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Dermatology

To Study Dermatological Manifestations in Patients with Thyroid Disorders

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Abstract: Endocrine diseases can affect the skin and its adnexa. Among these are the thyroid disorders which are common worldwide. In India too, thyroid disorders are quite common. According to a projection from various studies it has been estimated that about 42 million people in India, suffer from thyroid diseases. The present study was undertaken to study various Dermatological manifestations in Thyroid disorders in patients attending outpatients Of Skin and V.D. and Medicine Departments and also Inpatients of both Departments. Also various dermatological conditions were observed which can be associated with Thyroid disorders. Scaly Skin in 30%; Asteotic Eczema in 24%; Myxedema and Puffy Eyelids in 22% each; Cold intolerance (18%); Pallor and Carotenemia in 14%
Keywords: Dermatological, Manifestation & Thyroid.

INTRODUCTION

Endocrine diseases can affect the skin and its adnexa. Among these are the thyroid disorders which are common worldwide. In India too, thyroid disorders are quite common. According to a projection from various studies it has been estimated that about 42 million people in India, suffer from thyroid diseases [1].

Thyroid gets its name from the Greek word "shield", due to the shape of the related thyroid cartilage. It is one of the largest endocrine gland, consisting of two lobes joined by an isthmus. It produces triiodothyronine, thyroxine and calcitonin and regulates the rate of metabolism , growth and function of many other systems in the body.

MATERIALS & METHODS

The study would be conducted in diagnosed patients of Thyroid disorders attending the outpatient Department and Hospitalised patients in Rajindra Hospital Patiala over a period of one year. The diagnosis of thyroid disease would be made by the physician depending upon the clinical, biochemical, radionuclear studies and histopathological findings as per the requirement.

METHODS

Inclusion Criteria

- Diagnosed thyroid disease patients who are not on treatment.
- Thyroid disease patients on treatment but with deranged thyroid function tests at the time of examination.

Exclusion criteria

- Pregnancy.
- Pediatric age group less than 16 years.

Techniques used for the quantitative measurement of thyroid function tests

TEST	TECHNIQUE
Free T3	FT3 ELISA Kit
Free T4	FT4 ELISA Kit
TSH	Streptavidin Biotin Technology

Thyroid scan

Tc pertechnetate is used for thyroid imaging and studying the radioactive tracer fractional uptake. Informed consent for inclusion into study, photography and relevant investigations will be taken as per the consent form.

OBSERVATION & RESULTS

Pallor was seen in 14% patients 7 out of 50 patients.

Carotenemia i.e. prominent yellowish hue on palms, soles and nasolabial folds is seen in 14% of study patient's i.e 7 out of 50 patients.

Table-01: **Colour Pale**

Colour Pale	Frequency	Percentage	X^2	p value
Absent	43	86%	25.92	0.000
Present	7	14%		
Total	50	100%		

Mean range: 0.14±0.35

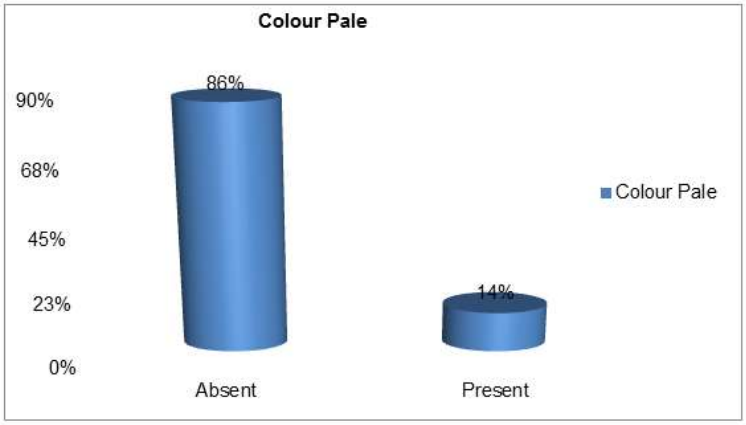

Fig-01: Pallor

Table-02: **Carotenemia**

Carotenemia	Frequency	Percentage	X^2	p value
Absent	43	86%	25.92	0.000
Present	7	14%		
Total	50	100%		

