

Management of hypothyroidism by *Kshara Basti* (therapeutic enema)– A case report

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Abstract

Hypothyroidism is emerging as a common health concern in India as well as worldwide. An autoimmune cause accounts for approximately 90% of adult hypothyroidism mostly due to Hashimoto's disease. This autoimmunity goes parallel with the theory of *Ama* (intermediary product) in Ayurveda. A case of a 27-year-old female patient, presenting with pain in multiple joints, deformity in the right little finger, morning stiffness lasting for more than 3 h, reduced appetite, constipation, and lethargy, diagnosed with *Amavata* (rheumatoid arthritis), was subclinically diagnosed with hypothyroidism and treated with *Deepana* (stimulates digestion), *Pachana* (promotes digestion) and *Koshtha Shuddhi* (mild purgation) for 5 days followed by *Kshara Basti* (therapeutic enema) for 5 days. Reduction in serum- thyroid-stimulating hormone (S. TSH) (31.1 μ IU/ml to 16.6 μ IU/ml) along with relief in clinical manifestations of the disease was the outcome. *Koshtha Shuddhi* followed by *Kshara Basti* has its efficacy in hypothyroidism, as it not only improved signs and symptoms but S.TSH level was reduced significantly. This case report proposes an innovative treatment modality for the management of hypothyroidism, which needs to be validated through a well-planned study on a large sample size.

Keywords: Autoimmunity, Hashimoto's thyroiditis, hypothyroidism, *Kshara Basti*

Introduction

Subclinical hypothyroidism refers to the finding of an elevated thyroid-stimulating hormone [TSH] level with a normal thyroxine (T_4) level in an asymptomatic patient. Subclinical hypothyroidism is found in approximately 6%–8% of women and 3% of men.^[1] Relationship between rheumatoid arthritis [RA] and the thyroid gland has been studied extensively for a long time. People with RA are more likely to develop an underactive thyroid disease-hypothyroidism or Hashimoto's disease.^[2] Auto-immune thyroid disorder and RA share common physiological mechanism. RA occurs when the body's immune system reacts against its own joints and connective tissues. Similarly, Hashimoto's thyroiditis occurs when the immune system attacks thyroid cells, interfering with their ability to synthesize thyroid hormones.^[2] As a result of this, thyroid auto-antibodies develop, which circulate in the body; this can be correlated with *Ama* (intermediary product due to impaired metabolism). From the Ayurvedic perspective, which acts as toxic and antigenic materials, giving rise to many antibodies, ultimately triggering a chronic inflammatory

process in the body. Current system of medicine, offers management of hypothyroidism, is a lifetime treatment with synthetic thyroxine. Ayurveda has better therapeutic options for managing hypothyroidism. *Panchakarma* procedures such as *Vamana* (therapeutic vomiting) and *Virechana* (therapeutic purgation) have been extensively evaluated for their efficacy in the management of hypothyroidism. The administration of *Koshtha Shuddhi* and *Kshara Basti* in hypothyroidism planned in the present case is an innovative approach.

Case Report

A 27-year-old female patient reported on September 6, 2016, with complaints of pain in inter-phalangeal

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Access this article online

Quick Response Code:



Website:
www.ayujournal.org

DOI:
10.4103/ayu.AYU_297_18

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How to cite this article: Singh K, Rais A, Thakar AB. Management of hypothyroidism by *Kshara Basti* (therapeutic enema)– A case report. AYU 2019;40:237-41.

Submitted: 19-Dec-2018

Revised: 15-May-2019

Accepted: 24-Sep-2020

Published: 14-Jan-2021

joints and other multiple joints history of bilateral upper limbs along with morning stiffness lasting for more than 3 h, since 1 year. She did not have any family history of RA. She had been taking analgesics, which had led to a reduction of symptoms temporarily. She had associated complaints of decreased appetite, constipation (bowel frequency once in 2 days) and lethargy. General physical examination revealed deformity present in the right little finger (flexed proximal interphalangeal joint). It was due to stiffness, as a consequence of which patient was unable to flex or extend that finger and had kept it in semiflexed position to relieve pain, which gradually led to the persistent semiflexed posture. Her menstrual cycle was regular. She had been married for 6 years. Her obstetric history revealed two induced abortions at the gestational age of 1½ months each and live birth of female child 3 years ago. Parameters like *Agni* (digestion), *Koshtha* (bowel habits), and *Prakriti* (constitution) were also analyzed. *Agni* was found to be *Manda* (weak), *Koshtha* was *Krura* (costive bowel). *Bala* (strength) was found to be *Alpa* (less) and *Sharirik Prakriti* (body constitution) was *Kapha* (dominance) *Vataja*. After proper history taking, she was advised biochemical investigations, RA factor, erythrocyte sedimentation rate (ESR) and S. TSH. Her RA factor, ESR and S. TSH were found to be raised [Table 1].

