



Case Report

Supportive Role of Traditional Polyherbal Medicine Alongside Levothyroxine in Autoimmune Thyroiditis: A Case Report

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Abstract

Background: Hashimoto's thyroiditis is an autoimmune disorder commonly associated with hypothyroidism, for which levothyroxine remains the standard treatment. This case describes the observed clinical and biochemical changes during supportive Ayurvedic management alongside levothyroxine. Case Presentation: A 27-year-old unmarried, office worker woman presented with fatigue, lethargy, weight gain, constipation, dry skin, hair fall, facial puffiness, excessive sleepiness, cold intolerance, and mild cognitive difficulties. Baseline investigations showed elevated thyroid-stimulating hormone (TSH; 58.83 μ IU/mL), reduced free thyroxine (FT4; 0.63 ng/dL), and markedly elevated anti-thyroid peroxidase antibodies (Anti-TPO; >1000 IU/mL). Levothyroxine was continued throughout management with tapering doses from 75 μ g for first 6 months to 50 μ g after 6 months onwards. Supportive interventions included *Virechana*, traditional polyherbal formulations, *yoga*, dietary modification, and lifestyle measures. Results: During follow-up, TSH decreased to 3.98 μ IU/mL and FT4 increased to 1.02 ng/dL, while Anti-TPO was 756.96 IU/mL at approximately 8 months. Clinical symptoms also improved, with the hypothyroid symptom score decreasing from 6/7 to 2/7. Perceived Stress Scale-10 (PSS-10) score decreased from 20 to 3 after completion of therapy. No serious adverse events were reported. Conclusion: Improvement was observed during integrative management. However, because levothyroxine was continued and multiple interventions were used concurrently, this single case cannot establish a causal effect of Ayurvedic treatment. Further controlled studies are warranted for larger population and longer followup.

Keywords: Integrative Medicine, Ayurveda, Autoimmune Hypothyroidism, Hashimoto's Thyroiditis, Levothyroxine, Case Report

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Introduction

Hashimoto's thyroiditis (HT), also referred to as chronic autoimmune thyroiditis, is the most common autoimmune disorder affecting the thyroid gland and an important cause of primary hypothyroidism. The condition is characterized by an autoimmune response directed against thyroid antigens, frequently accompanied by elevated serum anti-thyroid peroxidase (anti-

TPO) antibodies and progressive impairment of thyroid hormone synthesis. Its occurrence is considerably higher among women, and the reported prevalence varies across populations according to geographic, demographic, nutritional, and diagnostic factors. A recent systematic review and meta-analysis estimated the global prevalence of HT in adults at approximately 7.5%, with a substantially higher occurrence among women.(1)

Levothyroxine (LT4) remains the established treatment for hypothyroidism and is primarily used to restore circulating thyroid hormone concentrations and achieve biochemical euthyroid through appropriate thyroid-stimulating hormone (TSH) control. Nevertheless, a proportion of patients continue to report fatigue, impaired concentration, sleep disturbances, weight-related concerns, and other nonspecific symptoms despite normalization of thyroid biochemical parameters. A systematic review of

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interventions for persistent symptoms in treated hypothyroidism identified this as a clinically relevant problem and emphasized the limited evidence supporting additional therapeutic strategies.(2) Similarly, systematic evidence suggests that thyroid autoimmunity may be associated with persistent symptoms or reduced quality of life in some patients even when thyroid hormone concentrations are within the reference range.(3) These observations have encouraged interest in patient-centred approaches that complement, rather than replace, conventional thyroid hormone replacement.

Integrative medicine approaches have therefore received increasing research attention in thyroid disorders. *Yoga* is one of the better-studied complementary interventions. A systematic review published in 2024 identified 11 clinical studies involving 516 individuals with hypothyroidism, including randomized and non-randomized trials. The interventions commonly incorporated combinations of *asana*, *pranayama*, meditation, and *Surya Namaskara*. Improvements were reported across selected thyroid, metabolic, psychological, sleep, and quality-of-life outcomes; however, substantial variation in study design and intervention protocols, together with differing risks of bias, limited the strength of the conclusions.(4) Another systematic review similarly reported potentially favourable effects of *yoga* in hypothyroidism while emphasizing the need for adequately powered, methodologically rigorous randomized controlled trials.(5) Thus, current evidence supports investigating *yoga* as a possible adjunctive intervention but does not establish it as a replacement for thyroid hormone therapy.

