

## AYURVEDIC UNDERSTANDING AND MANAGEMENT OF PRIMARY SUBCLINICAL HYPOTHYROIDISM IN CHILDREN - A CASE REPORT

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### ABSTRACT

Juvenile hypothyroidism is one of the commonest endocrine disorder seen in childhood and adolescent age group with an estimated incidence of 1 in 1250 school-aged children. In India, the prevalence of sub-clinical hypothyroidism is 6.1%. Juvenile hypothyroidism can be of congenital or acquired and can be even primary and secondary as well. Main clinical features include deceleration of growth, progressive weight gain. A 10-year-old female patient was brought to the Out Patient Department of Kaumarabhritya, SDM College of Ayurveda and Hospital, Hassan by her parents with complaints of hair fall, swelling in neck region, increased weight gain and loss of appetite since 7 months. This condition can be understood as Primary Subclinical Hypothyroidism. After a detailed clinical examination and thorough evaluation, we have admitted the child and started with *Deepana Pachana, Snehapana and Vamana*. Following that, patient was discharged with internal medications for 15 days and then evaluated. There were significant improvements in patient's condition.

**Keywords:** Primary Subclinical Hypothyroidism, *Snehapana, Vamana*.

### INTRODUCTION

Thyroid hormone is very much essential for the growth and neurologic development in childhood period. Any dysfunction of thyroid in children has a significant impact on the development of the child<sup>1</sup>. Juvenile hypothyroidism is coming under the spectrum of thyroid hormone deficiency disorders seen in children above 2 years of age. It is one of the commonest endocrine disorder in childhood and adolescence with an incidence of 1 in 1250 school-aged children<sup>2</sup>. The prevalence of subclinical hypothyroidism in India is found to be 6.1%. Juvenile hypothyroidism can be

primary or secondary and congenital or acquired. Manifestations can be subclinical or overt. Hypothyroidism occurs as a result of any defects at the level of hypothalamic-pituitary-thyroid axis. Subclinical hypothyroidism presents with a high serum TSH concentration and a normal serum free T4 concentration<sup>3</sup>. The most important among the clinical features is a deceleration seen in growth causing short stature. Other features like progressive weight gain, constipation, cold intolerance, lethargy, dry skin, brittle hair, facial puffiness, easy fatigability, muscle aches and pain<sup>4</sup>.

The clinical relevance of a subclinical hypothyroidism is unclear. We can see a mild elevation of TSH (below 10mU/L) with a normal FT4 levels. Most of the cases, findings can reverse over a period of three to six months<sup>5</sup>.

Hypothyroidism can be understood in Ayurvedic perspective as the under activity of *Agni*. Multiple *Srothas* gets involved as a result of which functioning of *Dhathus* will also get affected. *Manda*, *Sheetha* and *Guru guna* of *Kapha* is playing a major role. Involvement of *Vata* with its *Sheetha guna* make altogether a *Kaphavataja samsarga* condition<sup>6</sup>. *Chikitsa sidhantha* includes *Dhatu agni deepana*, *Dhatugata malapachana*, *Srothoshodhana*, *kaphavata hara* and *Manoharshana*<sup>7</sup>.

#### Case History:

A 10-year-old female patient was brought to the Out Patient Department of Kaumarabhritya, SDM College of Ayurveda and Hospital, Hassan by her parents with complaints of hair fall, swelling in neck region, increased weight gain and loss of appetite since 7 months.

#### History Of Present Illness:

This child was apparently healthy 7 months back. After which, she developed with hair fall, slight swelling in neck region, lack of interest in taking food and increased weight gain. She was having body weight almost average for her age till then, later parents, friends and teachers have observed an increased weight gain in her, but comparatively her food intake was less, because of the her less interest towards food, but still gaining of weight was a cause of concern in parent's mind. Hairs started falling in an increased pace and gradually the swelling in neck also started gradually increasing.

All these has made the parents to decide to go for a consultation with a Paediatrician in a nearby clinic. There, they have suggested for investigations related to Thyroid functioning and following which, some medicines were started for her, which was taken for almost a month. But there was not any satisfactory improvement noticed. Hence, they have decided to take the child to SDM College of Ayurveda and Hos-

pital, Hassan for better Ayurvedic treatments for the same.

After a detailed interrogation with parents and the child regarding the child's life style, diet, habits and the history of the present complaints, a thorough evaluation of the clinical condition was done. Hence, decided to admit the child in the inpatient department of our hospital and planned for *Vamana*. For which, initially we have started with *Deepana Pachana*, followed by *Snehapana*, *Sarvanga Abhyanga* and *Nadi Sweda* and finally *Vamana*.