Based on clinical findings and laboratory investigations, she was diagnosed with RA^[3] associated with subclinical hypothyroidism.^[4] She was advised for *Koshtha Shuddhi* followed by *Kshara Basti*.^[5] All routine blood examinations were carried out and found within normal limits except ESR, which was found to be elevated at 28 mm/h. Her TLC was 9800/cu. mm and differential leucocyte count was in normal limit.

On September 21, 2016, the patient was admitted in IPD (Indoor Patient department) ward and before subjecting the patient to *Basti* (medicated

enema) procedure, *Koshtha Shuddhi* was done with *Gandharvahastadi-Erandatailam* (Arya Vaidya Sala pharmacy) 15 ml orally at bedtime along with oral administration of *Shivakshara Pachana Churna*^[6] 3 g TDS and *Shunthi Siddha Jala* (medicated water) for 5 days [Table 2]. For the next 5 days, *Kshara Basti* was administered daily, after performing whole body oleation and sudation. The contents of *Basti* are shown in Table 3. After assessing the *Bala* (body status) of the patient, she was advised to take *Mudgayusha* (soup made of green gram) in the morning, few hours before the administration of *Basti* to avoid weakness. *Basti* administration details are shown in Table 4. After completion of *Basti* (5 days) test were performed for RA factor and thyroid function [Table 1].

Outcomes

There was substantial relief in the subjective parameters. On discharge, when the patient was asked for the remnant complaints for advising oral medicines during follow up, she did not report any symptoms and had 100% relief in pain in joints. The deformity present in the right little finger resolved, as she could then extend the affected proximal interphalangeal joint. Stiffness lessened from more than 3 h in the morning to nearly about ½ h. Appetite was improved after treatment. Constipation was relieved. No complaint of weakness or lethargy was reported. Moreover, the patient had lightness in the body along with a feeling of being absolutely healthy. The main intent of the treatment was to assess the effect of *Kshara Basti* on the thyroid profile, and the results are summarized in Table 1.

A prescription containing internal medication of *Shunthi powder*^[7] 3 g with *Rasnasaptaka Kwatha*^[8] 50 ml twice daily, *Chitrakadi Vati*^[9] 2 (each *Vati* weighing 500 mg), twice daily after meal with lukewarm water and *Erandabhrishtha Haritaki* 5 g with lukewarm water at bedtime were given for 7 days.

Table 1: Effect of *Kshara Basti* on thyroid profile and rheumatoid arthritis factor

Thyroid profile	BT	AT (after 10 days of treatment)	Follow up (after 2 months of treatment)
S. TSH	31.1 µIU/ml	16.6 µIU/ml	5.76 µIU/ml
S. T ₃	1.38 ng/ml	0.95 ng/ml	1.91 ng/ml
S. T ₄	5.44 µg/dl	4.71 µg/dl	7.36 µg/dl
RA factor	154 IU/ml	404 IU/ml	---
ESR	28 mm	---	---

RA: Rheumatoid arthritis, TSH: Thyroid stimulating hormone, ESR: Erythrocyte sedimentation rate, BT: Before treatment, AT: After treatment

Table 2: Drugs and dosage

Drugs	Dosage	Administration time	Anupana	Days
<i>Koshtha Shuddhi</i> with <i>Gandharvahastadi Eranda Tailam</i>	15 ml	Bed time	Luke warm water	5
<i>Shivakshara Pachana Churna</i>	3 g	Thrice a day after meal	Luke warm water	5
<i>Shunthi Siddha Jala</i>	Throughout the day			5

Preparation of Amlika Kalka for Kshara Basti

The patient was advised to soak 100 g of *Amlika* (*Tamarindus indica* L.) in 100 ml water overnight to make it soft so that paste can be prepared out of it. Next morning the mixture was mashed properly and filtered through sieve to get the desired paste.

Preparation of Kshara Basti

Initially, 100 g *Guda* (jaggery) was put in mortar pestle and powdered well. To this, 10 g of *Saindhava* (rock salt) was added followed by mixing properly. To this mixture, *Amlika* paste 100 g was added and mixed well to ensure a homogeneous texture. The *Kalka* (paste) of *Shatahva* (*Anethum sowa* Roxb. ex Flem.) powder (10 gm) was prepared by adding water to *Shatahva* followed by proper grinding with pestle. At last, 400 ml *Gomutra* (cows urine) was added to the mixture and mixed well with pestle. The mixture was then filtered through a fine sieve and churned with the help of a churner, and finally made lukewarm by keeping over a hot water bath.

