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Case Study

"SUBCLINICAL HYPOTHYROIDISM AND ITS MANAGEMENT WITH AYURVEDA: A CLINICAL EXPOSITION"

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ABSTRACT

Subclinical Hypothyroidism is an early, mild form of hypothyroidism. It is a silent state where the thyroid gland is beginning to fail, but the body is still compensating to keep hormone levels stable. In clinical terms, it is defined by high TSH (Thyroid Stimulating Hormone) that means the pituitary gland is screaming at the thyroid to work harder. Common manifestations include unexplained fatigue or sluggishness, mild weight gain or difficulty losing weight, feeling more sensitive to cold, dry skin or brittle hair, low mood or brain fog. In Ayurveda, this stage is viewed as *Agni Mandya* (lowered metabolic fire) at the tissue level where the *Kapha* and *Vata* doshas are beginning to obstruct the channels (*Srotas*), slowing down the conversion of energy. In this case a 41-year-old female patient who experienced certain symptoms such as fatigue, weight gain, constipation, dry skin, hair loss and muscle cramps. Her thyroid tests confirmed subclinical hypothyroidism, revealing elevated serum TSH level(6.816µIU/ml) and slightly high T4 level(14.66µg/dl). Remarkably, after receiving a comprehensive *Ayurvedic* treatment plan, the patient not only normalized his thyroid profile but also saw a significant improvement in overall symptoms. This case study highlights the effectiveness of *Ayurvedic* treatment in managing Subclinical Hypothyroidism. This integrative strategy showcases *Ayurveda's* remarkable potential in treating endocrine disorders, especially when synergized with conventional diagnostic and therapeutic practices.

Key words: Subclinical Hypothyroidism, *Agni Mandya*, Thyroid Stimulating Hormone, Ayurveda

INTRODUCTION

Subclinical Hypothyroidism (SCH) represents an early biochemical stage of thyroid dysfunction, characterized by elevated serum Thyroid Stimulating Hormone (TSH) levels despite circulating free thyroid

hormones (T3 and T4) remaining within the established reference range. Often described as a "silent" endocrine state, SCH affects approximately 4% to 15% of the global population. While biochemically mild, the condition is clinically significant as it serves as a precursor to overt hypothyroidism and is frequently associated with an increased risk of cardiovascular disease, hyperlipidemia, and neuropsychiatric symptoms. In the conventional biomedical framework, the management of SCH—particularly when TSH is below 10 mIU/L—remains a subject of clinical debate, often adopting a "watchful waiting" approach. However, patients frequently report a diminished quality of life due to symptoms such as unexplained fatigue, weight gain, cold intolerance, and cognitive sluggishness.

Ayurveda offers a unique perspective on this metabolic transition, viewing it through the lens of *Agni Mandya* (impaired metabolic fire) and *Dhatu-Paka-Vriti* (metabolic dysfunction at the tissue level)[1]. The pathophysiology of SCH can be understood as an early-stage imbalance where *Kapha* and *Vata Doshas* cause *Sroto-avarodha* (channel obstruction), hindering the systemic conversion and distribution of energy[2,3].

This case report documents the clinical journey of a 41-year-old female diagnosed with Subclinical Hypothyroidism. It details a comprehensive Ayurvedic intervention strategy that successfully achieved biochemical normalization of TSH and symptomatic relief. By documenting this successful outcome, this study aims to highlight the potential of integrative Ayurvedic protocols as a viable, non-hormonal alternative for managing early endocrine disorders.

CASE PRESENTATION

Patient Information and History

A 41-year-old female patient, a housewife by profession, presented to the outpatient department (OPD) with a 2-year history of progressive generalized lethargy (fatigue), unintentional weight gain, chronic constipation, xeroderma (dry skin), diffuse alopecia (hair loss), and recurrent nocturnal muscle cramps.

The onset was insidious; the patient initially noted painful muscle cramps and a steady increase in body mass, which was subsequently followed by persistent fatigue and integumentary dryness. Her past medical history was unremarkable for systemic metabolic disorders, including Diabetes Mellitus or Hypertension. She reported no history of previous thyroid surgery or radiation exposure. Prior to this consultation, the patient had not initiated any hormonal replacement therapy. Informed written consent was obtained for the documentation and publication of this case.

