srotasa* and *Medo Dhatu*. Since *Medo-vaha-srotasa* and *Medo-Dhatu* both are in *vikruta awastha* or vitiated state, hence improper nourishment of further *dhatu* (*Asthi*, *Majja* and *Shukra*) is obstructed. This further leads to diseases and complications related to these *dhatu*s as well. *Adhyasthi/Exostosis* (that growth of new bone on the surface of a bone) is a related complication that has been mentioned by *Charakacharya* in *Asthi pradoshaj Roga*. One of the complications of obesity apart from Ischemic heart diseases and Diabetes mellitus is Calcaneal spur (form of exostosis). Daily and seasonal health regimens (*Swathavritta* and *Ritucharya*) and other modalities such as detailed instruction on a proper balanced diet and appropriate levels of exercise as per the constitution (*Prakriti*) of the person have been laid out clearly in Ayurvedic text. It is interesting to note that world is now focusing on healthy lifestyle as key to avoid risk factors like obesity.

**KEYWORDS:** *Medo-Roga, Dhatu, Adhyasthi, Asthi pradoshaj Roga, Prakriti.***INTRODUCTION**

The word Ayurveda is derived from *Ayu & Veda*, *Ayu* means life *Veda* means science or knowledge. Ayurveda means the science of life. *Charak Acharya* defines "That science as Ayurveda which deals with advantage and disadvantage as well as happy and unhappy states of life along with what is good and bad for life, its measurement and the life itself."<sup>[1]</sup>

For achieving good health both psyche and physique must remain in equilibrium. For maintaining physical health, Ayurveda strongly recommends the practice of *Dinacharya* (day regime), *Ratricharya* (night regime) and *Ritucharya* (seasonal regime).

According to *Sushrut Acharya* Positive health is defined as;

- 1) *Dosha, Dhatu samya* (well-balanced metabolism).
- 2) *Prasanna Atma, Indriya, Manaha* (happy state of the soul, senses and the mind).<sup>[2]</sup>

Modernization, affluence, science and technological development leads to sedentary life styles. Life style diseases are our own creation with the evolution of civilization man has become more and more physically inactive. Among number of lifestyle disorders *Sthaulya* (obesity) is one such disorder which has become a leading cause of major diseases like Hypertension,

Type2 Diabetes mellitus etc. *Acharya Charaka* listed eight defects underlying *Sthaulya* purusha as follows.<sup>[3]</sup>

- 1) *Ayuhrasa.*
- 2) *Javoprodha.*
- 3) *Alpa-vyavayita.*
- 4) *Daurbalya.*
- 5) *Daugandhya.*
- 6) *Swedabhadha.*
- 7) *Ati-trishna.*
- 8) *Ati-kshuda.*

*Sthaulya* is one of the *Medo-roga*s which occurs due to the vitiation of *Medo-vaha strotasa* and *Medo-dhatu*. Since *Medo-vaha strotasa* and *Dhatu* both are in *vikrut awastha* (vitiated), hence proper nourishment of further *Dhatu*s that is *Asthi*, *Majja*, *Shukra* is obstructed. This further leads to diseases related to these *Dhatu*s as well. Hence the management of this disease is merely insufficient in other systems of medicine and patients are continuously looking with a hope towards Ayurveda to overcome this challenge.

**DISCUSSION**

The 21<sup>st</sup> century, every person is running after life goal. Hence people do not have time to think and act for the healthy life and is not able to follow the proper regimens, dietic rules and regulations. Because of this artificial living, lifestyle, person suffers from so many disorders

himself. *Sthaulya* (obesity) is one of them. It is one of the most effective disease which affects some ones social, physical and mental features. The world health report of WHO listed obesity under the top 10 selected risks to the health. The incidence of diabetes mellitus, HTN, Angina pectoris and Myocardial infarction is higher among obese individuals. It is frequently blamed on ingestion of heavy and over food, endocrine factors, body built or hereditary etc.

#### AGNI AND STROTASA WITH REFERENCE TO STHAULYA(OBESITY).

As per Ayurveda, *Agni* is the cosmic fire, the principle of transformation of materials. It is the energy or capacity of the body to convert complex food materials into their constituents and then to build the body tissues (*Dhatu*).<sup>[4]</sup> The first and foremost level of *Agni* is digestive fire (*Jatharagni*).<sup>[5]</sup> It digests all types of food in the stomach and the small intestine. The digested and absorbed essence of the food material is called *Ahar-rasa*, which circulates providing the substrates for tissues.

For each of the seven tissues there is a special energy or digestive power (*Dhatwagni*)<sup>[6]</sup> assimilating the digested substrates. The lipid precursors are acted upon by fat-specific energy (*Medo-Dhatwagni*) for its conversion into adipose tissue (*Medo-Dhatu*). The channels and the loci where these conversions take place are called *Strotas* or *Dhatu-vaha-strotasa*. The quality of all the specific energies depends on the quality of the digestive fire, which is protected and maintained carefully. The impairment of the digestive fire and specific tissue energies lead to poor availability of the constituents and depletion of tissues (*Dhatukshaya*).

