

## Case Report

# Conundrums of hypothyroidism

Vidya D. Kharkar, Snahasish Naskar\*

Department of Dermatology, Seth G.S. Medical College and K.E.M. Hospital, Mumbai, Maharashtra, India

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**\*Correspondence:**

Dr. Snahasish Naskar,

E-mail: [naskarsnahasish@yahoo.com](mailto:naskarsnahasish@yahoo.com)

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### ABSTRACT

A 46 year old female came with complaints of dryness of skin and severe hair loss since 2-3 years. There was history of intermittent low grade fever, swelling all over body since 1 year; patient also complained of tingling numbness over bilateral legs and forearms along with difficulty in swallowing food. On further probing, history of difficulty in lifting arms above the head, constipation, generalised fatigue and drowsiness could be elicited. Patient also noticed raised skin coloured asymptomatic lesions over buttocks. On examination loss of eyebrows and alopecia in frontal and parietal scalp was seen. There was prominent follicular ostia and atrophy on scalp and body. Depressed keratotic papules with a generalized doughy feel of skin was appreciated all over body. A differential diagnosis of connective tissue disorder, widespread alopecia areata, folliculotropic mycosis fungoides, hypothyroidism and atopic dermatitis was made. Laboratory investigations revealed a low T3, T4 with a significantly raised TSH suggestive of a primary hypothyroidism. On histopathology mucin deposition in papillary and mid dermis was seen along with non-scarring pattern of alopecia. A diagnosis of hypothyroidism was made and patient was started on Tab. levothyroxin 75 micrograms once daily for 4 months along with hematinics, multivitamins and calcium supplements. Regular and frequent application of emollients was advised to the patient.

**Keywords:** Hypothyroidism, Xerosis, Alopecia

### INTRODUCTION

Hypothyroidism manifests with a varied cutaneous manifestations that provide important and diagnostic clues to the dermatologists.<sup>1</sup> Constitutional symptoms include fatigue/drowsiness, proximal myopathy, cold intolerance, constipation and decreased appetite.<sup>2</sup> Xerosis remains most common cutaneous finding followed by pallor, nail changes, alopecia and madarosis.<sup>1</sup> Puffy edema, pruritus, decreased sweating and ivory yellow skin has been reported in other studies.<sup>3</sup> Determining the underlying cause of the hypothyroidism is also of utmost importance as the line of management and prognosis varies significantly with it.

### CASE REPORT

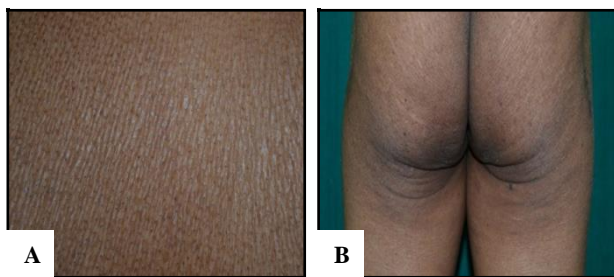
A 46 year old female came with complaints of dryness of skin since 2-3 years and severe hair loss since 2-3 years in a band like pattern; history of intermittent low grade fever was present since 1 year. Patient also complained of swelling all over body since 1 year. There were raised skin coloured lesions over buttocks. Tingling numbness over bilateral leg and forearm was present. Patient had difficulty in swallowing food, constipation and lifting arms above the head since 4-5 months along with fatigue and drowsiness.

On examination there was loss of eyebrows and alopecia in frontal and parietal scalp in a band like pattern. Prominent follicular ostia and atrophy on scalp and body

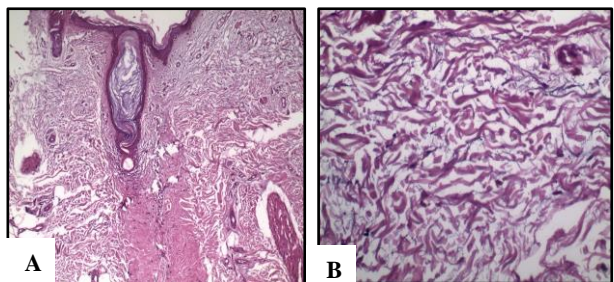
was also appreciable. Depressed keratotic papules and xerosis was present all over body. On palpation doughy feel of skin could be appreciated.



