

## AYURVEDIC UNDERSTANDING AND MANAGEMENT OF STHOULYA (CHILDHOOD EXOGENOUS OBESITY) - A CASE REPORT

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### ABSTRACT

Childhood obesity is rapidly increasing throughout the world with its health hazards. It implies excessive fat and not merely an excess weight. The markers of obesity are Body Mass Index, Weight for height, Skin fold thickness and Waist Circumference. It is an underemphasized health issue among children. Last decade has witnessed a rise in the cases of childhood obesity. When a person presents with features like *MedhaMamsaathivridhi*, due to excessive growth in *Sphik, Udara & Sthana* is known as *Sthula* and that state is called *Sthoulya*. *Nidana* can be understood under the headings of *Aharatmaka, Viharatmaka* and *Beejadoshajanidana*. *Kaphadoshaprakopa* happens and the food remains uncooked and turns sweeter and thus the *Rasa dhathu* which gets circulated throughout the body produces *Medhas* because of its *Snigdhatva* and that is known as *Sthaulya*. The *Lakshanas* of *Sthaulya* are *Ayushyohrasa, Javoparodha, Kricchravyavaya, Daurbalya, Daurgandhya, Swedabadha, Kshudhatimatrata* and *Pipasaatiyoga*. *Chikitsasidhantha* mainly includes *Apatarpana* and *Sevana* of *Guru gunapradhanaahara* and *Oushadha*. An 8 year 1 month old female patient was brought to the Out Patient Department of Kaumarabhritya, SDM College of Ayurveda and Hospital, Hassan by her parents with complaints of excessive weight gain and associated with increased desire for food since 6 months. This condition can be understood as *Sthaulya* or Childhood Obesity. After a proper clinical examination and thorough evaluation, we have started with *Deepana-Pachana, Udwarthana* and *NadiSweda, Snehapana* and *Virechana*. There were significant improvements in the condition of the patient. Later, she was discharged with medicines, especially the one with *Sthaulyahara* effect to be continued at home.

**Keywords:** Childhood Obesity, *Sthaulya, Virechana*.

### INTRODUCTION

Obesity implies excessive fat and not merely excess weight. Body weight is not a reliable criteria for defining obesity. A few clinical parameters like Body Mass

Index (BMI), Weight for height, Skin fold thickness and Waist Circumference are usually used as markers of obesity<sup>1</sup>. The prevalence of overweight and obesity

is rapidly increasing throughout the world with its health hazards. In many developed as well as developing countries, overnutrition and obesity is one of the growing underemphasized health problems in children. Overweight is defined as a BMI for age exceeding the 95<sup>th</sup> centile of a reference population. Obesity is defined when BMI exceeds the 98<sup>th</sup> percentile<sup>2</sup>. Around 50 million children under 5 years of age are estimated to be overweight<sup>3</sup>. In the last decade, there was a rapid increase in the incidence of childhood obesity. The prevalence rate of overweight and or obesity in Indian children is going to be around 20% posing significant risk of lifestyle diseases in the future<sup>4</sup>.

Obesity can be of different types-Exogenous obesity, Endogenous obesity and Physiological obesity. Exogenous occurs as a result of excess diet, which is one of the most important nutritional problem. When the energy expenditure is less when compared with energy intake, obesity occurs. Endogenous obesity is related with genetic, chromosomal syndromes, endocrinal disorders, intake of certain drugs etc. Whereas, Physiological obesity usually occurs in early adolescent period and is frequent among girls. It is a temporary phenomenon and will regress after adolescence<sup>5</sup>. There are various comorbidities associated with obesity, which includes Type 2 diabetes mellitus, metabolic disorders, hypertension and cardiovascular diseases<sup>6</sup>. Management of obesity includes different approaches like dietic restriction, encouraging greater physical activity, supportive therapies and even surgical options. Prevention of obesity is very much essential and it can be done by giving proper awareness.

*Sthaulya* is derived from the word “*SthulBrimhane*” along with adding “*Ach*” *Pratyaya*, which means thick, solid or strong<sup>7</sup>. When a person is having *MedhaMamsaathivridhi* (heaviness and bulkiness of body), due to excessive growth in *Sphik*, *Udara* & *Sthana* (especially in the abdominal region) is known as *Sthula* and that state is called *Sthoulya*<sup>8</sup>. Therefore, a state of heaviness of the body can be understood as *Sthaulya*.