Preparation method for Kwatha (decoction)

The patient was advised to prepare fresh *Kwatha* every time by adding 200 ml water to 25 gm to coarse powder of medicine, reducing it to 50 ml and consuming it empty stomach twice daily.

Follow-up

The patient was advised to revisit the hospital every fortnight and laboratory investigations were done after 2 months to re-evaluate the status. The follow-up period was uneventful. She did not report any complaint, and the thyroid profile was repeated, which showed a trend of restoration to normalcy. The results are shown in Table 1.

Discussion

Hypothyroidism is emerging as a global epidemic. The modern medicine is also not satisfactory. The world is looking eagerly towards Ayurveda for solving the issues that do not have answers in the contemporary system of medicine, hypothyroidism is one such issue. In most cases of hypothyroidism, a specific cause is not

apparent. It is believed that hypothyroidism is usually secondary to an autoimmune reaction.^[10] In the present case also, patient was a known case of RA for 1 year and was subclinically diagnosed with hypothyroidism. In early hypothyroidism, with undetectable symptoms or signs, a compensated state can be detected by an elevated TSH (greater than the upper limit of 0.45–4.5 µIU/ml) and normal T₄ (called subclinical hypothyroidism).^[11] Although asymptomatic, patients with subclinical hypothyroidism need to be treated. A good reason to treat subclinical hypothyroidism is to avoid the development of goiter. Furthermore, some patients, in retrospect (after treatment) recognize improved physical and mental wellbeing.^[11] Subclinical hypothyroidism is a strong risk factor of coronary heart disease.^[11] Hypothyroidism and RA, both clinical entities, are found to have *Ama* (undigested food/toxins) related pathogenesis. Mental tension, stress, strain, emotional instabilities such as fear, anxiety and depression have tremendous impact in bringing down the digestive power. The present case also had stress factor involved and used to withhold natural urges. The role of *Vega Sandharana* (withholding natural urges) in triggering *Doshas* and its influence on *Agni* is well described by Charaka in *Siddhithana* in relation to “*Sadaturas*”. *Vega Sandharana* leads to *Apana Vayu* disfunction, ultimately inhibiting the function of *Agni* and the subsequent appearance of *Ama*. In this case, it was considered imperative to treat *Ama*, to improve *Agni*, both at the intestine level and also at the tissue level and then to offer symptom-specific or disease-specific treatment.

Constipation, a common symptom encountered in cases of hypothyroidism, is believed to impair hormonal clearance and causes elevation in estrogen, which in turn increases the thyroid-binding globulin levels and decreases the amount of free thyroid hormone available to the body.^[12]

As in the present case also, patient reported constipation as one of the main complaints, *Gandharvahastadi Eranda Taila* for *Koshtha Shuddhi* was administered for 5 days before the administration of *Basti*. It helped in clearing constipation (bowel). To ensure better absorption and bioavailability of drugs and thence action, *Deepana* and *Pachana* were performed prior to *Basti* administration. In *Sama* (vitiating *Dosha* along with *Ama*) conditions, the role of *Pachana* (digestion) is first and foremost, *Ama* is the main factor in *Srotorodha* (obstruction in channels) and in *Dosha Prakopa* (vitiating), which is dissolved by *Pachanadravya*. *Pachana* is a form of *Rukshana*,^[13] which is desired in the cases of *Amavata*. *Shivakshara Pachana Churna* owing to its *Teekshna* (penetrating) and *Ushna Guna* (hot property), easily neutralizes the *Ama*, thereby

Table 3: Contents of Kshara Basti

Contents	Dose
<i>Saindhava Lavana</i> (Rock salt)	10 g
<i>Guda</i> (Jaggery)	100 g
<i>Amlika Kalka</i> (Tamarind paste)	100 g
<i>Shatahva Kalka</i> (<i>Anethum sowa</i> Roxb. ex Flem.)	10 g
<i>Gomutra</i> (cow's urine)	400 ml

Table 4: Basti Administration details

<i>Basti</i> details/Days	Day 1	Day 2	Day 3	Day 4	Day 5
<i>Basti</i> dose	500 ml	500 ml	500 ml	500 ml	500 ml
Time of administration	11:00 am	11:05 am	11:05 am	11:15 am	10:40 am
Retention time	20 min	22 min	19 min	23 min	20 min
Bowel frequency	3	3	2	2	2

clearing *Srotovibandha* (obstruction in channels) consequently decreasing the symptoms like pain and morning stiffness.