#### Examination:

**Table 1:** Assessment of general condition of the child:

Bowel	Regular
Appetite	Slightly reduced
Micturition	Regular
Sleep	Sound

**Table 2:** Anthropometrical Assessment

Anthropometry	BT	AT
Weight	34kg	32.8kg
Height	134cm	134cm
Head Circumference	52cm	52cm
Chest Circumference	58cm	58cm
Mid Upper arm Circumference	17.5cm	17.5cm

**Table 3:** Chief Complaints:

Sl. No.	Complaints
1	<i>Kesha shaatanam</i> (hair fall)
2	<i>Gala ganda</i> (Swelling in neck region)
3	<i>Sthoulya</i> (increased weight gain)
4	<i>Arochaka</i> (distaste/loss of appetite)
5	<i>Tandra</i> (lethargy)

**Table 4:** Examination of Thyroid Gland

Examination	Findings
Swelling	Present on the anterior surface of the neck
Characteristics	Smooth, mobile
Tenderness	Absent
Thyroid bruit	Absent

**Treatments Given:** A single course of treatment which comprises of *Deepana Pachana*, *Snehapana* and *Vamana* was given, followed by internal medica-

tions for a period of 15 days was advised at the time of discharge and evaluated.

**Table 5:** Treatments Given:

Day-1:	<i>Deepana pachana</i> with: <i>Chithrakadi vati</i> (1-1-1) B/F <i>Panchakola phanta</i> (40ml-40ml-40ml) B/F
Day-2	<i>Snehapana</i> with <i>Varunadi Ghrita</i> (30ml) <i>Ushna jala pana</i>
Day-3:	<i>Snehapana</i> with <i>Varunadi Ghrita</i> (60ml) <i>Ushna jala pana</i>
Day-4:	<i>Snehapana</i> with <i>Varunadi Ghrita</i> (90ml) <i>Ushna Jala pana</i>
Day-5:	<i>Snehapana</i> with <i>Varunadi Ghrita</i> (120ml) <i>Ushna jala pana</i>
Day-6:	<i>Snehapana</i> with <i>Varunadi Ghrita</i> (150ml) <i>Ushna jala pana</i>
Day-7,8,9:	<i>Saravanga Abhyanga</i> with <i>Brihat saindhavadi Thaila</i> , <i>Nadi Sweda</i>
Day-10:	<i>Saravanga Abhyanga</i> with <i>Brihat saindhavadi Thaila</i> , <i>Nadi sweda</i> <i>Vamana</i> - (Total number of Vegas: 7).

#### Advise at The Time of Discharge:

**Table 6:** Advise at the time of discharge:

Sl No.	Treatment
1	<i>Samsarjana Krama</i> for 3 days
2	<i>Varunadi Kashaya</i> (7.5ml with 20ml lukewarm water) B/F
3	Tab. <i>Shiva gutika</i> (1-0-1) A/F
4	Tab. <i>Kanchanara Guggulu</i> (1-0-1) A/F
5	<i>Harithaki Khanda</i> (1tsp bd with lukewarm water) A/F
6	Tab. <i>Hingwashtaka Vati</i> (1-0-1) B/F

#### Thyroid Function Test Findings:

**Table 7:** Before and After treatment findings of Thyroid function test

	TSH	T3	T4
<b>Before Treatment</b>	8.38 mIU/ml	99 ng/dL	6.3 microgram/dL
<b>After Treatment</b>	5.38 mIU/ml	111 ng/dL	6.2 microgram/dL

After treatment test was done after the completion of 15 days medication in home.

#### Patient and Care Taker's Feedback:

- As per the mother's statement, the child was apparently well 7 months back. There was falling of hairs and development of swelling in the neck region. Also, there was loss of appetite, associated with increased weight gain. Child was not interested in taking much food, but weight gain was more. Occasional tiredness was also there.
- Initially she was shown to a nearby Paediatrician and started with medications, which was continued for a period of 1 month, but could not get any satisfactory relief.

3. After the course of *Snehapana* for 5 days, she started feeling hungrier compared to previous. Generalized tiredness has reduced after 8 to 9 days towards the completion of body massage. After completion of *Vamana*, she was feeling lightness of body and more relaxed compared to before. Interest towards food has also increased.
4. General health status of the child has also very well improved after the completion of the total course of treatment for 10 days. Her weight has reduced to more than one kilogram and she was feeling much better.
5. Falling of hairs has also reduced. Internal medications were given at the time of discharge and which was taken for another 15 days and noted the condition of the child was still much better.

#### Clinician Assessed Outcomes:

1. This child was brought with complaints of hair fall, swelling in the neck region, loss of appetite, increased weight gain associated with occasional feeling of tiredness for 7 months.
2. After diagnosing this as a case of Hypothyroidism, medications were started by nearby doctor whom they have consulted for the first time. There were only slight changes in the condition, which was not a satisfactory improvement for the parents, which made them to bring child to this hospital and admitted her.
3. *Deepana pachana*, followed by a course of *Snehapana* in *Arohana krama* for 5 days was given depending on the *Agni*. It was observed that appetite was improved well after the completion of 5 days.
4. Generalised tiredness which was occasionally felt by her has reduced after the *Vishramakala*. After *Vamana* was performed on the 10<sup>th</sup> day of treatment, child was advised *Samsarjana krama*. After the treatment, child was feeling lightness of body and much more relaxed and better.
5. Weight was measured after the completion of treatment. Weight has reduced from 34kg to 32.8kg. After that, she was discharged with internal medications to be continued in home with proper advises regarding the dos and don'ts. Satisfactory improvement was seen in the child. Falling of hairs has reduced to an

extent, appetite improved, tiredness reduced, weight reduced.