Ayurvedic approaches to thyroid disorders generally employ individualized therapeutic strategies based on the patient's clinical presentation and constitutional assessment, together with dietary and lifestyle measures. Published clinical research on Ayurvedic interventions in hypothyroidism remains relatively limited compared with the evidence base for levothyroxine. Recent clinical studies have nevertheless begun to examine Ayurveda as an adjunct to conventional treatment. A randomized controlled study evaluating a whole-system Ayurvedic intervention in patients receiving stable levothyroxine therapy reported improvements in selected clinical and biochemical outcomes. Such findings provide a rationale for further investigation but should be interpreted within the limitations of the available evidence and differences between study populations, treatment protocols, and outcome measures.

Individual Ayurvedic interventions have also been investigated in thyroid-related disorders. For example, a randomized placebo-controlled clinical trial of *Withania somnifera* (L.) Dunal. root extract reported improvement in selected thyroid parameters in adults with subclinical hypothyroidism.(6) However, subclinical hypothyroidism differs clinically and biochemically from overt autoimmune hypothyroidism, and therefore these findings cannot be directly extrapolated to patients with Hashimoto's thyroiditis. Similarly, evidence concerning other traditional polyherbal formulations remains insufficient to determine their independent effects on thyroid autoimmunity or thyroid hormone replacement requirements.

From an Ayurvedic perspective, the management of chronic disorders may incorporate interventions directed towards *Agni*, *Ama*, *Dosha* balance, dietary regulation, and individualized lifestyle practices.(7) In the present case, these principles were applied through a multimodal supportive protocol comprising *Virechana*, selected polyherbal preparations, *yoga*, and dietary modification alongside prescribed levothyroxine. The intention

was not to substitute traditional therapy for established hormone replacement, but to document the clinical course associated with an integrative treatment strategy.

Despite increasing interest in complementary approaches, evidence specifically addressing multimodal Ayurvedic supportive management in newly diagnosed Hashimoto's thyroiditis remains limited. In particular, published case reports and clinical studies vary considerably in diagnostic criteria, intervention composition, treatment duration, and outcome assessment. Moreover, simultaneous administration of levothyroxine and multiple complementary interventions makes it difficult to determine the independent contribution of any individual component. Therefore, carefully documented case reports may provide useful clinical observations and generate hypotheses for subsequent controlled research, while not establishing therapeutic efficacy.

The present case report describes the clinical, biochemical, and radiological course of a young woman with newly diagnosed Hashimoto's thyroiditis managed with levothyroxine alongside a structured Ayurvedic supportive protocol, *yoga* practice, and individualized dietary measures. The report focuses on the temporal changes in symptoms, thyroid function tests, anti-TPO antibody concentration, and thyroid ultrasonography, while interpreting these findings cautiously in view of the concurrent conventional treatment and the inherent limitations of a single-patient observation.

Case Presentation

Patient Demography and Clinical History

A 27-year-old non-diabetic, non-hypertensive female patient presented with complaints of continuous fatigue, lethargy, weight gain despite diet control, constipation, dry skin and dry scalp with hair fall, puffiness around eyes, excessive sleepiness associated with symptoms of cold intolerance and mild cognitive impairment affecting daily work effectiveness past 4-5 months.

No significant medical, surgical history, or chronic medication use prior to presentation was noted. Family history of Hypothyroid disease was reported in mother. Social history revealed moderate occupational stress as she has office work with a fix schedule of 10 am to 6 pm without significant lifestyle modifications.

Physical examination revealed no thyroid nodules or lymphadenopathy on palpation. Patient was unmarried and menstrual history reveals regular cycle of 5 days menstrual phase with complete cycle of 30 days.

Clinical examination showed blood pressure 110/70 mmHg, pulse rate was 60 beats per minute, temperature measured as 97.2°F and body mass index (BMI) was 27.6 kg/m² corresponding overweight category. No history was reported for smoking and alcohol consumption. The patient was unmarried and pregnancy testing was not applicable in this case. Nutritional assessment showed vitamin D – 35 ng/mL (28/06/2025) and vitamin B12 – 395 pg/mL(28/06/2025). Iron Profile (28/06/2025) and dietary Iodine intake was within normal limits. Stress level assessed on Perceived Stress Scale (PSS - 10) with score of 20 and no sleep disturbance were reported. No previous thyroid investigations were reported by patient.

The patient's daily regimen starts with arising at 7 am. She has a shower by 8:30 am and breakfast at 9:30 am. She has been having breakfast with options such as *poha*, *upma*, *shabudana*, *paratha* and a cup of tea. Lunch time was typically between 1-2 pm comprising vegetarian food including chapati, dal and cooked

vegetables with pickles or *chatni* along with fried snacks. Dinner was taken at 9:30 – 10 pm (occasionally nonveg) and a glass of lukewarm water before going to bed at 12:30 am.

Prakriti Assessment

On basis of traditional diagnostic principles patients' constitution was demonstrated as '*Kapha Pradhan Pitta Prakriti*' with help of CCRAS - Standard *Prakriti* Assessment Protocol(8).

