

# An integrated therapy approach for the management of obesity-associated disorders: A case report

Anita Verma<sup>1</sup>, Sanjay U. Shete<sup>1</sup>, Gururaj Doddoli<sup>2</sup>

<sup>1</sup>Scientific Research Department and <sup>2</sup>Ayurveda Section, Kaivalyadhama, Swami Kuvalayananda Marg, Lonavla, Pune, Maharashtra, India

## ABSTRACT

Obesity (*sthoullya*), in general, is a significant health problem and is associated with several comorbidities and various discomforts that can cause negative impact on physical, mental, and social well-being of a person. In this case study, an obese patient was suffering from severe multiple joint pains (*aam vata*) and shortness of breath (*shwaas*) was unable to climb stairs, and had extreme difficulty in walking. The patient also suffered from stress-related complaints, such as sleep disturbances (*anidra*) and poor digestion. The treatment was aimed at restoring psycho-physiological and physical health of the patient. *Ayurveda panchakarma* therapy involves treatments such as *snehana* (oleation), *svedana* (sudation), and *virechana* (purgation), which are the line of treatment for obesity-related disorders. Furthermore, the patient was given special yoga postures to improve flexibility and movement of joints. The integrative therapy of *Ayurveda panchakarma* and yoga showed significant improvement in functional capacity, quality of life, and musculoskeletal pain.

**Keywords:** Ayurveda, musculoskeletal pain, obesity, panchakarma, quality of life, shortness of breath, yoga

## Introduction

Obesity is defined as abnormal or excessive fat accumulation in the body that may impair health of an individual. Obesity, in general, is a significant health problem and is associated with several comorbidities and various discomforts that can cause negative impact on physical, mental, and social well-being of a person. Obesity negatively impacts the musculoskeletal system,<sup>[1]</sup> respiratory system,<sup>[2]</sup> endocrine system,<sup>[3]</sup> and digestive system.<sup>[4]</sup> Thus, obesity can lead to various potentially life threatening diseases and cause shortening of life span of a person. Although symptomatic treatment may be available to give temporary relief but there is no permanent treatment available in the modern medical system.

We present a case of obesity (*sthoullya*) having *aam vata* and *shwaas* (asthma), which was satisfactorily treated with the help

of integrated therapy of yoga and *Ayurveda*. Traditional *Ayurvedic* therapy involves complex treatment approaches, such as lifestyle and nutritional advice, manual therapies, medication, dietary supplements, detoxification techniques, and yoga.<sup>[5]</sup>

## Case history

A 54-year-old, Indian, nonsmoking, nonalcoholic female consulted in the *Ayurveda* and *Panchakarma* section at the Health Care Centre, Kaivalyadhama, Lonavla. On arrival, the patient had complaints of severe multiple joint pains, difficulty in breathing (*shwaas*), inability to climb stairs, and extreme difficulty in walking due to obesity (*sthoullya*). The patient also suffered from stress-related complaints, such as sleep disturbances (*anidra*) and poor digestion due to highly stressful job profile. In fact, irregular food habits and timings led to disturbances in digestive fire (*jatharagni*). This led to the formation of *aam* and *vata* disturbances that manifested into *aam vata*. The patient had history of hypothyroidism, asthma, and arthritis. Since a long duration, the patient was on hypothyroid medications,

**Address for correspondence:** Mr. Sanjay U. Shete,

Scientific Research Department, Kaivalyadhama, Swami Kuvalayananda Marg, Lonavla, Pune, Maharashtra - 410 403, India.

E-mail: sanjays@kdham.com

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B12 supplements, and recently started taking anti-inflammatory medications to relieve the inflammation of joints. The case was subsequently admitted to the Health Care Centre on 04/09/16 for the administration of *Ayurveda panchakarma* and yoga therapy for 3 weeks.

