COMMONEST CUTANEOUS MANIFESTATIONS IN THYROID DISORDERS

Kalsoom Aslam[1], Abdur-Rahim Khan[1], Naseem Ullah[1], Shahida Naz[1], Sarah Riaz Khan[1], Rabeeka[1]

[1]Department of Dermatology Unit KGMC/Hayatabad Medical Peshawar, Pakistan

ABSTRACT

Objective: *To determine the frequency of cutaneous manifestations in patients of thyroid disorders.*

Materials and Methods: *: A total of 140 diagnosed thyroid patients were included. Demographic characteristics like age, sex, address and phone numbers of all patients were recorded. Complete history was taken and general physicalexamination was performed.All information was recorded on a predesigned proforma.*

Results: *Out of 140 patient's majority were 31 to 60 yrs old. Seventy percent of the patients were male. Two third of the patients were having thyroid disease for more than two years. Majority of the patients (39%) had hyperhydrosis, followed by pruritus (29%), Xerosis (20%) and brittle hair (13%).*

Conclusion: *Most frequent presentations were hyperhydrosis, pruritus and xerosis while brittle hair was present only in few patients.*

Keywords: *Cutaneous manifestations, frequency, thyroid disorders*

INTRODUCTION

Skin being the largest organ of the human body is effected by endocrine disorders.[1,2] Among the various endocrine disorders presenting with cutaneous manifestations, thyroid disease is presumably the one destined to be seen by the practicing physician.[1,3] The skin promptly reflects functional capacity of the thyroid gland.[4,5,6,7] Thyroid diseases, both hypothyroidism and hyperthyroidism, are related with changes in the skin, hair and nails which may be the first and only clue to the hidden quiet thyroid disease.[3,4,5,6,8,9]

Different cutaneous manifestations of thyroid diseases may include warm and soft skin, hyperhydrosis, fine and soft hair and diffuse hair loss.[8,10] Patients with thyroid maladies can present with other cutaneous manifestations as well.[10] The cutaneous manifestations of the thyroid disorders may precede clinical and laboratory evidences of thyroid malfunction by months or years.[3]Different countries of the world have reported different statistics regarding cutaneous manifestations of thyroid disease.[8]

The rationale of this study was to determine the current mode of frequency of cutaneous manifestations in thyroid disordersin local setting.This study gave us local magnitude of the problem and the result will be shared with other local endocrinology and dermatology departments to make them aware of the frequency of the cutaneous manifestations of thyroid disorders. This will help in making guidelines for further research and treatment of these manifestations.

MATERIALS AND METHODS

This descriptive cross sectional study was conducted from Febuary 2017 till August 2017 in the departments of Dermatology, Medicine and Endocrinology of Hayatabad Medical Complex Peshawar. Non probability, consecutive sampling technique was used for this study. Total sample size was 140 with 95 % confidence interval and 5% margin of error and keeping 10% prevalence of pruritus in thyroid patients.

Correspondence:
Dr. Kalsoom Aslam
Senior Registrar Dermatology, Kuwait Teaching Hospital, Peshawar Medical College. Peshawar, Pakistan.
Email: kirankalsoom1986@gmail.com
Contact: +923329260148

Inclusion And Exclusioncriteria

Patients of both genders aged 18 to 60 years who were already diagnosed with thyroid disorders were included in the study. Patients having other endocrine disorders like diabetes mellitus and chronic kidney disease andother co-morbidities like connective tissue disorders and haematological malignancies diagnosed by history, examination and investigations and patients already on treatment for thyroid disorders were excluded from the studybecause both can cause cutaneous manifestations. The above mentioned conditions act as confounders and if not excluded could induce bias in the study results.

RESULTS

In this study number of female patients was more as compared to male patients as shown in figure 1.More of the enrolled patients were in the third to sixth decades of their lives.(Table 1).Thirty eight(27%) patients had duration of disease <2 years, 102(73%) patients had duration of disease >2 years while 112(80%) patients had duration of symptoms <1 year, 28(20%) patients had duration of symptoms >1 year. Out of 140 patients 08(06%) had autoimmune thyroid disease, 98(70%) had hyperthyroidism while 42(03%) had hypothyroidism. Only 40% of patients had cutaneous manifestations including hyperhydrosis, pruritus, xerosis and brittle hair. In thesethe commonest observed cutaneous manifestation was hyperhydrosis 22(39%), while brittle hair was least commonly observed (7%). Various other cutaneous manifestations are shown in table no 2.

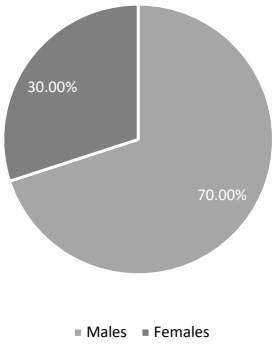

Fig 1: male versus female frequency

Table 1: AGE DISTRIBUTION (n=140)

Age	Frequency	Percentage
18-30 yrs	45	32%
31-60 yrs	95	68%
Total	140	100%

Table 2: CUTANEAUS MANIFESTATIONS (n=56)

Cutaneaus Manifestations	Frequency	Percentage
Hyperhydrosis (hyper)	22	39%
Pruritus (Both)	16	29%
Xerosis (Hypo)	11	20%
Brittle hair (Hypo)	7	13%
Total	56	100%

DISCUSSION

The present study comprised of 140 patients of thyroid disorders from outdoor section of our hospital. Out of these, cutaneous manifestations were present in 56 (40)% patients. While study conducted by Noor ud din M et al showed cutaneous features in 44 out of 236 patients (18.75%)[9]. Reason for this difference could be that this study was of a different design. In the reffered study all patients whether on treatment or without treatment were included.Therefore the chances of having cutaneous manifestations were less in patients who were on treatment.