Symptomatic Assessment

A validated questionnaire was used to assess symptoms as follows:

Table 1: Symptomatic Assessment

Sr. No.	Parameter	Grade
1	Symptoms of Hypothyroid (American Thyroid Association)	6/7
2	<i>Rasavridhhi Lakshan</i>	5/12 (moderate)
3	<i>Rasakhaya Lakshan</i>	7/12 (moderate)
4	<i>Rasavahasrotodushti Lakshan</i>	7/12 (moderate)
5	Type of <i>Agni</i> (digestive fire)	<i>Mandagni</i> (weak digestive fire)

Diagnostic Investigations

Baseline Ultrasonographic Findings (24 Jun 2025)

Right lobe: 35 × 14 × 10 mm

Left lobe: 30 × 14 × 14 mm

Isthmus: 3.9 mm in AP diameter

Echogenicity: Mildly diffuse thyroidomegaly seen. Fine tiny ill-defined hypoechoic areas are seen in scattered in both lobes of thyroid.

Doppler vascularity: Normal

Lymph nodes: No cervical lymphadenopathy.

Impression: Mild diffuse thyroid echo pattern consistent with autoimmune thyroiditis; no focal lesions identified.

Figure 1: USG Neck 24 June 2025

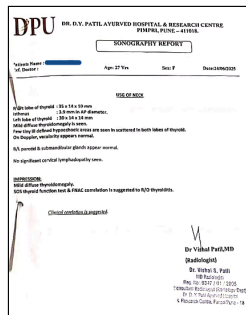


Figure 2: Radiological images of Thyroid 24 June, 2025

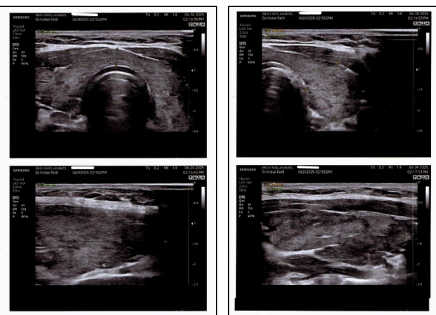


Figure 3: Radiological images of Thyroid 24 June, 2025



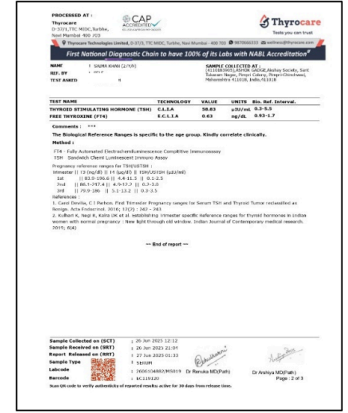
Table 2: Baseline Biochemical Parameters (26 Jun 2025)

Sr No.	Parameter	Baseline Value	Reference Range	Status
1	TSH	58.83 μ IU/mL	0.40-4.00 (non-pregnant)	Markedly Elevated
2	Free T4	0.63 ng/dL	0.93-1.7	Low
3	Anti-TPO	>1000 IU/mL	<9 (negative)	Markedly Positive

Figure 4: Anti-TPO Lab Report 26 Jun 2025



Figure 5: TSH and Free T4 Lab Report 26 Jun 2025



Clinical Diagnosis: Patient is clinically diagnosed as Hypothyroidism with autoimmune response as Hashimoto's thyroiditis. Biochemical profile shows significantly elevated anti-TPO antibodies, TSH and reduced FT4.

Management Protocol

Pharmaceutical Interventions: Synthetic Levothyroxine was prescribed with tapering doses based on TSH optimization.

Table 3: Dosing schedule

Sr No.	Duration	Dose	Timeline
1	1- 3 months	75 μ g daily	On empty Stomach
2	3 - 6 months	75 μ g daily	20- 30 minutes before breakfast.
3	6 months onwards	50 μ g (Tapered on basis of TSH response - target 0.5 –4.5 μ IU/mL)	

Precautions: Patient specially advised to avoid iron, calcium, or coffee intake within 4 hours of levothyroxine intake.(9)

Ayurvedic Polyherbal Therapy: Initial protocol was planned as *Virechana* (purgation) with *Deepana* (stimulation of digestive fire), *Pachana* (digestion of metabolic toxins).

Purgation Therapy: After *Vishrama Kala* (resting period) of 3 days, 30 gm of *Trivrutta Awleha* (Medicated paste of *Operculina turpethum* (L.) Silva Manso.) with *Draksha Jala* (Raisin mixed water) and lukewarm water was administered on day morning.