The *Nidana* (etiological factors) for *Sthaulya* can be understood under three different streams. They are

*Aharatmaka*, *Viharatmaka* and *Beejadoshajanidana*. *Aharatmakanidana* includes *Guru*, *Madhura*, *Sheeta-gunapradhanaahara* (Excess consumption of heavy, sweet, cold food items), *Atibhojana* (over eating), *Madhura* and *Snigdhapradhanabhojana* (Excessive intake of sweet and unctuous food items). *ViharatmakaNidana* includes *Avyayama* (lack of physical exercise), *Chestadweshi* (laziness), *Achinthanat* (lack of concentration of mind), *Diwaswapna* (regular habit of day sleep), *Nityaharsham* (happy life). *Beejadoshaja* is related to the genetic predisposition<sup>9</sup>. Even, intake of sweet substances by mother during pregnancy and defective genes are considered as *nidana*<sup>10</sup>. As a result of the following causative factors, *Kaphadoshaprakopa* happens and the food remains uncooked and turns more sweet and thus the *Rasa dhathu* which gets circulated throughout the body produces *Medhas* because of its *Snigdhattha* and is known as *Sthaulya*<sup>11</sup>. The clinical features of *Sthaulya* are *Ayushyohrasa* (reduction in life span), *Javoparodha* (Lack of enthusiasm), *Kricchravyavaya* (difficulty in sexual act), *Daurbalya* (debility), *Daurgandhya* (foul smelling of body), *Swedabadha* (Distressful sweating), *Kshudhatimatrata* (Excessive hunger), *Pipasaatiyoga* (excessive thirst)<sup>12</sup>. The *Chikitsasidhantha* includes *Apatarpana* and *Sevana* of *Guru gunapradhanaahara* and *Oushadha*, *Vatagnashleshmamedoharaannapana*, *Guru ushna*, *Ruksha*, *Teekshnaahara oushadha*<sup>13</sup>.

#### CASE HISTORY:

An 8 year 1 month old female patient was brought to the Out Patient Department of Kaumarabhritya, SDM College of Ayurveda and Hospital, Hassan by her parents with complaints of excessive weight gain and associated with increased desire for food since 6 months. Also, they have complained of excess sweating of her body and blackish discoloration around the neck since 3 months. This child had a habit of taking plenty of sweets, chocolates, bakery food items and fast food. Moreover, she always likes to have her food in front of television.

**HISTORY OF PRESENT ILLNESS:**

This child was born by Full term normal vaginal delivery. Baby cried immediately after birth. Birth weight was 3200 grams. There was no any history of NICU stay and no any obvious congenital anomalies were noted. All the developmental milestones were attained appropriate for age and is regularly immunized till date. The child was apparently healthy 6 months back. Then she developed with increased interest towards food and when asked she says she feels very much hungry and have her food always in front of television and computer while watching her favourite programmes. Also, she is fond of chocolates and various sweets and bakery items. Parents feels that she is gaining the weight in a greater pace, and little more than what is appropriate for her age.

The child does not like to play a lot, usually wont engage in play activities which involves active movements of whole body and rather, will stick on to one place and watch cartoons, mobile and video games. She demands for much quantity of food than what is expected. Child is having a habit of sleeping during day time. After completing the age of seven years, the parents have noticed that, compared to other children, she is having more weight. Day by day, her interest towards food has increased. Sine the past 6 months her weight gain was moving in a greater pace. At the outset, the parents have taken her for consultation to few doctors nearby, where they have given medicines and advised to do more physical activity, exercises and to participate in games as well. Medicines were continued for few months, but did not get any satisfactory relief.

As the days passed, the parents felt like there is a need to try Ayurvedic treatments to this child. Then, they have decided to bring their child for a better evaluation and management in SDM College of Ayurveda and Hospital, Hassan.

After a thorough interrogation with the parents regarding the diet, life style and habits of the child and the history of present illness and after a proper evaluation regarding the present condition of the child, she was admitted to the inpatient department of our hospital and planned for *Deepanapachana*, *Udwarthana*,

*NadiSweda*, *Snehapana*, *Sarvanga Abhyanga*, *Swedana*, and *Virechana*.