## DISCUSSION

In the present case, the child presented with complaints like hairfall, swelling in the neck region, weight gain, lack of appetite and lethargy. Since there is no direct correlation for hypothyroidism in *Ayurveda*, it can be understood with the basic knowledge in *Dosha, Dhātu* and *Agni*. Hypometabolism is the main feature of hypothyroidism. Metabolism i.e. *Parinama* or *Paka* is the function of *Agni*. In case of hypothyroidism, there is reduced metabolism which can be understood as hypoactivity of *Agni*. So, hypothyroidism can be understood as a state of *Mandagni*. Here, there is a need to study the status of *Agni* at two levels i.e. at the level of *Koshta* and *Dhātu*. At *Koshta* level, *Agnimandya* resulted in the formation of *Aama* which leads to the *Lakshana* i.e. *Apakthi* or loss of appetite<sup>8</sup>. In *Ayurveda*, it is mentioned that whenever there is an impairment in the *Koshtagni*, the respective *Amsha* of *Dhatwagni* is also affected<sup>9</sup>. Hence in this case there is an impairment of the *Rasa, Mamsa* and *Medo Dhātu*. *Rasa dhatvagnimandya* resulted in *Lakshanas* like hair fall and lethargy<sup>10</sup>. *Mamsa dhatvagnimandya* resulted in the manifestation of neck swelling<sup>11</sup>. *Medo dhatvagnimandya* leads to weight gain<sup>12</sup>. Hence in these cases, there is *Koshtagnimandya* and *Dhatvagnimandya* at the level of *Rasa, Mamsa* and *Medas*. By analysing the *Lakshanas*, it can be understood that there is a *Kapha Vata Vriddhi* in *Koshta, Rasa, Mamsa* and *Medo dhātu* and *Pitta Kshaya* in the *Koshta*.

After analysing the status of *Agni* at *Koshta* and different *Dhatus* and the *Dosha* predominance, *Langhana* in the form of *Vamana* was planned. Since there is *Agnimandya* and *Ama* at the level of *Koshta* and *Dhātu*, the treatment was started with *Deepana* and *Pachana*. *Chitrakadi vati* and *Panchakola phanta* was selected for the same. *Chitrakadi vati* is mentioned exclusively for *Ama pachanam* and *Agni deepanam* in the *Grahani Chikitsa* in *Charaka Samhita*. As it contains *Pancha lavanas* and *Kshara dvaya* i.e. *Svarjika* and *Yava kshara*, it has helped in *Kapha vilayanam* also. *Panchakola phanta* contains *Ushna* and *Teekshna Gunayukta dravyas* which helped in reducing the *Aama* at *Koshta*. *Shodhananga snehapana* was started with *Varunadi ghrita* as it is *Ruksha, Kapha medohara* and *Kleda hara*. *Abhyanga* was done with *Brihat saindhavadi taila* as it is *Kapha hara* and *Ama pa-*

chana in nature. *Vamana* was selected as the mode of *Shodhana* because the main *Dosha* involved was *Kapha* and the various *Kapha sthanas* were also vitiated in this case such as *Rasa*, *Mamsa* and *Medas*. Moreover, the classical feature of hypothyroidism is hypoactivity of the thyroid gland. Hypoactivity also signifies an involvement of *Manda Guru Guna* of *Vaikruta Kapha* in the pathogenesis and due to the involvement of different *Dhatus*, *Shodhana rupi langhana* in the form of *Vamana* was done. The discharge medicines given were *Varunadi kashaya*, *Kanchanara guggulu*, *Shiva gutika*, *Harithaki khanda* and *Hingvashataka vati*. *Varunadi kashaya* is *Kapha medohara* and *Ruksha*<sup>13</sup>. *Kanchanara guggulu* is specifically mentioned for *Gala ganda*<sup>14</sup>. *Shiva gutika* does *Lekhana* and *Rukshana* as it contains *Shilajatu* as the main ingredient<sup>15</sup>. It also has *Rasayana* property. *Harithaki khanda* is having *Anulomana swabhava* and *Hingvashataka vati* helps in maintaining the *Agni* at the level of *Koshta* and *Dhatu*.

## CONCLUSION

Hypothyroidism is characterized by hypometabolism due to the decreased level of thyroid hormones. Metabolism can be understood as *Paaka* or *Parinama*, which is the major function of *Agni*. Hence hypothyroidism can be understood as hypoactivity of *Agni* at the level of *Koshta* and *Dhatu*. Hypoactivity at the level of *Koshta* results in *Aama lakshanas* and at the level of *Dhatu* results in respective *Srotodushti lakshanas*. Being a *Kapha dosha* predominant stage with *Aama* at the level of *Koshta* and *dhatu*, *Langhana* in the form of *Shodhana* was adopted in this case. There were significant improvements in various objective and subjective parameters after the *Vamana*. Hypothyroidism being a *Kapha Vata Pradhana Avastha* with *Mandagni* at *Koshta* and *Dhatu* levels can be approached through *Vamana* as a mode of *Shodhana*.

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