Total 20 *vega* (number of stools passed) were observed with *Samyaka Virikta Lakshana* (Proper Purgation Symptoms) with 2kg weight loss during this period and *Samasarjana Krama* (post purgation therapy dietetic regimen for restoring strength of digestive fire) was followed for 5 days.

Table 4: Pre Purgation Medications

Sr No.	Drug and Dose	Adjuvant and Duration	Mode of Action
Internal Medications			
1	<i>Shunthi</i> (<i>Zingiber officinale</i> Roscoe.) (500 gm) + <i>Guduchi</i> (<i>Tinospora cordifolia</i> (Willd.) Hook. f. and Thomson.) (2gm) + <i>Haritaki</i> (<i>Terminalia Tiktaka Ghrita</i>)	Twice a day before meal for 9 days	<i>Shunthi</i> (<i>Zingiber officinale</i> Roscoe.) act as <i>Deepana</i> for weakened digestive fire, <i>Guduchi</i> (<i>Tinospora cordifolia</i> (Willd.) Hook. f. and Thomson.) have immunomodulatory and detoxifying properties while <i>Haritaki</i> (<i>Terminalia chebula</i> Retz.) act as mild laxative
2	Day 1 – 40 ml Day 2 – 60 ml Day 3 – 80 ml Day 4 – 100 ml	With lukewarm water in morning empty stomach	It pacifies vitiated <i>pitta</i> , lubricate the tissue channels, soften <i>dosha</i> and facilitate their easy expulsion without increasing heat and inflammation.(11)
External therapy			
3	<i>Tila Taila</i> (Sesame oil)	<i>Snehana</i> (external oleation) for 3 days.	<i>Tila Taila</i> (Sesame oil) nourishes tissues and pacifies <i>vata dosha</i> .(12)
4	<i>Bashpa swedana</i> (sudation)	<i>Snehana</i> (external oleation) followed by <i>Bashpa swedana</i> (sudation) for 3	Sudation helps in liquification of <i>dosha</i> , opening of blockages in tissue channels and help elimination of <i>Ama</i> (metabolic toxins).(12)

Table 5: Samsarjana Krama (Dietetic regimen for revival)

Day	Morning	Evening
Day 1	Purgation	<i>Peya</i> (thin gruel of rice)
Day 2	<i>Peya</i> (thin gruel of rice)	<i>Vilepi</i> (thick gruel of rice)
Day 3	<i>Vilepi</i> (thick gruel of rice)	<i>Akruta Yusha</i> (unprocessed green gram soup)
Day 4	<i>Krut yusha</i> (green gram soup processed with cumin, ghee,	<i>Akrut yusha</i> (unprocessed vegetable soup)
Day 5	<i>Krut yusha</i> (processed vegetable soup)	Normal diet pattern was given.

Table 6: Thyroid-Supporting Formulation

Sr No.	Drug	Dose With Adjuvant	Mode of Action
The polyherbal treatment was planned for next 90 days.			
1	<i>Ashwagandha</i> (<i>Withania somnifera</i> (L.) Dunal.) Tablet	500 mg twice daily after meal with lukewarm water.	Rejuvenating properties of <i>Withania somnifera</i> (L.) Dunal. helps to lower Anti-TPO levels. It contains withanolides which have immunomodulatory properties that regulate Th1/Th17 autoimmune response.(6)
2	<i>Kanchanar Guggulu</i> Tablet (Polyherbal Tablet)	500mg twice daily before meal with lukewarm water	It contains guggulsterones which regulates hepatic conversion of T4 to active T3 and also modulates disturbed lipid mechanism in hypothyroidism.(7)
3	<i>Brahmi</i> (<i>Bacopa monnieri</i> (L.) Wettst.) Tablet	200 mg daily with milk in morning.	It supports cognitive functions and has antioxidant properties which reduce oxidative stress in autoimmune thyroiditis.(13)
4	Turmeric (<i>Curcuma longa</i> L.) Powder	5gm powder with warm water on empty stomach in morning.	It has anti-inflammatory properties and works by targeting TNF-alpha and NF-kappa-B pathways.(14)

After Follow-up

Hamsapadyadi Kashaya (polyherbal decoction) was prescribed 10 ml after meal for next 2 months with continuation of *yoga* practice. It acts as digestive stimulant and purifier.(15)

All polyherbal preparations were obtained from accredited Ayurvedic pharmaceutical manufacturer.