With the substrates and energies in balance all the metabolic activities occur properly in the channels. Defects in the sources with undigested matter block tissue channels. A healthy person is one in whom the activities of humor (*Dosha*), tissue (*Dhatu*), wastes (*Mala*), fire, mind (*Manas*), soul (*Atma*), and senses are in harmonics and in balance.

#### MEDO-DHATU (ADIPOSE TISSUE) AND ITS DYNAMICS

- 1) **Medo-dhatu (Adipose tissue):** Refined *Mamsa dhatu* (muscle tissue) processed by *Medagni* forms *Meda-dhatu*, additionally, sebum (skin oil) and the greater and lesser omentum are *Upadhatus* (secondary tissues). It is one of the *Sapta- Dhatu* which provides nourishment to the *Asthi-Dhatu* (skeletal tissue).
- 2) **Asthi-dhatu (Skeletal-tissue):** Refined *Meda-dhatu* processed by *Asthyagni* forms *Asthi dhatu* and *Updhatu* teeth.

#### Functions of Medo-dhatu:

- 1) Gives oiliness, softness, lubrication to the body parts.

- 2) Helps in proper sweating due to which temperature of the body is controlled.
- 3) Proper functioning of *Medo-dhatu* is very necessary for lubrication and smooth frictionless operations of all activities of bones and muscles in body.

#### Medo-vaha Strotasa(Adipose- tissue channels)

Adipose tissue channels have two origins<sup>[7]</sup>

- 1) *Vrukka* (Kidneys) with visceral (adrenals and fat).
- 2) *Vapavahan* (Omentum fat).

These channels draw the nutritive parts (*medoposhakansh*), including lipid from the ante-decent flesh (*mamsa dhatwagni*) and the transient lipids (*asthayi*) and then they are converted into a stored form (*sthayi*) of lipid.

#### Causes of vitiation of Medo-vaha strotasa:

- 1) Lack of exercise.
- 2) Sleeping during daytime.
- 3) Working in sedentary lifestyle.
- 4) Excessive intake of fatty, heavy, cold, sweet and oily food.
- 5) Intake of *kaphkara Dravya*.
- 6) *Beeja Dosha*.

#### Disease of Medo-vaha Strotasa vitiation:

- 1) *Sthaulya* (obesity).
- 2) *Ati-sweda* (excessive perspiration).
- 3) *Prameha*.
- 4) *Madhumeha*.
- 5) *Medo-granthi*.

#### MEDO-ROGA

*Sapta-Dhatu* (seven tissues) of the body at their optimum level, leads to health of both mind and body.

*Vikruti* (vitiation) in any of the *Dhatu* that is either

- *Pramantaha* (quantitatively) or
- *Guntaha* (qualitatively) affects the body and mind both.

*Medo-Roga* is a general term which includes many *rogas*. *Sthaulya* is one *roga* amongst the *Medo-rogas*.

#### STHAULYA/OBESITY

*Sthaulya* has been derived from the word "*Sthoola*". *Sthoola* is a *guna* (quality) which does *Brumhan* or brings about bulkiness. It increases tissue weight.

**Sthoola** - Of big size.

**Jadyata** - Physical and mental inactivity.

**Gaurava** - Heaviness due to *Guru guna*.

*Sthaulya* is a condition which increases the body fat which is *vikruta Medo-vruddhi* that is excessive accumulation of fat. To be more specific *Pramantaha vikruti* of *Medo-dhatu* is *Sthaulya* that occurs due to vitiation of *Medo- vaha strotasa*.

OR

Any disequilibrium in *Kapha* humor, fat specific energy, and waste products of adipose tissues (*Kleda*) leads to

dysfunction of adipose tissue (*Medo-Dhatu*) that leads to *Sthaulya* or obesity

**OBESITY:** As per modern science obesity is a condition in which the body weight is 20% more than the desired body weight. Today more than 40% of population is having 20% or above the ideal body weight.

#### CAUSES OF *STHAULYA*/OBESITY

- 1) *Aahar* (food)
- 2) *Vihar* (lifestyle)
- 3) *Sahaj & kulaj* (Genetic and Hereditary)
- 4) Mental condition and endocrine gland or reduced secretion of hormone of thyroid, pituitary, adrenal or testis.
- 5) Certain drugs like steroids and anti-depressants.

#### ACCUMULATION OF *MEDA* IN THE BODY

In normal condition *Meda* is located in bones as well as at the level of abdomen.

According to *Acharya Charaka* the voracious appetite of obese people tends to increase in human (*Vata*) and digestive fire, which together rapidly consumes ingested food.