In our study most of the findings were in females i.e 98 patients out of 140 (70%) which is similar to study by Dogra et al showing male to female ratio of skin manifestations (1:7)[65]. This female preponderance may be due to increased association of autoimmune disorders including autoimmune thyroiditis in females[66]. The effects of female gonadal hormones and X chromosome inactivation on thyroid gland and immune system greatly contribute to the female predilection of autoimmune disorders. The direct

actions of estrogen on the thyroid tissue contribute to the development of thyroid goiter, nodule and cancer in women.[67]

Commonest age group affected in our study was 31-60 yrs. This is similar to the study done by Joan Felicita Samson et al[68]which showed a peak prevalence of thyroid disorders among 31- 40 yrs and Aditi Jamwal et al[66]which had a maximum number of cases between 31- 50 years of age. This is due to the natural incidence of this disease in middle age.

Most frequent manifestation in our study was hyperhidrosis i.e, in 22 patients (39)%. While study conducted by Singh AP reported warm, moist skin, with hyperhydrosis in 8 (15.68%) patients[11]. The reason for this contrast in observation could be due to small study population of the reffered study which included only 51 patients while sample size in our study was 140.

Second most common finding in our study was pruritus seen in 29% (16) patients. This is similar to the results of studies by Mohammad Abid Keen et al(26.5%)[70] and Aditi Jamwal et al(28%)[66]. This similarity could be because sterol synthesis is reduced by keratinocytes in hypothyroidism leading to flaking of skin and xerosis and thus pruritus that is same in all individuals.

We observedxerosis in 11 (20%) patients which is similar to study by Aditi Jamwal et al (24%). Similarity of these results could be due to a similar study population including both hypo and hyperthyroid patients. While xerosis with a percentage of 71.85 % was the commonest symptom in study done by A. Dogra et al[65]. Reason of this increased number is that later study was conducted only on hypothyroid patients.

Xerosis was noted in 45.8% patients in a study conducted by Deciana Elela. Reason of increased frequency could be the duration of study which was 2 years in contrast to our study which was of 6 months duration.

Least common manifestation was brittle hair present in only 7 patients (13%). While it was in 2% patients in study by Noor ud din M et al which included 238 patients. Although the sample size was bigger in later study but reason for decreased frequency could be that it also included patients already on treatment while patients having treatment or already treated were excluded in our study.

CONCLUSIONS

There is a strong link of thyroid disorders with cutaneous manifestations. We found a high incidenceof pruritus in hypothyroidism and hyperthyroidism and a high incidence of hyperhydrosis in hyperthyroid patients. While a high incidence of pruritus andxerosis and low incidence of brittle hair in hypothyroidism. So a high degree of suspicion must be kept in mind in patients presenting with such signs and symptoms to rule out any underlying thyroid disorder.

REFERENCES

1. DemİrkesenC. Skin manifestations of Endocrine Diseases. Turkish Journal of Pathology. 2015; 31:145-154.
2. Deshpande S, Dawane S, Siddhanta S and Dravyaguna. Study of Cutaneous Manifestations of Endocrine Disorder: An Ayurvedic Perspective. IAMJ. 2016; 4(3): 574-578.
3. Singh AP, JatavO.P. and Sikarwar S. Cutaneous manifestations in thyroid disorders. Internat.J.Med.Sci. 2009; 2 (1): 41-45.
4. Kasumagic-Halilovic E, Begovic B. Thyroid disease and the skin. Annals Thyroid Res. 2014; 1(2): 27-31.
5. Keen MA, Bhat MH, Hassan I, Shah PA and Bhat YJ. A clinical study of the cutaneous manifestations of hyperthyroidism in Kashmir valley – India.Ourdermatol online. 2016;7(1):5-9.
6. Dogra A, Dua A, Singh P. Thyroid and skin. Indian J Dermatol. 2006; 51: 96-9.
7. Jamwal A, Gupta V, Sharma A, Rather PA. Cutaneous manifestations of hypothyroidism: Prospective Hospital Based Clinical Study. J Adv Med Dent Scie. 2013; 1(2):5-12.
8. Artantaş Ş, Gül U, Güler S, Kilic A. Skinfindingsinthyroiddiseases. Eur j Intern Med. 2008; 20(2):158-61.
9. Paswett F, Devi Th. B, Santa N and SyiemliehAJ.Cutaneous Manifestations of Hypothyroidism- A Clinical Study.IJAR. 2016; 4(2): 109-113.
10. Nagaraj, ALBalaji, SSingla, M Prakash. Dermatological manifestations in autoimmune thyroid disorders. BMC Proceedings 2012; 6(4):O39.
11. Ramanathan M, Noordin M, Abidin Z andMuthukumarappan M. The prevalence of skin manifestations in thyrotoxicosis. A Retrospective Study. Med.J.Malaysia.1989;44:4
12. Ahmed I, Nasreen S, Jehangir U and Wahid Z.Clinical spectrum of alopecia areata and its association with thyroid dysfunction. J Pak Assoc Dermatol. 2012; 22 (3): 207-212.