Trained Yoga Practice

Patient was trained for *yoga* practices for 45 minutes daily which included:

Surya Namaskar (Sun Salutations): Started as 3,5,7,10 and 12 on each alternate day and sustained as 12 cycles daily (approximately 10 minutes). Studies suggests that it activate

thyroid region through sustained neck flexion-extension movements and enhance circulation to thyroid tissue improving thyroid function.(16)

Bhujangasana (Cobra Pose): It was practiced in 3 sets with 5 repetitions, with-held for 20-30 seconds for each sitting, providing thyroid stimulation through neck extension.(16)

Sarvangasana (Shoulder Stand): 3-5 minutes daily when feasible, for thyroid compression and enhanced blood flow to gland.(16)

Pranayama (Breathing Practices): It was advised to be done for 10 minutes daily to activate parasympathetic nervous system and reduce hypothalamic-pituitary-thyroid (HPT) axis hyperactivity secondary to elevated TSH.(16)

Yoga was initiated under supervision of a certified *yoga* teacher, experienced in therapeutic *yoga*. Patient performed exercises in standardized setting for first 4 weeks, then transitioned to supervised home practice with video-call monitoring.

Dietary Modifications

Personalized dietary regimen was advised to regain the strength of digestive fire (*Agni*) and removal of accumulated metabolic toxins (*Ama*).

Foods Recommended (Anti-Inflammatory, Immune-Supportive):

Warming spices: Turmeric (*Curcuma longa* L.), Ginger (*Zingiber officinale* Roscoe.), Cumin (*Cuminum cyminum* L.), Black pepper (*Piper nigrum* L.).

Cow Ghee: 1 teaspoon with meals for lipid-soluble hormone absorption.(17)

Bone broth (2-3 times weekly) for collagen and amino acid support.

Selenium-rich foods: Sesame (*Sesamum indicum* L.) seeds, Sunflower (*Helianthus annuus* L.) seeds - this support glutathione

peroxidase for antioxidant defense against autoimmune thyroiditis.(18)

Zinc-rich foods: Pumpkin (*Cucurbita pepo* L.) seeds, Chickpeas (*Cicer arietinum* L.) - they are essential for immune tolerance development.(19)

Foods Restricted (Pro-Inflammatory, Ama-Promoting):

Refined wheat (*Maida*), Soy Flour, Processed grains.(20)

Inflammatory oils (refined vegetable, soy, canola).(20)

Sugars, refined carbohydrates.(20)

Cold foods and beverages (contraindicated in *Ayurvedic* protocol for thyroid conditions).(20)

Cruciferous vegetables e.g. Cabbage (*Brassica oleracea* var. *capitata* L.), Cauliflower (*Brassica oleracea* var. *botrytis* L.), Radish (*Raphanus sativus* L.), Spinach (*Spinacia oleracea* L.), Tofu (*Glycine max* (L.) Merr.) in raw or undercooked form - contains goitrogens; which affects thyroid hormone action.(21)

Meal Timing: Patient maintained consistent meal schedule with largest meal at midday when digestive fire (*Agni*) is strongest per *Ayurvedic* principles and lighter evening meals, supporting stable thyroid hormone absorption and metabolism.

Results

Table 7: Follow-up Biochemical Parameters (26 Aug 2025)

Sr No.	Parameter	Baseline Value	Reference Range	Status
1	TSH	3.98 μ IU/mL	0.40-4.00 μ IU/mL (non-pregnant)	Within Normal Limits
2	Free T4	1.02 ng/dL	0.93-1.7 ng/dL	
3	Free T3	2.60 pg/mL	1.71-3.71 pg/mL	

Table 8: Treatment Timeline and Monitoring

Sr. No.	Parameter	Grade (10/06/2025)	Grade (28/08/2025)	Grade (10/02/2026)
1	Symptoms of Hypothyroid (American Thyroid Association)	6 out of 7	5 out of 7	2 out of 7
2	Rasavridhhi Lakshan	5 out of 12	4 out of 12	1 out of 12
3	Rasakshaya Lakshan	7 out of 12	4 out of 12	1 out of 12
4	Rasavahasrotodushti Lakshan	7 out of 12	6 out of 18	2 out of 12

Table 9: Follow-up Biochemical Parameters (26 Feb 2026)

Sr No.	Parameter	Baseline Value	Reference Range	Status
1	Anti-TPO	756.96 IU/mL	<5.61 (negative)	Positive

Fig. 6 Free T3 and T4 with TSH Lab Report 26 Aug 2025

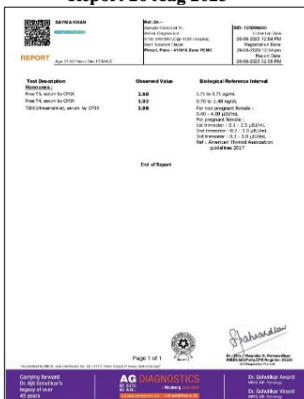
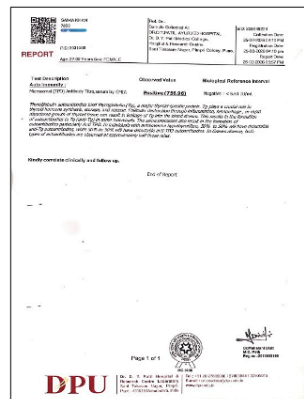