## Clinical findings

The patient was obese and had complaints of severe knee pain along with difficulty in breathing, walking, and climbing stairs. The patient had generalized musculoskeletal pain, severely restricted knee movements, and extreme work-related pressures, which led to disturbed sleep. This patient was an established case of hypothyroidism, asthma, and rheumatoid arthritis. Family history of the patient was found to be nonsignificant. The patient had a poor appetite due to reduced digestive fire. There was swelling and tenderness in the prominent joints, such as knee and ankle [Table 1].

## Assessment

The patient's past biochemical tests were done on 30/08/16, which revealed borderline increase in Thyroid stimulating hormone (TSH) while T3 and T4 were within the normal range. Liver function tests, blood sugar, Antinuclear antibodies (ANA), and HbA1c were normal but RA factor and C-Reactive Protein (CRP) were positive. Accordingly, the treatment was planned to restore psycho-physiological and physical health of the patient. Psychological assessments were conducted at the baseline (04/09/16) and at the end of 3 weeks (24/09/16) of therapy. The patient was administered WHO Quality of Life (QOL)-BREF Questionnaire to assess four domains of quality of life, i.e., physical health, psychological, social relationships, and the environment. The four domain scores denote an individual's

perception of quality of life in each particular domain. Orebro Musculoskeletal Pain Questionnaire was also administered to screen the degree of musculoskeletal pain in the patient. Spirometry was conducted to assess pulmonary function of the patient. Furthermore, Jeevan Yantra was used to assess lung function of the patient before and after the therapy of 3 weeks. This instrument was designed by Swami Kuvalayananda, Kaivalyadhama, which enhances the lung function by improving the strength and capacity of the lungs.

## Therapeutic focus

The line of treatment was focused on reducing the musculoskeletal pain and improving breathlessness symptoms. As per Ayurveda, the patient was given preparatory treatment followed by main treatment, i.e., medicated purgation therapy. Furthermore, the patient was given loosening exercises, asanas, and pranayama to improve the flexibility and movement of joints, daily in the morning and evening for 3 weeks. The details of therapy have been presented in Tables 2 and 3.

## Follow up and outcomes

All the psycho-physiological parameters were reassessed on 24/09/16 and the patient was re-examined by an Ayurveda physician. The results of lung function, quality of life, and overall functional capacity have been presented in Table 4. Furthermore, 71.42% improvement in lung function was observed by using the Jeevan Yantra instrument [Table 4].

## Discussion

The results of this case study showed encouraging findings. There was an improvement in lung function, quality of life, and overall functional capacity after 3 weeks of *Ayurveda panchakarma* and yoga therapy. In fact, earlier studies indicated that obesity is associated with various functional and psycho-physiological disorders such as hypertension, sleep-disordered breathing/sleep apnea, metabolic syndrome, and musculoskeletal disorders such as osteoarthritis and rheumatoid arthritis.<sup>[6]</sup>

*Ayurveda* is an ancient holistic science that mainly deals with the knowledge of life and is practiced as a healthcare system in India. Ayurvedic understanding of this comorbid condition and experiential therapeutic base may offer a great strategy for management and prevention of obesity-related disorders.

Yoga, an ancient Indian science, helps us in improving physical and mental well-being of an individual. According to past research findings, yoga helps us in decreasing obesity and its related disorders along with improving quality of life of an obese individual.<sup>[7]</sup> As per traditional texts, *panchakarma* and complementary therapies are recommended in obesity and rheumatoid arthritis.<sup>[8]</sup> As per the past research studies involving obesity and its related disorders, yoga and *Ayurveda panchakarma* therapy complement each other and are highly beneficial when given together.