Clinical Findings

General Physical Examination:

On examination, the patient was conscious, cooperative, and well-oriented to time, place, and person. She was ambulatory with a steady gait. Her anthropometric measurements revealed a Weight of 61 kg and a Height of 156 cm, resulting in a Body Mass Index (BMI) of 25.07 kg/m² (overweight). Clinical inspection showed no evidence of pallor, icterus, cyanosis, clubbing, lymphadenopathy, or koilonychia. Systemic vitals were hemodynamically stable:

Pulse Rate: 80 beats/min (regular rhythm).
Blood Pressure: 110/80 mmHg.
Respiratory Rate: 18 breaths/min.
Body Temperature: Afebrile (98.4°F).
Ayurvedic Physical Examination (*Ashta Vidha Pariksha*): The patient's constitution was assessed as Kapha-Vata Pradhan Prakriti.
Nadi (Pulse): Mandagami (Slow/Steady).
Mala (Bowel): Vibandha (Constipation/Hard stools).
Mutra (Urine): Prakrita (Normal).
Jihwa (Tongue): Alpa-Lipta (Slightly coated, indicating mild *Agni Mandya*).
Shabda (Speech): Spashta (Clear).
Sparsha (Touch): Ruksha (Dry).
Druk (Eyes): Prakrita (Normal).
Akriti (Build): Madhyama (Medium).

Systemic Examination

Cardiovascular System (CVS): S1 and S2 heart sounds were heard normally; no murmurs or gallops were detected. Heart rate was regular at 80 bpm with no signs of bradycardia.
Respiratory System (RS): Bilateral lung fields were clear on auscultation. No added sounds such as rales or rhonchi were present. Chest expansion was symmetrical.
Gastrointestinal System (GIS): The abdomen was soft and non-tender on palpation. No organomegaly (hepatosplenomegaly) was detected. Bowel sounds were slightly diminished, consistent with the patient's complaint of chronic constipation.
Central Nervous System (CNS): The patient was conscious and oriented. Deep tendon reflexes (DTRs), particularly the Achilles tendon reflex, showed a slightly delayed relaxation phase (a common clinical sign in thyroid dysfunction). No focal neurological deficits were noted.
Integumentary System: Skin was notably Ruksha (dry/scaly) and cool to the touch. Hair showed thinning with a rough texture. No pretibial edema was observed.

DIAGNOSTIC ASSESSMENT

The patient's clinical presentation strongly suggested a metabolic slowdown. Laboratory investigations were conducted to evaluate the thyroid axis and rule out common mimics like anemia.
1. Biochemical Investigations: The primary diagnostic markers revealed a classic **Subclinical Hypothyroidism** profile:
Serum TSH: 6.816 µIU/ml (Reference Range: 0.45 – 4.5 µIU/ml) — Indicates pituitary compensation.
Total T4: 14.66 µg/dl (Reference Range: 5.1 – 14.1 µg/dl) — Noted as slightly elevated/high-normal, which is an atypical but documented finding in early-stage thyroid dysregulation.
Total T3: Within normal limits.
2. Additional Investigations:
Hemoglobin (Hb): 12.5 g/dL (within normal limits, ruling out anemia-induced fatigue).
Blood Sugar (Fasting): 92 mg/dL (ruling out Diabetes Mellitus).
3. Ayurvedic Diagnosis and Pathogenesis (*Samprapti*)
The clinical presentation was diagnosed as *Dhatvagni Mandya* [4](metabolic dysfunction at the tissue level) leading to *Rasavaha* and *Medovaha Srotorodha* (obstruction of plasma and adipose channels). In the context of thyroid dysfunction, this correlates to an imbalance in the *Ghatiyantra* (the thyroid gland), where the failure of transformation results in the accumulation of *Ama* (undigested metabolic by-products).
***Samprapti Ghataka*[5] (Components of Pathogenesis)**
Dosha: *Kapha* (Vruddhi/increase) and *Vata* (*Vimanagamana*/disturbed movement).
Dushya: *Rasa* (Plasma), *Meda* (Fat tissue), and *Mamsa* (Muscle tissue).
Agni: *Jatharagni Mandya* (Weak digestive fire) leading to *Dhatvagni Mandya* (Weak tissue-level metabolism).
Srotas: *Rasavaha, Medovaha,* and *Mamsavaha Srotas*.
Sroto Dushti Prakara: *Sanga* (Obstruction/Stasis).
Adhisthana: *Kantha Pradesh* (Thyroid region) and *Sarva Shareera* (Systemic).
Pathogenesis (*Samprapti Chakra*)
The pathogenesis initiated with *Jatharagni Mandya*, often caused by sedentary lifestyle or incompatible dietary habits, leading to the formation of *Ama* (metabolic toxins). This *Ama* circulated systemically, specifically affecting the *Rasavaha Srotas* (nutritional channels). Due to the *Guru* (heavy) and *Manda* (slow) qualities of aggravated *Kapha*, the *Dhatvagni* (tissue fire) of the thyroid gland was suppressed. This resulted in a state of *Sroto-avarodha* (channel blockage), where the conversion of *Ahara Rasa* (nutrient plasma) into subsequent tissues was hindered. The pituitary's "screaming" (elevated TSH) is viewed as *Vata* compensatory effort to overcome this *Kapha* obstruction to maintain metabolic homeostasis. The resulting symptoms reflect this dual-dosha imbalance:
Vata imbalance: Muscle cramps, dry skin, and hair loss.
Kapha/Ama accumulation: Weight gain, constipation, and mental sluggishness (brain fog).