Fig. 7 Anti TPO Follow up (26 Feb 2026)



Baseline Ultrasonographic Findings (10 Sept 2025)

Right lobe: $18 \times 12 \times 7.5$ mm (normal volume)

Left lobe: $18 \times 12 \times 7.6$ mm (normal volume)

Isthmus: 1.6 mm (normal)

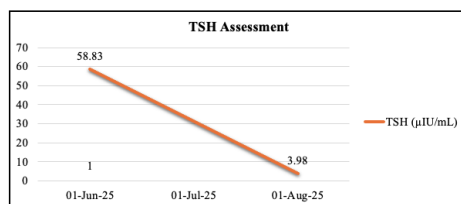
Echogenicity: Thyroid gland appears normal in size and echo pattern. No focal lesion seen.

Doppler vascularity: Normal

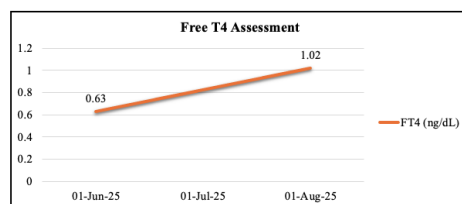
Lymph nodes: No cervical lymphadenopathy

Impression: No significant abnormality seen.

Graph 1: TSH Assessment



Graph 2: Free T4 Assessment



Graph 3: Anti-TPO Level Assessment

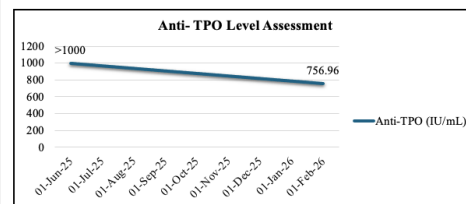


Figure 8: USG Neck 10 Sept 2025

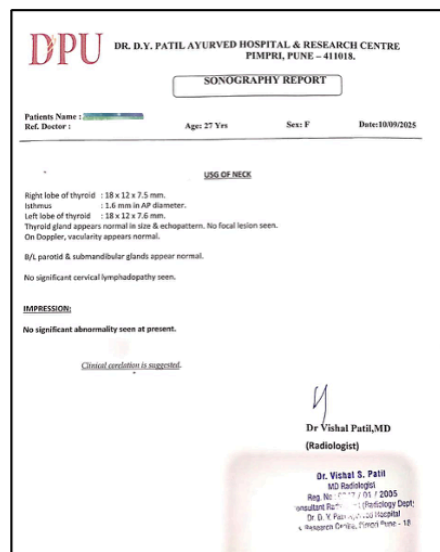


Fig. 9 Radiological images of Thyroid 10 Sept 2025

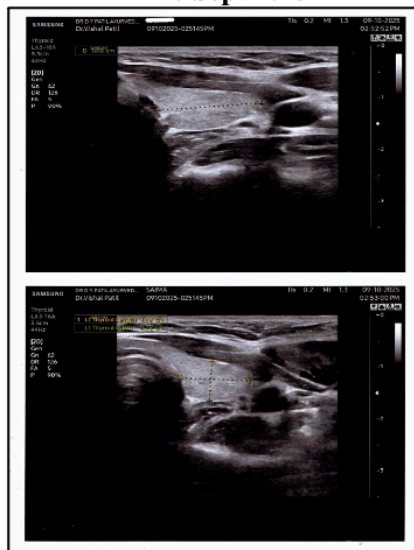
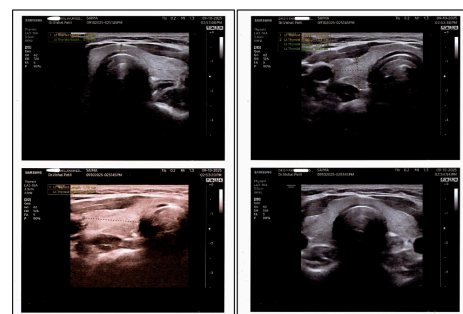


Figure 10: Radiological images of Thyroid 10 Sept 2025



Treatment Tolerance

No allergic reactions were noted for polyherbal formulations. 85% adherence to *Yoga* practice and 80% adherence to dietary modifications were observed over 18 weeks.

Safety Monitoring and adverse

No adverse event was noted during treatment period. Occasional mild heartburn and temporary appetite fluctuation in 6th week was observed which was managed by postprandial walk and time management for meals. No clinically apparent interaction was observed between synthetic levothyroxine and polyherbal medications based on patient response and biochemical stability.

