

# Management of obesity with integrated Ayurveda and Yoga intervention: A case report

## Case Report

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### Abstract

Obesity is the disease of nutritional deficiency which leads to abnormal growth of adipose tissue resulting in an increase in the body weight to the extent of 20% or more of standard weight for the person's age, sex, and height. Obesity is one side of the double burden of malnutrition, and today more people are obese than underweight. In *Ayurveda* Obesity is classified under *santarpanjanya rogas* and *ashtaninditiya purusha* by *Acharya Charaka*. *Ayurveda* attributes concept of *Dosha*, *dhatus* and *Mala* in which any *vikriti* in any of *dhatus*, *pramanatah* or *gunatah* then it firmly affects both body and mind. *Yoga* and *Ayurveda* both spring as a greater part of spiritual and mental aspect of treatment. Considering all these factors this study is carried out to understand cause, cause effect relationship as well as treatment. In this case study patient was treated with *Udwarthana*, *Shodhana* and *Shamana chikitsa*, also advised *Ahara* (scheduled diet) and *Vihara* (life style modification) for the management of obesity. This showed a significant change in anthropometric measurement.

**Key Words:** Obesity, *Sthoulya*, *Ayurveda*, *Yoga*.

### Introduction

In present era, every individual is hindered after life goal, aiming for sedentary lifestyle. Unfortunately, leading a burden on lifestyle disorders. These are increasing vigorously worldwide. It is a complex, multifactorial, and largely preventable disease. By 2030 an estimated 38% of the world's adult population will be overweight and another 20% will be obese.(1)

Obesity is defined quite simply as excess body weight for height, but this simple definition reveals an etiologically complex phenotype primarily associated with excess adiposity, or body fatness, that can manifest metabolically and not just in terms of body size.(2-6) Obesity is expressed in terms of body mass index (BMI). The distribution of fat induced by the weight gain affects the risk associated with obesity and the kind of disease that results. It is useful therefore, to be able to distinguish between those at increased risk as a result of "Abdominal fat distribution" or "android obesity", in which fat is more evenly and peripherally distributed around the body.(7) In *Ayurveda* obesity can be understood as '*Sthoulya*' which is derived from *Sthoola*

which means as bulkiness which increases the weight of tissue. It is the condition where there is a increase in the body fat which is *vikruta medodhatu vridhhi*. Hence, it is classified under *Ashtaninditiya Purusha* by *Acharya Charaka*(8) in his treatise called *Charaka Samhita*. *Ayurveda* also point up *Sthoulya* as, *Medadhatu pradoshaja vikara*, *Kaphadosha pradoshaja vikara*, *Bahudoshava avasta*, *Santarpanjanya vikara*.

Treatment aims at *nidana parivarjana* which is basic line of management followed by *samshodana* and *karshana* by giving *lekhana basti*, *mrudu anulomana*, *rooksha basti*, *shamana chikitsa* by giving *aushadi dravyas* internally. The definition of health in *Ayurveda* is as the equilibrium state of *doshas* and *dushyas* along with mental, sensory and spiritual happiness and pleasantness.(9)

*Yoga* is the spiritual branch of treating various ailments. Etymology of *yoga* states that which unites is known as *yoga*. That which brings about union of soul with God is *yoga*. According to Patanjali *yoga sutra* *Yoga* is cessation of mental modifications or *citta vrittis* due to mind, intellect and ego. *Ayurveda* states the concept of *prajnaparadha* i.e intellectual errors in which a person indulges various activities knowingly or unknowing causing other health ailments. It also emphasize codes and conduct called as *sadvrutta*, *Acharya Rasayana* and *Yoga* which helps in healthy state of mind and thereby helps in prevention of psychological, somatic and psychosomatic disorders. (10).

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### Aims and objectives

1. To understand *nidana, poorvarupa, rupa, upashaya* and *anupashaya* of *sthoulya* in detail.
2. To understand role of *Ayurveda* and *Yoga* in the management of *Sthoulya*.
3. To understand Obesity in detail.