**Figure 1 (A and B): Alopecia in frontal and parietal scalp in a band like pattern.**



**Figure 2 (A and B): Xerosis with keratotic papules present all over body.**



**Figure 3 (A and B): Mucin deposition present in the dermis (10 X and 40X).**



**Figure 4 (A and B): Post treatment.**

Based on history and clinical examination a differential diagnosis of connective tissue disorder; widespread alopecia areata, folliculotropic mycosis fungoides, hypothyroidism and atopic dermatitis was considered.

Blood investigations revealed anemia (Hb- 7.6 mg/dl); thyroid parameters revealed primary hypothyroidism: TSH >100 [0.27-4.2] microIU/ml; T3 19.53 [80-200] ng/dl; T4 0.46 [5.1-14.1] microgram/dl; ANTI TPO 8.64 [NR UPTO 5.6] IU/ml.

**Histopathology:** Biopsy from scalp revealed mucin in papillary and mid dermis showing non scarring alopecia; biopsy from xerotic skin over back revealed abundant mucin deposition in papillary and mid dermis.

A final diagnosis of hypothyroidism was reached based on clinical, laboratory and histopathological findings.

Patient was started on Tab levothyroxin 75 micrograms once daily for 4 months. Hematinics, Vitamins and calcium supplements was also prescribed keeping in view the other associated findings along with liberal and frequent use of topical emollients to combat xerosis.

On follow up constitutional symptoms of fatigue and proximal muscle weakness improved significantly with treatment by one month. Alopecia reversed with hair growth in frontal and parietal scalp along with eyebrows; skin texture improved dramatically with disappearance of the keratotic papules by six months of treatment.

## DISCUSSION

Hypothyroidism is usually associated with thick dry scaly skin, telogen effluvium and hypohidrosis, the duration of which is proportional to the degree and duration of the disease. These effects are due to decreased metabolism which leads to decreased peripheral circulation and attenuates sebaceous secretion. A decreased thyroid level interrupts initiation and duration of hair growth and is generally reversed by hormone replacement.<sup>4</sup> Alopecia in thyroid diseases is not caused by changes within the hair cycle but probably by impaired hair quality.<sup>5</sup>

Patient improved significantly leading to reversal of symptoms which excluded the need for a thyroid biopsy. Neurological assessment pointed towards a thyroid related myopathy. No history of antecedent goitrogenic drug use could be elicited.<sup>6</sup> Patient did not require any iodine replacement neither was there any history or clinical evidence of an enlarged thyroid gland which made iodine deficiency an unlikely cause and TSH level was elevated which ruled out central hypothyroidism.<sup>6</sup> Anti-TPO antibody was elevated which does point towards an immunological cause but clinical response to treatment suggests otherwise. Further absence of history of frequent exacerbation of symptoms or spells of hyperthyroid crisis seen in Hashimotos thyroiditis drives it further down the differential. A diagnostic FNAC needs to be considered for a definitive diagnosis.<sup>7</sup> Primary hypothyroidism remains a key suspect as the cause.

The case study underlines the importance of cognizance of various skin manifestation in thyroid disease and a

holistic treatment approach to be undertaken to relieve the cutaneous and systemic symptoms.<sup>5</sup>

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## REFERENCES

1. Puri N. A Study on Cutaneous Manifestations of Thyroid Disease. Indian J Dermatol 2012;57(3):247–8.
2. Chaker L, Bianco AC, Jonklaas J, Peeters RP. Hypothyroidism. Lancet. 2017;390(10101):1550–62.
3. Keen MA, Hassan I, Bhat MH. A Clinical Study of the Cutaneous Manifestations of Hypothyroidism in Kashmir Valley. Indian J Dermatol. 2013;58(4):326.
4. Nixon DW, Samols E. Acral changes associated with thyroid diseases. JAMA. 1970;212:1175–81.
5. Sterry W, Konrads A, Nase J. Alopecia in thyroid diseases: characteristic trichograms. Hautarzt. 1980;31(6):308-14.
6. Kostoglou-Athanassiou I, Ntalles K. Hypothyroidism - new aspects of an old disease. Hippokratia. 2010;14(2):82-7.
7. Zaletel K, Gaberšček S. Hashimoto's Thyroiditis: From Genes to the Disease. Current Genomics. 2011;12(8):576-88.

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