**Table 1: Timeline of the case**

Date/ month/year	Clinical events and intervention
1994	Diagnosis of asthma
2012	Diagnosis of hypothyroidism
13/02/16	Onset of sudden abdominal pain, tachycardia 1+
27/02/16	USG abdomen was done. 2×3 cm abscess was diagnosed. The patient was advised fat-free simple diet, avoid stress and heavy work, and rest for 2 weeks. Flagyl 800 mg, Cobadex and Pantaprazole were prescribed for immediate relief
14/06/16	Vitamin B12 >2000, Vitamin D=37.8, CRP positive, RA positive, Glucose=96, Hemoglobin=12.5, ESR=31, ANA negative. Thus, the patient was diagnosed with rheumatoid arthritis
30/08/16	GGTP=126, Alk. PO4=162, Vitamin B12=276, TSH=5.19
04/09/16	The patient visited Kaivalyadhama's Health Care Centre, Pune with swelling on body, face, and joints. The patient experienced difficulty in folding knee, climbing stairs, walking, and shortness of breath Ayurveda panchakarma therapy along with yoga therapy was given for 3 weeks.
24/09/16	The patient felt relieved and distressed. Pain was significantly reduced and the patient was happy that she could walk and climb stairs without breathlessness. Inflammation of the joints was reduced to a great extent

**Table 2: Ayurveda panchakarma intervention**

Panchakarma procedures	Method of preparation and administration	Treatment duration 3 weeks
Padabhyanga	Massage to feet up to knee joint with <i>vatahar oil</i> and to soles with <i>Kasavati</i> and <i>mulayam malam</i>	Day 1, 6, 8, 15, and 18 for 30 min each
Shiroabhyanga	Head massage done with <i>shirodhara oil</i>	Day 1, 3, and 16 for 30 min each
Patra pottali	<i>Nirgundi</i> leaves approximately 300 gm roasted in castor oil along with 5-gm <i>vacha churna</i> and tied tightly in a muslin cloth to form a pottali. This is dipped in warm <i>massage oil 200-ml and 100-ml vatahar oil</i> and warm pottali massage was given to the whole body	Day 2, 5, 7, 11 & 16 for 45 min each
Kati basti	A ring was made using dough prepared from wheat flour. This was fixed to the patient's lower back while lying in the prone position. Warm <i>kayakalp tailam</i> is then poured in. It is then changed to maintain the warmth	Day 2, 5, 8, 12, and 14 for 30 min each
Vicharana sneha	10-ml <i>panchakarma ghrith</i> given along with the prescribed lunch in proportionate quantity. The quantity of panchakarma ghruth was increased subsequently, i.e., 10 ml, 15 ml, and 20 ml	Day 2, 3, 4, 5, 6, and 7
Udhwartan	<i>Massage oil</i> application to whole body followed by the massage with <i>udhwartan churna</i>	Day 3, 6, 12, 14, and 17 for 45 min each
Pratimarsha nasya	Gentle massage from shoulder to nasal region, followed by steam. Nasya oil was put in both the nostrils. This was followed by gargle with warm water and smoke inhalation of <i>haridra churna</i>	Day 3, 5, 11, 14, and 16 for 30 min each
Anuvasan basti	<i>Basti oil</i> 50 ml + 30 ml <i>vatahar oil</i> with 5 gm of <i>sendhav lavan</i> given after a meal with basti yantra after <i>snehana</i> and <i>svedana</i> to abdomen region	Day 3, 6, 11, and 13 for 30 min each
Abhyanga and svedana	Massage with <i>massage oil</i> and steam with vatagna kwath	Day 4 and 13 for 45 min each
Shirodhara	<i>Shirodhara oil</i> was used	Day 4 and 6 for 30 min each
Lep	Warm herbal paste applied to the right shoulder and covered using the muslin cloth. Lep was kept until it dried	Day 4 for 30 min
Janu basti	A ring was made using dough prepared from wheat flour. This was fixed to the patient's knee joint while lying in the supine position and warm <i>kayakalp oil</i> was poured in. This was changed to maintain the warmth	Day 5, 7, and 12 for 30 min each
Virechana	Abdomen <i>snehana</i> and <i>svedana</i> was done and the patient was given 200-ml <i>virechana kwath</i> to drink	Day 9 for 30 min
Netra basti	The patient was asked to wear swimming goggles with eye piece cut open. Then lukewarm netra ghruth was put in the eyes. The patient was asked to open and close eyes along with certain eye movements. Jestmadh churan smoke was given after removing netra ghruth	Day 10, 13, and 17 for 30 min each
Hrud basti	A ring was made using dough prepared from wheat flour was fixed to chest near the heart region and lukewarm dathupushti oil was poured in. This was changed to maintain the warmth	Day 10, 13, and 17 for 30 min each
Karna puran	Gentle massage around the ear was done and warm ear oil was poured in both the ears	Day 11 and 16 for 30 min each