Follow up and Outcome

Final assessment of patient showed significant relief from symptoms and decreased TSH levels. A considerable lowering in Anti-TPO levels also observed. No further tapering of Levothyroxine is required within timeline of treatment. Appetite was improved after Purgation therapy and dryness of skin and scalp was resolved. Constipation was resolved, hair fall reduced, no complaints of lethargy, fatigue and excessive sleepiness was observed. Moreover, patient reported that she is feeling lightness in body, fresh and relaxed throughout day. After complete therapy stress level assessed on Perceived Stress Scale (PSS - 10) seen reduced to 3.

Discussion

Hashimoto's thyroiditis (HT) is a chronic autoimmune disorder that frequently results in primary hypothyroidism. Levothyroxine (LT4) remains the established treatment for overt hypothyroidism,

with treatment adequacy assessed primarily through thyroid function testing and clinical response. In the present case, LT4 was therefore continued throughout the treatment period, while Ayurvedic interventions, *yoga*, and dietary modification were used as supportive measures. The observed outcomes should consequently be interpreted in the context of this combined management rather than as evidence for the independent efficacy of any individual intervention.

The patient initially presented with symptomatic and biochemical hypothyroidism, with TSH of 58.83 μ IU/mL, free T4 of 0.63 ng/dL, and Anti-TPO >1000 IU/mL. During follow-up, TSH decreased to 3.98 μ IU/mL and free T4 increased to 1.02 ng/dL, while several clinical symptoms improved. Anti-TPO subsequently decreased to 756.96 IU/mL. These changes occurred during integrative management; however, causal attribution to the Ayurvedic or lifestyle interventions is not possible because LT4 was administered concurrently and its dose was later reduced according to the thyroid function response. In addition, multiple interventions were initiated together.

The findings can be compared with emerging evidence on complementary interventions in hypothyroidism. A 2024 systematic review of *yoga* identified 11 studies involving 516 participants, including four randomized controlled trials.(4) Although several studies reported improvements in thyroid-related, psychological, metabolic, sleep, or quality-of-life outcomes, the review highlighted considerable heterogeneity in intervention protocols and study quality. A second systematic review including eight studies and 421 participants similarly suggested a possible adjunctive role for *yoga* but emphasized limitations in the available evidence.(5) Therefore, the

symptomatic improvement observed in this patient is compatible with the direction of findings reported in the literature, but the present case cannot establish an independent effect of *yoga* on thyroid function or autoimmune activity. In particular, the proposed mechanisms of increased thyroid blood flow or direct thyroid stimulation by specific postures were not measured in this case and are not necessary to explain the clinical observations.

Evidence for Ayurveda as an adjunct to conventional treatment is also emerging. A 2025 randomized controlled trial involving 46 patients with primary hypothyroidism and suboptimal response despite stable LT4 therapy found greater improvements in TSH, body weight, selected anthropometric measures, quality of life, and clinical severity with a whole-system Ayurveda protocol compared with *Kanchanar Guggulu* alone.(4) This study provides relevant comparative evidence because Ayurveda was investigated alongside LT4 rather than as a replacement for hormone therapy. Nevertheless, the study population and intervention differed from the present case, particularly with respect to autoimmune status and the specific multimodal protocol used. Its findings therefore provide contextual support for further investigation rather than confirmation of efficacy in Hashimoto's thyroiditis.

The present protocol included *Virechana* followed by polyherbal therapy, *yoga*, and dietary modification.(22) Although *Virechana* has an established therapeutic role within Ayurvedic practice, clinical evidence demonstrating that it reduces thyroid autoantibody production or modifies the underlying autoimmune process in HT is currently insufficient. Accordingly, the reduction in Anti-TPO observed in this patient should not be interpreted as evidence that *Virechana* altered the autoimmune response. The procedure may be considered one component of the individualized supportive protocol, while its specific contribution remains uncertain.

Among the herbal components, *Withania somnifera* (L.) Dunal. has some clinical evidence in thyroid disorders. A randomized, double-blind, placebo-controlled trial involving 50 patients with subclinical hypothyroidism reported significant improvements in TSH, T3, and T4 after 8 weeks of treatment with 600 mg/day of *Withania somnifera* (L.) Dunal. root extract.(6) However, the study involved subclinical hypothyroidism and used a standardized root extract, whereas the present patient had overt, antibody-positive hypothyroidism and received a broader polyherbal regimen. Thus, the findings cannot be directly extrapolated to HT or used to attribute the biochemical response in this case to *Withania somnifera* (L.) Dunal. alone.