### Case study

A male aged 34years, hailing from ILKAL working in private company as an Engineer, due to the excess intake of *Madhura(Sweet), Snigdha ahara(Unctuousness food)*, like junk foods(Oily/fast foods) bakery products, *Atimamsa Sevana* and *Vihara* like *Avyayama* (lack of exercise), *Divaswapna* (Daysleep) the clinical features like excess fat in the region of abdomen, buttocks and breast, due to which the body weight and BMI is increased since last 3 years.

Associated complaints: Heaviness in the body, Excessive hunger, thirst and sweating.

Past Medical history: No History of Diabetes Mellitus/ Hypertension/Thyroid/Asthma/Operative procedures.

Treatment history: No history found

Family history: Mother is Obese

Personal History: Patient having the history of intake of alcohol since last 10 years.

**Table 1: The International Classification of adult Obesity, underweight and overweight according to BMI.(11)**

Classification	BMI (kg/m <sup>2</sup> )	
	Principal cut-off points	Additional cut-off points
Underweight	<18.50	<18.50
Severe thinness	<16.00	<16.00
Moderate thinness	16.00- 16.99	16.00 – 16.99
Mild thinness	17.00 – 18.49	17.00 – 18.49
Normal range	18.50 – 24.99	18.50 – 22.99
Overweight	≥25.00	23.00 – 24.99 ≥25.00
Pre-obese	25.00 – 29.99	25.00 – 27.49 27.50 – 29.99
Obese	≥30.00	≥30.00
Obese class 1	30.00 – 34.99	30.00 – 32.49 32.50 – 34.99
Obese class 2	35.00 – 39.99	35.00 – 37.49 37.50 – 39.99
Obese class 3	≥40.00	≥40.00

### Materials and Methods

Data is collected from the OPD and IPD of SVM Ayurvedic Medical College and Hospital ILKAL.

*Atarpana Chikista* was adopted and results were assessed before and after treatment.

**Table 2: Anthropometry measurements and personal history observed before treatment.**

Blood Pressure	120/80 mm of Hg
Pulse rate	82bts/min
Height	150.2 cms
Weight	86.5 kg
Body Mass Index	38.4 kg/m <sup>2</sup>
Chest Circumference	110 cms
Abdomen Circumference	115 cms
Mid Arm Circumference	Rt hand – 34 cms, Lt hand – 35cms
Mid Thigh Circumference	Rt leg – 62 cms, Lt leg – 63 cms
Waist Circumference	116 cms
Hip Circumference	135 cms
<i>Ahaara</i>	Vegetarian diet
<i>Vihaara</i>	<i>Avyayama, Divaswapna</i>
Appetite	Good
Bowels	Regular, normal in consistency, twice a day
Micturation	Normal, 3-4 times/day, 1-2 times at night.
Sleep	Good
Habits	Excessive Oily foods, Cold Drinks and Bakery products

**Table 3: Physical Examination which signifies about bulky appearance, endomorphic built of patient.**

Appearance	Bulky
Built	Endomorphic
Nourishment	Well nourished
Gait	Normal
Pallor	Absent
Icterus	Absent
Cyanosis	Absent
Clubbing	Absent
Edema	Absent
Lymphadenopathy	Absent

**Table 4: Systemic Examination**

Cardio Vascular System(CVS)	S1, S2 heard
Respiratory System(RS)	AEBE
Central Nervous System(CNS)	Well oriented
Per Abdomen(P/A)	Soft, No organomegally

### Investigational history

**Table 5: History of Laboratory Investigations:**

Hb%	11.3 gm %
WBC	9600 cells / cu mm
E.S.R	34mm / hr
Neutrophils	56%
Lymphocytes	44%
Monocytes	0%
Eosinophils	1%
Platelets	3.76 lakhs / cu mm
RBC Count	4.58 millions/cu mm
F.B.S	78.1 mg / dl
Blood urea	15.8 mg/dl
Serum Creatinine	0.8 mg/ dl

**Table 6: Haemogram report**

P.C.V	36.2%
M.C.V	79.1 fL
M.C.H	24.7 Pg
M.C.H.C	31.6%
RDW	47.8 FI

**Table 7: Lipid Profile**

Total Cholesterol	182.2 mg/ dl
H.D.L Cholesterol	84.2 mg/dl
L.D.L Cholesterol	85.2 mg/dl
Triglycerides	216.2 mg/dl
VLDL	45.2 mg/dl

USG Abdomen and ECG showed Normal study, there were no significant changes seen.