THERAPEUTIC INTERVENTION

The patient was prescribed a multi-modal Ayurvedic treatment protocol aimed at Deepana-Pachana (enhancing digestion and metabolizing toxins), Sroto-shodhana (clearing channels),

and Lekhana (scraping excess adipose tissue). The treatment was administered for a total duration of 10 months.

Table 1: Details of Ayurvedic Internal Medications

S. No	Drug Name	Dosage	Timing	*Anupana* (Vehicle)	Rationale
1	***Kanchanar Guggulu***	500 mg (1 tab)	Twice daily	Lukewarm water	Specific for *Galaganda*; reduces glandular swelling and clears *Kapha-Meda*[6]
2	***Chandraprabha Vati***	1000 mg (2 tabs)	Twice daily	Lukewarm water	Acts as a *Rasayana*; improves cellular metabolism and balances *Vata*
3	***Punarnava Mandur***	250 mg (1 tab)	Twice daily	Lukewarm water	Addresses sluggishness and mild edema (*Shotha*) associated with thyroid dysfunction
4	***Triphala Guggulu***	500 mg (1 tab)	Twice daily	Lukewarm water	Potent *Lekhana* (scraping) agent; promotes *Sroto-shodhana* and bowel regularity
5	***Kumaryasava***	20 ml	At bedtime (HS)	Equal amount of water	Liver stimulant and mild laxative; addresses *Vibandha* (constipation)
6	***Kantakari Avaleha***	10 gm	Early morning	Empty stomach	Clears *Kapha* from the *Kantha* (throat) region and enhances respiratory-metabolic efficiency

7. *Anu Taila Nasya* (Topical Intervention)

Daily Anu Taila Nasya was administered at two drops per nostril every morning. Grounded in the principle "*Nasa hi shiraso dwarem*" (the nose is the gateway to the head), this therapy targets *Urdhvajatrugata* organs[7]. It specifically stimulates the Hypothalamic-Pituitary-Thyroid (HPT) axis, facilitating neuro-endocrine regulation of the pituitary and thyroid glands to restore physiological hormonal balance and metabolic function.

Follow-up and Outcome

The patient demonstrated excellent compliance with the 10-month treatment protocol. Systematic monitoring was conducted through monthly clinical reviews and periodic biochemical assessments to track the resolution of symptoms and thyroid function.

RESULT

Significant symptomatic improvement was observed within the first 3 months of therapy. The patient reported a substantial reduction in muscle cramps and fatigue. By the 5th month, bowel habits normalized (resolution of constipation), and there was a visible improvement in skin texture and hair fall. By the conclusion of the 10-month period, the patient achieved complete clinical remission of all presenting symptoms.