**EXAMINATION:**

**Table 1: Assessment of general condition of the child:**

Bowel	Regular
Appetite	Increased
Micturition	Regular
Sleep	Sound

**Table 2: Anthropometrical Assessment**

Anthropometry	BT
Weight	40.1kg
Height	124cm
Head Circumference	51cm
Chest Circumference	56cm
Mid Upper arm Circumference	17.5cm

**Table 3: CHIEF COMPLAINTS:**

SL No.	Complaints
1	<i>Kshudhatimatrata</i> (Excessive hunger)
2	<i>Daugandhya</i> (foul smelling of body)
3	<i>Swedabadha</i> (Distressful sweating)
4	<i>Javoparodha</i> (Lack of enthusiasm)
5	<i>Daurbalya</i> (debility)
6	<i>Pipasaatiyoga</i> (excessive thirst)

**TREATMENTS GIVEN**

A single course of treatment which comprises of *Deepanapachana*, *Snehapana*, *Udwarthana*, *NadiSweda* and *Virechana* along with *Sthoulyaharaoushadhi* was given.

**Table 4: TREATMENTS GIVEN:**

DAY-1:	<i>Deepanapachana</i> with : <i>Chithrakadivati</i> (1-1-1) B/F <i>Panchakolaphanta</i> (35ml-35ml-35ml) B/F <i>Udwarthana</i> & <i>NadiSweda</i>
DAY-2	<i>Udwarthana</i> and <i>NadiSweda</i> <i>Snehapana</i> with <i>VarunadiGhrita</i> (30ml) <i>Ushnajalapana</i>
DAY-3:	<i>Udwarthana</i> and <i>NadiSweda</i> <i>Snehapana</i> with <i>VarunadiGhrita</i> (60ml) <i>Ushnajalapana</i>

Day-4:	<i>Udwarthana and NadiSweda</i> <i>Snehapana with VarunadiGhrita (90ml)</i> <i>UshnaJalapana</i>
Day-5:	<i>Udwarthana and NadiSweda</i> <i>Snehapana with VarunadiGhrita (120ml)</i> <i>Ushnajalapana</i>
Day-6:	<i>Udwarthana and NadiSweda</i> <i>Snehapana with VarunadiGhrita (150ml)</i> <i>Ushnajalapana</i>
Day-7,8,9:	<i>Saravanga Abhyanga with Tilathaila</i> <i>Nadisweda</i>
Day-10:	<i>Saravanga Abhyanga with Tilathaila</i> <i>Nadisweda</i> <i>Virechana with Trivritleha (50gm) &amp;</i> <i>Draksha Rasa (100 ml)</i> Total number of vegas: 8

#### ADVISE AT THE TIME OF DISCHARGE:

**Table 5: Advice at the time of discharge:**

SL No.	TREATMENT
1	<i>Samsarjana Krama</i> for 3 days
2	<i>Varunadi Kashaya (7.5ml with 25ml luke warm water)</i> B/F
3	<i>Harithaki Khanda (1tsp bd with luke warm water)</i> A/F
5	<i>UshnaJala Pana</i>
6	<i>Diet Advise</i>

#### OUTCOME OF THE TREATMENTS:

**Table 6: Results**

Anthropometry	BT	AT
Weight	40.1kg	38.7kg
Height	128cm	128cm
Head Circumference	51cm	51cm
Chest Circumference	56cm	56cm
Mid Upper arm Circumference	17.5cm	17.5cm
BMI	31.3kg/m <sup>2</sup>	30.2kg/m <sup>2</sup>

#### PATIENT AND CARE TAKER'S FEEDBACK:

- As per the mother's statement, the child was with complaints of increased interest towards food and when asked she was saying that she easily gets hungry and usually prefers to have her food always in front of television and computer while watching her favourite programmes. Also, she

was fond of chocolates and various sweets and bakery items. She was gaining the weight in a greater pace, and little more than other children of same age group.

- In this course of treatment which comprised of 10 days, child's increased interest towards food has reduced.
- General health status of the child has improved very well after the completion of the course of treatment.
- Excess sweating of body has reduced to an extent.
- Significant reduction in the weight was observed.
- Lightness of the body was felt after the *Virechana* got over.

#### CLINICIAN ASSESSED OUTCOMES:

- This child was brought with complaints of excessive gaining of weight when compared with other children of same age group and associated with increased interest towards food since 6 months. Remarkable changes were noticed in the appetite and digestion of the child.
- After the treatments have started, child's excess desire for taking food in large quantity has reduced.
- This child was said to have generalised weakness in the body. After the course of treatment, general health status has improved.
- Weight has reduced from 40.1kg to 38.7kg by the completion of 10 days of treatment.
- Sweating of the body in excess was another complaint at the time of admission, which has reduced to an extent.
- There was a feeling of lightness of the body after the purification of the body with *Virechana*.