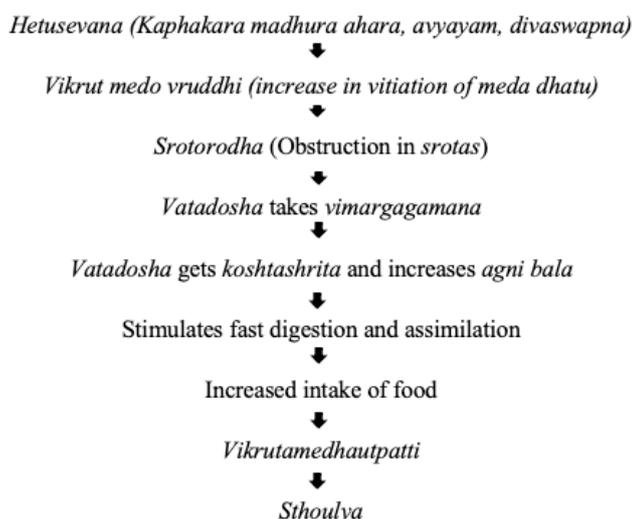
**Table 8: Dashavidha Rogi Pareeksha**

Prakriti	Dwandwaja, Vata Kapha	
Vikrita Dosha	Kapha	
Dushya	Rasa, Mamsa and Meda	
Sara	Madhyama	
Samhanana	Madhyama	
Satva	Madhyama	
Aahara Shakti	Abhyavahara	Pravara
	Jaranasakthi	Pravara
Vyayama Shakti	Avara	
Satmya	Madhyama	
Vaya	Madhyama	
Pramana	Pravara	

**Table 9: Astasthan Pareeksha**

Nadi	Prakruta
Mala	Niraama mala, prakrita
Mootra	Prakrita
Jihva	Aliptata
Sabda	Prakrita
Sparsha	Anushna Sheeta
Drik	Prakrita
Aakruti	Sthoola

**Samprapti of Sthoulya(12)**



**Table 10: Samprapti Ghatakas**

Udbhava Sthana	Amashaya
Vyaktasthana	Sarva Shareera
Adhistana	Medo dhatu
Roga marga	Bahya
Agni	Teekshnagni
Dhatwangni	Manda
Dosha	Kapha and Vata
Dushya	Rasa, Mamsa and Medo dhatu
Srotas	Medovaha, Rasavaha
Sroto dusti	Sanga
Sadhya Asadhyata	Krichra Sadhya

All the examinations done and reported in the above mentioned tables, the disease was understood and diagnosed as *Sthoulya*. Based on the patient's *Agni* and *prakruti* the treatment was planned. Initially started with *udwartana*, (13) *udwarthana churna* contains *Kulatha*– 4 parts, *Yava* – 4 parts, *Triphala* – 2 parts, *Mudga* – 1 part, *Methika* – 1 part, *Sarshapa* -1/4<sup>th</sup> part. Followed by *sadhya virechana* along with *shamana aushadi* were advised. *Pathyaahara* and *yogasanas* were advised daily along with other treatments. Considering *Ashtavidha* and *Dashavidha pariksha bhavas* the following treatment was planned.

**Table 11: Chikista Siddhanta**

Pathya ahara (Diet food) (14-16)	
7 am	Kulatha/Mudga (100g) yusha (gruel)
10 am	Takra (200ml)
1 pm	Yava Chapati (2) – 50g Leafy vegetable- spinach / fenugreek/ amaranth (100g) Vegetable – beans/ cabbage/ash gourd /tomato (100g) Root and tuber – carrot/ knolkhol (25g)
4 pm	Mixed salad (100g)
7 pm	Yava Chapati (2) – 50g Leafy vegetable- spinach / fenugreek/ amaranth (100g) Vegetable – beans/ cabbage/ash gourd /tomato (100g) Root and tuber – carrot/ knolkhol(Wild cabbage) (25g)
8 pm	Skimmed off milk (200ml)

**Table 12: Treatment Schedule 31-10-2020 to 18-11-2020**

Days	Treatment	Observation
Day 1-8	1. Udwarthana and Bhaspa sweda	• Bowel – Passed
	2. Tab Navaka Guggulu 2 BD (A/F)	• Appetite – Good
	3. Varunadi Kashaya (10ml with warm water B/F)	• Micturation – Passed
	4. Yoga and Pranayama	• Sleep – Sound
	5. Pathyahara.	