Mean range: 0.14±0.35

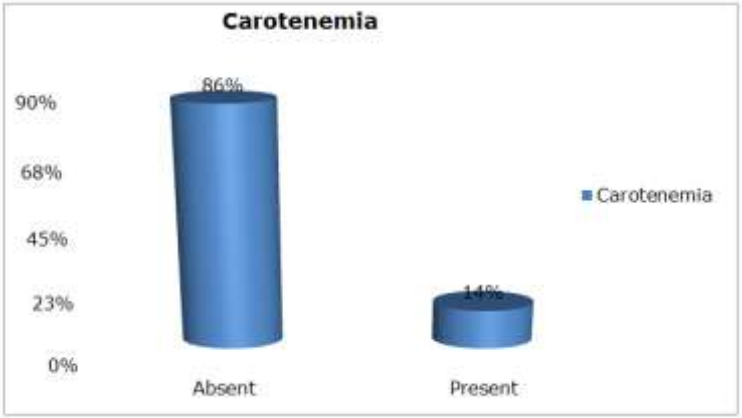

Fig-02: Carotenemia

Scaly Skin seen in 30% of Patients i.e 15 out of 50 patients

Table-03: Scaly Skin

Scaly Skin	Frequency	Percentage	X^2	p value
Absent	35	70%	8.00	0.050
Present	15	30%		
Total	50	100%		

Mean range: 0.30±0.46

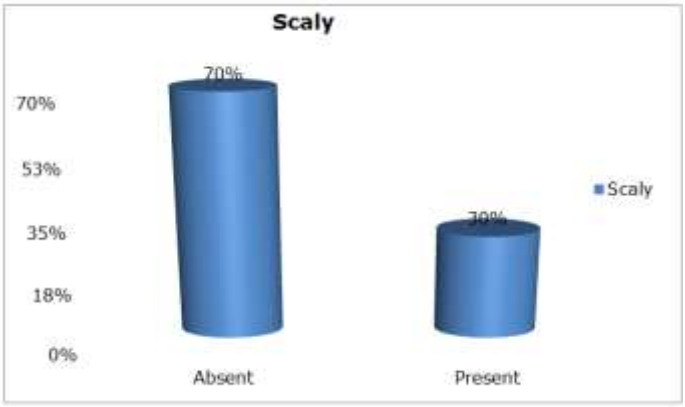

Fig 03: Scaly Skin

DISCUSSION

The long-recognized "thyroid–skin connection" encompasses many layers of complexity; the more one explores this connection, the more biologically fascinating and clinically important questions arise [2, 3].

Both abnormally low and excessively high serum levels of thyroid hormones (THs) can alter the appearance and function of human skin and its appendages, leading to various clinical manifestations. Much less obvious, however, are the underlying mechanisms that cause these changes [2, 4].

For example, human skin and its appendages are known to express TH receptors (TRβ1), and THs are known to alter the expression of selected keratins [5, 6].

van Beek *et al.* recently demonstrated that THs can prolong the duration of hair growth (anagen phase) and that they can stimulate hair matrix keratinocyte proliferation, hair pigmentation, and even the gene and protein expression for selected keratins in serum-free organ culture (i.e., under "hypothyroid" growth conditions). In addition, THs stimulate hair growth and promote wound healing in mice [7, 8].

Pallor was seen in 14% patients with a "p" value less than 0.001 which is statistically significant. In a study done by Debra *et al.* in 1994 incidence of Pallor was found to be 2.4% [9]. Pallor is a non-specific Sign seen in various other conditions also like Iron, Folate or B12 deficiency Anaemia, and difference in observations could be attributed to various underlying conditions not discussed in our study.

Carotenemia i.e. prominent yellowish hue on palms, soles and nasolabial folds is seen in 14% of study patients. In a study by Zaheera *et al.* Carotenemia was found in 5.4% of patients [11]. Scaly Skin was seen in 30% of Patients. In a study done by Alka *et al.* in 2006 56% patients show scaly skin [12]. It is observed that lipid metabolism, and notably sterol synthesis, is altered in epidermal keratinocytes deprived of thyroid hormone and suggest that, as in other scaling disorders, this abnormal sterologenesis may lead to the clinically observed ichthyosis that can accompany hypothyroidism [10].

CONCLUSION

The present study was undertaken to study various Dermatological manifestations in Thyroid disorders in patients attending outpatients Of Skin and V.D. and Medicine Departments and also Inpatients of both Departments. Also various dermatological conditions were observed which can be associated with Thyroid disorders.

Scaly Skin in 30%; Asteotic Eczema in 24%; Myxedema and Puffy Eyelids in 22% each; Cold intolerance (18%); Pallor and Carotenemia in 14%.

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