Hypothyroidism is a *Santarpanotha* (over nourishment) condition of *Kapha Meda* origin, for which *Doshavsechana* (purification) and drugs having *Shoshana* (absorption), *Lekhana* (scapping) and *Kapha-Vatashamaka* properties would be the drug of choice. *Panchakarma* procedures like *Vamana* and *Virechana* have been extensively evaluated for their efficacy in the management of hypothyroidism. Legendries have quoted that no other procedure is superior for the normalization of *Vata* equivalent to *Basti*. *Kshara Basti* has been quoted by Acharya Chakradatta as a treatment of choice for *Amavata*, but in the present case considering the similarity in the pathogenesis of the diseases, *Kshara Basti* possessing *Lekhaniya* (scraping), *Ama* (neutralizing toxins) and *Vata Kapha Shamaka* (pacifying *Vata & Kapha*) ingredients was opted. *Kshara Basti* was preferred as the *Samshodhana* (therapeutic purification) procedure expecting it to correct the manifestations in the present case. *Kshara Basti* comprises of *Saindhava* (rocksalt), *Guda* (jaggery), *Chincha* (tamarind), *Shatahva* (*Anethum sowa*) and *Gomutra* (cow's urine). *Pakwa Chincha* (ripened tamarind) was used as *Kalka Dravyas* (paste), which is said to be *Ruksha* (dry), *Ushna*, *Agnideepaka* (appetizer) and possesses *Vata Kapha Shamaka* properties.^[14] These properties are antagonistic to that of *Ama*, thus directly targeting the origin of the disease. *Shatahva* is *Deepana*, *Pachana* and *Vatanulomaka* (facilitates downward movement of *Vata*).^[15] *Purana Guda* is said to be *Laghu* (light), *Pathya* (wholesome), *Anabhishtyandi* (which does not block channels) and promoting digestion. It is also said to be *Vata* pacifying and *Raktaprasadaka* (blood purifier).^[16] *Purana Guda* owing to its *Raktaprasadaka* properties, may have helped in detoxifying the blood of antibodies. *Saindhava*, due to its *Sukshma* and *Teekshna* properties, helps the *Basti Drava* to reach up to the molecular level. *Basti* has more quantity of *Gomutra*, which is *Ushna*, *Teekshna*, *Laghu*, *Agnideepaka*, *Amanashaka*, *Vata Kaphanashaka* and possesses *Ksharaguna* (alkaline properties). *Kshara* has the property of *Lekhana* and *Vishodhana*^[17] which are antagonistic to *Ama*, and serves its utility in the present case. As the ingredients of *Kshara Basti* targets on *Ama*, *Samata* and *Srotorodha* might have got cleared by the action of *Kshara Basti*.

As expected, *Kshara Basti* provided relief in the symptoms of RA, but the main purpose for planning *Kshara Basti* was to evaluate its outcome on thyroid profile, which gets altered in hypothyroidism.

When the patient appears clinically euthyroid, the evaluation of TSH levels will provide the most accurate assessment of adequacy/efficacy of the therapy.^[18] The goal of treatment in hypothyroidism is to maintain the TSH in the lower half of the normal range, between 0.45 and 2.0 μ IU/ml. Levothyroxine (or synthetic thyroxine), the only allopathic treatment available for the management of hypothyroidism, is a kind of supplement therapy. The full response of TSH to changes in the dosage

of thyroxine (T_4) is relatively slow, a minimum of 8 weeks is necessary between changes in dosage and assessment of TSH.^[18] However, the present clinical trial showed encouraging results as the TSH level dropped down from 31.1 μ IU/ml to 16.6 μ IU/ml, [Table 1] within 10 days of treatment.

However, the results [Table 1] depict that there was a further decrease in $S. T_3$ and T_4 levels after treatment, which is acceptable by the fact that recovery of HPT axis requires 8 weeks at which time the TSH and free T_4 levels can be measured.^[18] However, after the follow-up of 2 months, this decrease in T_3 and T_4 not only was checked, but the level of these hormones increased and the thyroid profile showed inclination toward normalcy.

Conclusion

In the present case, as the patient did not have any other chief complaints related to hypothyroidism except poor appetite and constipation, *Kshara Basti* was chosen for treatment keeping in mind the concept of *Ama* in autoimmune diseases. In view of its easy administration and being devoid of *Snehapana* (internal oleation) and *Samsarjana* (specific dietetic regimen), which many patients find unpleasant, *Kshara Basti* can be an effective treatment for hypothyroidism cases associated with *Ama*. This study was performed on a newly diagnosed case and was found to be effective. This study needs to be evaluated on chronic cases and large sample to validate the conclusion.

Declaration of patient consent

The authors certify that they have obtained the appropriate patient consent form. In the form, the patient has given her consent for her images and other clinical information to be reported in the journal. The patient understands that name and initials will not be published and due efforts will be made to conceal identity, but anonymity cannot be guaranteed.

Financial support and sponsorship

Nil.

Conflicts of interest

There are no conflicts of interest.

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