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	Treatment	Observation
<b>Day 9-16</b>	<ol style="list-style-type: none"> <li>1. <i>Udwarthana</i> and <i>Bhaspa sweda</i></li> <li>2. Cap Decrin Plus 2 BD (A/F)</li> <li>3. <i>Asanadi Kashaya</i> (10ml with warm water B/F)</li> <li>4. <i>Yoga Pranayama</i></li> <li>5. <i>Pathyahara</i></li> </ol>	<ul style="list-style-type: none"> <li>• Bowel – Passed</li> <li>• Appetite – Good</li> <li>• Micturation – Passed</li> <li>• Sleep - Sound</li> </ul>
<b>Day 17</b>	<i>Snana</i> followed by <i>SadhyoVirechana</i> with <i>Trivruth lehya</i> – 60gm with <i>Draksha Kashaya</i> 150ml.	<ul style="list-style-type: none"> <li>• <i>Virechana aushadi</i> given at 8:15am</li> <li>• Till 5pm No. of vegas - 14</li> </ul>
<b>Day 18</b>	Discharged	

**Table 13: Yogasanas advised during treatment(17)**

Asanas (Total duration:70 minutes)	Names
Warm up exercises (10 minutes)	Hand to ankle rotation loosening exercise
<i>Surya Namaskara</i> (15 minutes)	10 rounds
Standing posture <i>asanas</i> (10 minutes)	<i>Ardha Chakrasana, Trikonasana</i>
Sitting posture <i>asanas</i> (10 minutes)	<i>Matsyendrasana, Vajrasana</i>
Prone posture <i>asanas</i> (10 minutes)	<i>Pavanamuktasana</i>
<i>Pranayama</i> (15 minutes)	<i>Bhastrika Bhrumari</i>

**Table 14: Evaluation of Anthropometry changes before and after treatment**

Observation	Before Treatment	After Treatment
Weight	86.5 kg	81.1 kg
Body Mass Index	38.4 kg/m <sup>2</sup>	36 kg/m <sup>2</sup>
Abdomen Circumference	115 cms	110 cms
Mid Arm Circumference	Rt hand – 34 cms, Lt hand – 35cms	Rt hand – 30 cms, Lt hand – 31cms
Mid Thigh Circumference	Rt leg – 62 cms, Lt leg – 63 cms	Rt leg – 57 cms, Lt leg – 59 cms
Waist Circumference	116 cms	109 cms
Hip Circumference	135 cms	129 cms
Waist/Hip Ratio	0.85	0.84

**Table 15: Evaluation of Lipid profile changes before and after treatment**

	Before Treatment	After Treatment
Total Cholesterol	212 mg/ dl	180 mg/ dl
H.D.L Cholesterol	50.1 mg/dl	84.3 mg/dl
L.D.L Cholesterol	132.2 mg/dl	115.1 mg/dl
Triglycerides	199.3 mg/dl	150.1 mg/dl
VLDL	45.2 mg/dl	25.3 mg/dl

**Probable mode of action of therapeutic procedures, *Yogasanas* and *pathyaahara***

In the study we have taken *udwartana* and *virechana* as therapeutic procedures in which *udwartana* followed by *bhaspa sweda* relieves *srotorodha* and helps in liquification of *doshas*. The drugs used in *udwartana* allievates *kapha, vata, Ama* and *Medha*(fat). They possess *ruksha guna* which scrapes fat tissue in body and enhance free transportation of nutrients and other essential to all tissues of the body. It also rejuvenates cells and recharges it for better functioning. *Virechana* with *Trivrit Lehyam* with *draksha kashaya* causes *Medoharana*. (18,19)

*Virechana* is one among *Panchakarma*. The predominance of *prithvi* and *jala mahabhuta* in *virechaka dravya* will have natural tendency to move downwards and thus they can induce *virechana kriya*. A quality of *virechaka dravya* includes *sushna, tikshna, sukshma guna* having capacity of *vyavayi* and *vikasi* which brings *doshas* from *shakha* to *koshta* and induce *virechana*.