Table 2: Details of Biochemical Progression

Serial thyroid function tests (TFT) documented a steady decline in serum TSH levels and the stabilization of T4, as shown in the table below:

Parameter	Baseline (Month 0)	Mid-point (Month 5)	Final (Month 10)	Reference Range
TSH (µIU/ml)	**6.816**	**4.59**	**3.41**	0.45 – 4.5 µIU/ml
Total T4 (µg/dl)	**14.66**	**10.81**	**10.44**	5.1 – 14.1 µg/dl

Observations

At the 5th-month evaluation, the TSH had decreased by approximately 33%, reaching the upper limit of the normal range. By the 10th month, the TSH settled at a healthy physiological level of 3.41 µIU/ml, while the T4 levels—which were initially borderline high—stabilized at a mid-normal range (10.44 µg/dl). Also, the

patient experienced a weight loss of 5 kg during this interval. No adverse effects were reported during the entire duration of the Ayurvedic intervention.

DISCUSSION

The clinical success in this case of Subclinical Hypothyroidism (SCH) underscores the efficacy of a dual-pronged Ayurvedic strategy: the restoration of Agni (metabolic fire) and the neuro-endocrine stimulation of the Hypothalamic-Pituitary-Thyroid (HPT) axis through Nasya.

In Ayurveda, Subclinical Hypothyroidism (SCH) is viewed as Agni Mandya (impaired metabolism) at the tissue level (*Dhatvagni*), leading to the accumulation of Ama (metabolic toxins). In this case, the administration of *Kanchanar Guggulu* and *Triphala Guggulu* served as potent *Lekhana* (scraping) and *Amapachana* agents, utilizing their *Ushna Virya* (hot potency) to clear *Sroto-avarodha* (channel obstruction) in the *Medovaha Srotas*. Simultaneously, *Chandraprabha Vati* and *Punarnava Mandur* enhanced *Dhatvagnivardhana*, rekindling the metabolic fire and normalizing cellular energy conversion[8,9]. This systematic restoration of internal metabolism reduced the physiological requirement for compensatory pituitary activity, resulting in the steady decline of TSH from 6.816 to 3.41 µIU/ml. This metabolic correction was further supported by *Anu Taila Nasya*, which provided a direct pathway to central regulatory mechanisms. Grounded in the principle of "*Nasa hi shiraso dwarem*" (the nose is the gateway to the head)[10], *Nasya* targets the *Shringataka Marma*, which correlates with the pituitary gland and the broader Hypothalamic-Pituitary-Thyroid (HPT) axis. From a modern perspective, the highly vascularized nasal mucosa allows for the neuro-modulation of these master glands, refining the endocrine feedback loop. By synergizing internal *Deepana-Pachana* therapies with the regulatory effects of *Nasya*, the treatment successfully downregulated TSH secretion from a "compensatory high" to a physiological normal state.

The biochemical stabilization of TSH (3.41 µIU/ml) and T4 (10.44 µg/dl) by the 10th month mirrored the complete resolution of fatigue, muscle cramps, and constipation. This suggests that the Ayurvedic protocol achieved systemic homeostasis rather than mere symptomatic suppression, highlighting its potential as a sustainable management strategy for early endocrine dysregulation.

CONCLUSION

This case report demonstrates that a structured Ayurvedic intervention focusing on Agni Deepana (metabolic stimulation) and *Sroto-shodhana* (channel cleansing) can effectively reverse Subclinical Hypothyroidism. The 10-month therapeutic protocol, involving oral formulations like *Kanchanar Guggulu* and the neuro-endocrine stimulation of *Anu Taila Nasya*, resulted in a significant biochemical reduction of serum TSH from 6.816 µIU/ml to 3.41 µIU/ml.

The clinical resolution of fatigue, muscle cramps, and constipation suggests that Ayurveda does not merely treat the laboratory values but restores systemic physiological balance. This case provides a strong rationale for utilizing Integrative Ayurvedic Protocols as a non-hormonal, sustainable management strategy for early-stage thyroid dysfunction, potentially preventing the progression to overt hypothyroidism.

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