Case Report

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

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ABSTRACT

Obesity (sthoulya), 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, respiratory system, endocrine system, and digestive system. 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 (sthoulya) 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. 

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 (sthoulya). 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, which was satisfactorily treated with the help of Ayurvedic treatment. The patient was given special yoga postures to improve flexibility and movement of joints.

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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 I].

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.[8]

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.[7] As per traditional texts, panchakarma and complementary therapies are recommended in obesity and rheumatoid arthritis.[8] 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.
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 rata* and *sthoulya* as per Ayurveda along with yoga therapy.[9] Yoga therapy has been found to be highly beneficial for obese patients with related disorders, who have limited movements and sometimes can barely walk.[10] 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,[10] reduced musculoskeletal discomfort,[12] and improved quality of life along with better pulmonary functions in patients suffering from obesity-related disorders. Also, *Ayurvedic* treatments for obesity[13] and rheumatic disorders[14] have shown promising results in the past research studies.[15] 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     |
| Ardhalasana (half plow pose)    | 30 sec to 1 min |
| Makarkridasana (1-2) (crocodile pose) | 30 sec to 1 min |
| Niralambhasana (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 vikrasana (half twisted pose) | 30 sec to 1 min |
| Parvatasana (mountain pose)     | 30 sec to 1 min |
| Marjartasana (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) | 12, 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%                       |
| Orechra-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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