Evidence regarding nutritional interventions is similarly relevant but should be interpreted carefully. A 2024 systematic review and meta-analysis of 35 randomized clinical studies reported a reduction in TPO antibodies with selenium supplementation, although substantial heterogeneity was present among the included studies.(23) The present patient was advised to consume selenium-containing foods rather than receive a standardized selenium supplement, and selenium status was not measured. Consequently, the observed reduction in Anti-TPO cannot be attributed specifically to dietary selenium. More broadly, the reduction in antibody concentration should be regarded as a longitudinal observation rather than proof of modification of autoimmune disease activity.

The symptomatic response in this case is also clinically relevant. Fatigue, constipation, cold intolerance, dry skin, hair fall, excessive sleepiness, and cognitive complaints improved during follow-up. A systematic review of patients with Hashimoto's disease reported that thyroid autoimmunity may be associated

with persistent symptoms or reduced quality of life even when thyroid hormone concentrations are within the reference range. This supports the importance of documenting patient-reported symptoms in addition to biochemical thyroid parameters. Nevertheless, symptomatic improvement in the present case may reflect normalization of thyroid hormone status with LT4, lifestyle modification, *yoga*, dietary changes, nonspecific therapeutic effects, or a combination of these factors.

The radiological findings also changed during follow-up, with the initial ultrasound showing mild diffuse thyroid enlargement and an autoimmune-pattern echo texture, while the subsequent examination reported normal thyroid size and echogenicity without focal abnormality. Because ultrasound findings can vary with disease activity, technical factors, and timing, and because only two examinations were available, this change should be considered descriptive rather than evidence of structural reversal attributable to the integrative intervention.

Overall, the present case adds to the limited clinical literature on Ayurveda and *yoga* as supportive approaches alongside LT4 in hypothyroidism. Its strength lies in the longitudinal documentation of symptoms, thyroid function, Anti-TPO concentration, and ultrasonographic findings during a multimodal treatment program. However, the simultaneous use of LT4 and several Ayurvedic and lifestyle interventions prevents determination of the contribution of any individual component. The findings therefore support the feasibility of documenting an integrative supportive approach and generate a hypothesis for future research, rather than demonstrating treatment efficacy. Prospective controlled studies with standardized interventions, validated symptom measures, serial thyroid antibody assessment, careful monitoring of LT4 dose, and longer follow-up are required to determine whether Ayurvedic supportive care provides benefits beyond optimized conventional treatment.

Limitations

There are a number of limitations with respect to this report. For instance, being a single patient report, it is not possible to establish a cause-and-effect relationship between the Ayurvedic treatments used and their outcomes. Levothyroxine treatment was done simultaneously and many treatments were used at once, which made it hard to isolate the influence of any of the components. The results obtained could have been due to normal variations in the progression of the disease, compliance, placebo effects and observational bias. There was also limited follow-up on the progress of the autoimmune thyroid disorder.

Integration with Current Clinical Practice

Evidence-based integrative approaches to autoimmune thyroiditis represent a pattern of shift toward more holistic, patient-centered care that aims not only to alleviate symptoms but also to address the root causes of the disease. Practitioners should maintain accuracy in levothyroxine-based biochemical monitoring (TSH, Free T4 every 8-12 weeks during titration) while considering adjunct therapies with documented safety and mechanistic probability. The patient has a right to choose based on the cultural background, and the practitioner has a right to use the qualified one.

Conclusion

This case describes improvement in symptoms and thyroid biochemical parameters during integrative management consisting of levothyroxine with supportive Ayurvedic interventions, *yoga*, and dietary modification. The observed reduction in Anti-TPO

concentration is noteworthy but cannot be interpreted as evidence of modification of autoimmune disease activity. Because levothyroxine was administered concurrently and multiple interventions were introduced simultaneously, the individual contribution of the Ayurvedic components cannot be established. The findings therefore suggest a potential supportive role for an integrative approach rather than demonstrating therapeutic efficacy. Prospective controlled studies using standardized interventions, validated outcome measures, repeated autoimmune-marker assessment, and longer follow-up are required to determine its clinical relevance.

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Consent to Participate declaration

Written informed consent was obtained from the patient for case documentation, publication of clinical findings, and use of laboratory and imaging data. All identifiable information has been removed. The patient understood the voluntary nature of participation and withdrawal rights.

Clinical trial number: Not applicable

Conflicts of Interest

There are no conflicts of interest.

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Authors' contributions

Dr. Vaishnavi Deshmukh and Dr. Abhishek Kadam – Contributed equally to designing and conducting the case assessment, managed the integrated treatment protocol, and drafted the manuscript.

Dr. Vinayak Joshi and Dr. Prakash Mane supervised the clinical strategy, formulated the polyherbal regimen, and ensured scientific accuracy.

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