#### DISCUSSION

In the present case the patient presents with complaints like *Kshudatimatra*, *Pipasatiyoga*, *Dourbalya*, *Dourgandhya*, *Swedabadha* and *Javaparodha*. The *Kshudatimatra* and *Pipasaatiyoga* are due to the *Vishamaagni* resulting from the *Prabhutavata (Samana)* in *Koshta*. *Vataprakopa* is caused due to the *Avarodha* by the increased *Guru snigdha*guna of *Kle-*

*dakakapha* in *Amashaya* due to various *Aharaja*, *Viharaja* and *Manasikanidan*. Hence there is an involvement of *Annavaha* and *Udakavahasrotas* in this case. There are also *Lakshanas* like *Atisweda* and *Dourgandhya*. *Sweda* is the *Mala* of *Medo dhatu*. In this patient there is an increase in *Vikrutamedo dhatu* which is evident by *Lakshana* like *Javoparodha*. *Medovruddhi* is caused due to the increase in *Kaphadosha* and due to *Ashraya ashrayisambandha*. *Dourgandhya* is a resultant manifestation of *Atisweda*. Hence there is an involvement of *Medovahasrotas* in this patient. *Javoparodha* indicates the involvement of *Rasavaha* and *Medovahasrotas*. *Dourbalya* is manifested as a result of *Kaphavruddhi* and *Rasa vrudhhi* thereby indicating the involvement of *Rasa dhatu*. Increase in body weight is mainly due to the *Vrudhhi* of *Mamsa* and *Medo dhatu*. Therefore this case is *Kaphavataja* with the involvement of *Vishamagni* the level of *Koshta* followed by *Annavaha*, *Udakavaha*, *Rasavaha*, *Mamsavaha* and *Medovahasrotas*. Since there is an increase in the *Mamsa* and *Medo dhatu*, *Rukshapurvakasnehapana* followed by *Virechana* was planned. The treatments were started with *Deepanapachana* with *Chitrakadivati* and *Panchakolaphanta* due to the involvement of *Vishamagni*. *Chitrakadivati* was selected as it contains *Panchalavan* which will correct the *Koshtaagni* and *Dviksharas* which will help in *Kaphaharana* in the *koshta*. *Panchakolaphanta* is *Kapha hara* and *Agni deepana* in nature.

*Udwartana* was done as a *Bahyarukshana kriya*. It helped in *Kaphaharana* and *Vatashamana*, *Pravilayana* of *Dushtamedas* and reduced the *Javoparodha* in the patient. *Shodhanangasnehapana* was started with *Varunadighrita*. *Varunadigana* is *KaphaMedohara* and *Agni deepana* due to its *Ushna* and *Rukshaguna*. After observing *Samyaksnigdhalakshanas* *Sarvanga abhyanga* was done with *Tilataila*, followed by *Nadisweda*. *Tilataila* helped in *Karshana* (*Sihoolanamkarshanaya cha*) and thereby reducing the body weight. *Virechana* was done with *Trivrutleha* 50 grams and *Draksha rasa* 100 ml. *Trivrutleha* with *Draksha rasa* was selected as it does the *Rukshavirechana* which is needed in *Sthoulyarogi*.

After observing proper *Samsarjana karma*, patient was instructed to start the *Shamanoushadhi* for a period of 1 month. *Varunadikashaya* being *Kaphamedo hara* and *Agni deepana* was given. *Haritaki khand* being *Kaphavata hara*, *Agni deepana* and *Vataanulomana* was instructed to maintain the normal status of the *Koshta*.

## CONCLUSION

The present case was diagnosed as *Sthoulya* (Exogenous obesity) in *Vatakaphadhikaavastha* with *Agni-mandya* at *Koshta* and *Dhatu level*. *Kaya virechana* was done as the *Shodhanachikitsa*, *Rukshapurvakasnehapana* was performed before *Shodhana* as the patient was having *Vikrutamamsa* and *Medo dhatu* with *Bhurishleshma*. There was significant improvement in the subjective and objective parameters after treatment. Hence *Rukshapurvakasnehapana* followed by *Virechana* has a crucial role in the management of exogenous obesity in children.

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