At the time of arrival, patient's joint pain was extremely aggravated due to a recent injury. The patient had difficulty in walking and climbing stairs, along with reduced functional abilities. Hence, the treatment was initiated in accordance to the line of treatment of *aam vata* and *sthouhya* as per *Ayurveda* along with yoga therapy.<sup>[9]</sup> Yoga therapy has been found to be highly beneficial for obese patients with related disorders, who have limited movements and sometimes can barely walk.<sup>[10]</sup> The result of this case study revealed significant improvement in functional ability, pulmonary function, musculoskeletal pain, and quality of life after 3 weeks of integrated therapy. Yoga involves passive stretching, which was, perhaps, helpful in loosening stiff joint muscles and reducing inflammation of the joints of the patient.

Furthermore, the quality of life of the patient was also found to be improved. There was no worsening of any symptoms until 24/09/16. Past yoga research studies have also shown decreased psychosomatic disorders,<sup>[11]</sup> reduced musculoskeletal discomfort,<sup>[12]</sup> and improved quality of life along with better pulmonary functions in patients suffering from obesity-related disorders. Also, *Ayurvedic* treatments for obesity<sup>[13]</sup> and

rheumatic disorders<sup>[14]</sup> have shown promising results in the past research studies.<sup>[15]</sup> Therefore, the patient was given *Ayurvedic* treatment, i.e. *panchakarma* and yoga therapy, which was found to be beneficial in improving overall physical and psychological well-being of the patient. In the view of encouraging outcome obtained so far, the treatment can be administered for a longer duration and in larger number of patients suffering from obesity to substantiate the findings of this case study.

### Patient consent

Informed written consent has been obtained from the patient for publishing this case study.

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**Table 3: Yoga module**

Yoga practices	Duration
Shavasana (corpse pose)	2 min
Ardhahalasana (half plow pose)	30 sec to 1 min
Makarkridasana (1-2) (crocodile pose)	30 sec to 1 min
Niralambasana (neck stretching pose)	30 sec to 1 min
Bhujangasana (cobra pose)	30 sec to 1 min
Ardha shalabhasana (half locust pose)	30 sec to 1 min
Ardha vakrasana (half twisted pose)	30 sec to 1 min
Parvatasana (mountain pose)	30 sec to 1 min
Marjariasana (cat pose)	30 sec to 1 min
Tadasana (palm-tree pose)	30 sec to 1 min
Lateral chakrasana (wheel pose)	30 sec to 1 min
Kati chakrasana (spinal twist pose)	30 sec to 1 min
Bramhamudra (neck rotation)	3 rounds
Anulom vilom pranayama (alternate nostril breathing)	1:2, 11 rounds
Omkar	3 rounds
Gayatri mantra	3 rounds
Bhramari pranayama (humming bee breath)	10 rounds
Shavasana (corpse pose)	15-25 min

**Table 4: Results of Pulmonary function test, Quality of life, and musculoskeletal pain before and after Ayurveda panchakarma and yoga therapy**

Variables	Before treatment	After treatment	Improvement in percentage
Pulmonary function test			
FVC	1.5	1.63	8.6%
FEV1	1.5	1.56	4%
FEV1/FVC%	96.08	100	4%
PEF	4.79	5.19	8.35%
V max 75%	1.99	2.79	38.19%
MVV	51.34	75.72	47.48%
Jeevan yantra	70	120	71.42%
WHO-quality of life questionnaire			
Physical health	63	75	19%
Psychological health	56	69	23%
Social relationships	44	56	27%
Environment	81	94	16%
Orebro-musculoskeletal pain questionnaire			
Musculoskeletal pain	98	71	27.5%

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### Conflicts of interest

There are no conflicts of interest.

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