*Navaka Guggulu* has *Katu-Kashaya Rasa, Laghu-Ruksha-Tikshna Guna, Ushna Virya* and *Kapha Vata Shamaka, Dipana Karma*, among them 70% have *Pachana* and 50% have *Yakriduttejaka, Karshana, Meda- Sneha-Kleda Shoshana* and *Srotovishodhana Karma* which all have opposite action on *Kapha Dosha* as well as *Meda Dhatu*. (20)

Each capsule of *Decrin Plus* contains *Amrutadi Guggulu* 250mg, *Navaka Guggulu* 60 mg, *Shudda Shilajitu* 30mg, *Aghada* 60mg, *Bhavana* with *Guduchi, Punarnava & Gokshura Swarasa*. (21)

*Asanadi kashaya* having *tikta* predominance *kashaya rasa* reduces *kapha dosha* as it causes dryness; regularizes the metabolism (*Deepana-Pachana*); dries up *medas (medoshoshaka)*; uses up the fat/moisture (*kleda shoshaka/kleda upayokta*); leans the body (*karshana*). The combined effect is seen on *Medodosha*. (22,23)

*Varunadi Ganahas* has *Kaphaghna* and *medoghna* properties. So, it is most appropriate to select this *Varunadi Kashaya* for doing *lekhana karma* in *Sthoulya*.(24)

In modern parlance, it may act like catalytic agent which converts saturated compounds into unsaturated one in the form in which they are more reactive. *Shodhana* therapies are mild irritant to stomach and intestinal mucosa to cause inflammation. Due to this permeability of the membrane changes.(25)

*Asanas* advised promotes strengthens abdominal muscles and also helps in reducing abdominal fat. *Dravyas* used in *pathya kalpana* are of *sheetaveerya, laghuvipaka* and are beneficial in digestion of food, maintaining normal functioning of *agni*.

**Results**

Initially Dated 31-10-2020 patient presented with the weight Of 86.5 kgs which reduced to 81.1 kgs on the day of discharge. There was 5.4kgs reduction of weight which shows significant reduction of weight. On

18<sup>th</sup> day patient was discharged on 18-11-2020 and advised to follow same diet schedule with medications and *yogas*. Follow-up was done after 30 days.

Medications prescribed on discharge

1. Tab *Navaka Guggulu* 2 BD (A/F)
2. *Varunadi Kashaya* (10ml with warm water B/F)

## Discussion

*Ayurveda* aims at prevention and promotion of health of a healthy person. It treats diseases on the basis of doshas and dushya which play important role in manifestation of any disease. In this case, patient was diagnosed as a case of *sthoulya*, predominantly of *kapha vata* as vitiated *doshas* and *rasa, mamsa, medha* as vitiated *dushyas*.

*Ayurveda* points out the very basic line of treatment as *nidana parivarjana* (avoiding the cause) patient had adopted herself to sedentary lifestyle, day sleep, lack of exercises whereas leading to abnormal accumulation of *medha dhatu* (fat) in the body and landing herself to obesity.

As *sthoulya* is *santarpanyajanya vyadhi* the main stream of management is *lekhana karma* which is treated by *Udwartan Karma*, followed by *Swedana, Virechana, Vyayama, Pathyahara sevana*. All parameters because they eliminate *Dosha* from body and perform the action of *samprapti vighatana* (breaking of pathogenesis) at cellular level. In this case, we observed significant changes and was advised to follow same diet and *yogasanas* regularly, follow up is maintained.

## Conclusion

On the basis of signs and symptoms the case of *sthoulya* was treated with *udwartana, virechana* followed by *pathyahara* and *yogasanas*. *Acharya Charaka* has classified *Sthoulya* among *Ashtaninditiya purusha*. *Atisthula* may further leads to various other diseases if not treated well. Hence one should follow healthy lifestyle which includes *Dinacharya, Rutucharya, Pathya ahara sevana* in order to prevent the diseases.

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