This leads to increased frequency and amount of food intake. This further increases the fat accumulation, particularly in the abdomen, breasts and buttocks. The extent of fat accumulation, in these parts is so great that they become pendulous.<sup>[8]</sup>

Accumulation of *Meda*(fat) is more in females than males. In females the fat gets accumulated more on buttocks causing 'Pear-shaped obesity'. In males the fat gets accumulated more on abdomen and around the belly causing 'Apple-shaped obesity'.

#### COMPLICATIONS OF *MEDO-ROGI* OR *STHOOL* PERSON.

In *Medo-roga* due to vitiation of *Medo-dhatu* and its aggravation, the *Strotasa* gets obstructed causing improper nourishment of other *Dhatu* (succeeding tissue, that is *Asthi Dhatu*) and only *media* gets increased.

In *Dhatu Poshana Krama "Poorvam-Dhatu Param Kuryat"* which indicates that it is the preceding *Dhatu* that nourishes the succeeding one.<sup>[9]</sup> In the situation where *Medo-Dhatu* gets nourishment more than it normally should, it is the *Dhatu* that succeeds *Meda* viz *Asthi*, *Majja* and *Shukra* that do not receive proper nourishment. This leads to various other complications of the leading *Dhatu*s also (example various *Asthi Dhatu Vikaras*).

#### WEIGHT BEARING BONES AND JOINTS OF OUR BODY

- 1) Lower spine.
- 2) Knee joint.
- 3) Ankle joint.

- 4) Tibia.
- 5) Foot Bones (The Calcaneum ad Tarsal).

#### CALCANEUM

The calcaneus (Heel bone) is the largest of the Tarsal bones and the largest bone of the foot.

The half of the bone closest to the Heel is the Calcaneal Tuberosity. On its lower edge on either side are its lateral and medial processes.

#### CALCANEAL SPUR

Bony outgrowth from the calcaneal tuberosity. It is a form of exostosis (also known as bony spur) that is formation of new bone on the surface of a bone.<sup>[10]</sup> When the bone is exposed to constant stress, calcium deposits build up upon on the bottom of the heel bone. Repeated damage can cause these deposits to pile up on each other causing a spur shaped deformity.

#### Types

- 1) Inferior calcaneal spur.
- 2) Posterior calcaneal spur.

#### Causes of Calcaneal spur

- 1) Obesity
- 2) Flat foot
- 3) High heeled shoes.

**Symptoms:** Intense stabbing pain (maximum once the person gets up from bed).

#### AYURVEDIC ASPECTS OF *MEDO* AND *ASTHI PRADOSHHAJA ROGA*

According to *Acharya Charaka* diseases that occur due to vitiation of *Medodhatu* includes the prodromal symptoms of *Prameha* (Diabetes) and all eight diseases that are mentioned in *Ashtauninditiya* chapter (Ch.S.Su.21).<sup>[11]</sup>

*Acharya Charaka* while describing about prodromal symptoms of *Prameha* (Diabetes) has mentioned about the symptom '*KeshanakhaAtivrudhhi*' (excessive growth of hairs and nails).<sup>[12]</sup>

While describing the diseases occurring due to vitiation of *Asthi Dhatu* *Acharya Charaka* has mentioned about the symptom '*Adhya-asthi*' (exostosis that is growth of new bone on the surface of a bone).<sup>[13]</sup>

#### CORRELATION BETWEEN *STHAULYA* AND CALCANEAL SPUR

*Medo-Roga* is a general term which includes many *Rogas*. *Sthaulya* is one *Roga* amongst *Medo-Roga*. As earlier discussed, that *Pramantaha Vikruti* of *Medo-Dhatu* leads to *Sthaulya* (Obesity). *Sthaulya* (Obesity) within itself is a disease and leads to many related complications. Amongst these complications one is the improper nourishment of the leading *Dhatu*s after *Medo-Dhatu* that is *Asthi*, *Majja* and *Shukra Dhatu*s respectively.

Also, as per *Acharya Charaka* vitiation of *Asthi-Dhatu* leads to *Adhya-asthi* (exostosis that is growth of new bone on the surface of a bone). Calcaneal spur is one such complication of Obesity where there is bony outgrowth from Calcaneal tuberosity that is also a form of exostosis.

### CONCLUSION

*Sthoulya* is an abnormal and excess accumulation of *Medo-dhatu*. It is now affecting the population of all age categories and has become the leading cause of many other life style disorders like Type2 Diabetes, complications like Arthritis, and life-threatening diseases like stroke, and Ischemic heart disease (IHD). All these complications and disorders occur due to disequilibrium of Dasha, Dhatu and Malas. Abnormal increase of preceding dhatu henceforth leads to abnormal increase of the leading dhatus as said by Acharya Sushruta (*Purvaha purvo ati vrudhhatwat vardhayetdhit param param*).<sup>[14]</sup>

Hence in Ayurveda Health does not mean mere absence of disease but it means that mind and spirit should also be *Prasanna* (happy). Complete psycho-somatic equilibrium is the key of *Swasthya* (health). This health is only possible when all the Dasha, Dhatu and Mala are in equilibrium.

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