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Original Research Article

Dermatosis of scalp and hair disorder: an observational study in a hilly state of North-East India

Subrata Kumar Das[1]*, Saptadipa Das[2]

[1]Department of Dermatology, [2]Department of Medicine, Sikkim Manipal Institute of Medical Sciences, Gangtok, Sikkim, India

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***Correspondence:**
Dr. Subrata Kumar Das,
E-mail: subha607@gmail.com

ABSTRACT

Background: The skin of the scalp has several unique features that aid in its critical role of protecting the head. These unique features of the scalp make it susceptible to superficial mycotic conditions, parasitic infestation and inflammatory conditions. These disease processes of the scalp can have significant overlap in clinical symptomatology. The aim was to observe the clinical profile of scalp dermatosis and hair disorder at a tertiary care hospital.
Methods: This was a cross sectional observational study which was carried over a period of 1 year 5 months from August 2019 to November 2020. A total of 76 patients were included in the study, who visited dermatology OPD of SMIMS, Sikkim.
Results: This study included 76 patients of clinically and histopathologically diagnosed cases of scalp dermatosis and hair disorder, 47 males and 29 females. A total of 18 different dermatoses were observed in this study. The most common disorder was seborrheic dermatitis, which accounted for 18.4 %, followed by androgenetic alopecia in 17% and alopecia areata in 15% cases in the present study.
Conclusions: The article provides an overview of the most common scalp disorders, which we have observed in our study.

Keywords: Dermatosis, Scalp, Hair, Observational study, Hospital

INTRODUCTION

The skin of the scalp has several unique features that aid in its critical role of protecting the head. First, the follicular density is much higher, creating a dark, warm and moist environment. This provides thermal insulation, but also creates an environment conducive to parasitic infestation. Second, in adults there is a high rate of sebum production, which along with desquamated skin cells can provide a food source for microorganisms. Finally, the scalp skin is subjected to brushing and contact with other styling implements that can cause friction injury and may introduce microorganisms.

These unique features of the scalp make it susceptible to superficial mycotic conditions (dandruff, seborrheic dermatitis and tinea capitis), parasitic infestation (pediculosis capitis) and inflammatory conditions (psoriasis).[1,2] These disease processes of the scalp can have significant overlap in clinical symptomatology. Hyperkeratosis (scaling), pruritus, alopecia and inflammatory signs (erythema, purulence) are common symptoms of scalp disorders. Scaling and pruritus are extremely common complaints.[3-6]

By judicious consideration of the clinical appearance, by direct examination with magnification and by culture

results, skin biopsy and other laboratory results, the diagnosis of most pathological conditions of the scalp can be made. The scalp participates in many systemic disorders and frequently is the chief site of involvement. Similarly, many generalized disorders limited to the skin exhibit their most typical manifestations in the scalp. Whenever a diagnosis eludes the investigator, more than likely he or she has not considered all of the etiological possibilities or has not pursued an adequate laboratory investigation. A few scalp diseases initially present nonspecific clinical pictures. By utilizing follow up examinations at appropriate intervals, the diagnosis can eventually be made. Once a diagnosis is made, appropriate treatment will generally produce satisfactory improvement or cure. Nevertheless, a few generally rare conditions will defy the physician's most enlightened and aggressive therapy.

Aim and objectives

The aim was to observe the clinical profile of scalp dermatosis and hair disorder at a tertiary care hospital.

METHODS

The study was conducted in outpatient dermatology clinics at SMIMS, Gangtok, Sikkim in the period between August 2019 and December 2020. It was approved by the institutional ethical committee.

Inclusion criteria

Male and female patients with diagnosed scalp dermatosis and hair disorder were included in the study.

Exclusion criteria

Patients who were not willing to give consent were excluded from the study.

Clinical assessment

After taking details history the patients were assessed and diagnosis were made clinically and if required samples were sent for laboratory investigation and for histopathological examination.

Statistical analysis

Statistical analyses were performed using SPSS version 23. Continuous data was summarized in the form of mean and standard deviation. Count data was expressed in the form of proportion.

RESULTS

This study included 76 patients of clinically or histopathologically diagnosed cases of scalp dermatosis and hair disorder (47 males and 29 females) (Table 1). In our study 51 patients (67.1%) were from the urban area while 25 patients (32.9%) belonged to rural background (Table 2). In the present study maximum number of patients belonged to the age group 30-40 years with 30 patients, followed by 20-30 years group with 17 patients (Table 3). Most of the study subjects, 27 were employees, and number of college and school were 23 and 14 respectively (Table 4). 31 patients had duration of lesions between 1-2 month and 19 patients had duration between 3-4 months (Table 5). A total of 18 different dermatoses and hair disorder were observed in this study. The most common disorder was seborrheic dermatitis, which accounted for 18.4%, followed by androgenetic alopecia in 17% and alopecia areata in 15% cases in the present study (Table 6).

Table 1: Distribution of subjects according to gender.

Distribution	Male	Female	Total
No.	47	29	76
%	61.9	38.1	100

Table 2: Distribution of subjects according to their residence.

Gender	Rural	Urban	Total
Male	17	30	47
Female	8	21	29
Grand total	25	51	76

Table 3: Distribution of subjects according to their age group.

Age distribution (in years)	Male	Female	Total
Below 10	4	3	7
10-20	7	6	13
20-30	11	6	17
30-40	19	11	30
Above 40	6	3	9
Grand total	47	29	76

Table 4: Occupational status of study subjects.

Occupation	Male	Female	Total
School student	8	6	14
College student	14	9	23
Employee	17	10	27
Others	8	4	12
Grand total	47	29	76

Table 5: Distribution of subjects according to duration of disease.

Duration (in months)	Male	Female	Total
< 1	8	4	12
1-2	21	10	31
3-4	10	9	19
>4	8	6	14
Grand total	47	29	76

Table 6: Scalp dermatosis and hair disorder observed in the study subjects.

Serial no.	Dermatosis of scalp hair	Total
1.	Seborrheic capitis	14
2.	Tinea capitis	3
3.	Pediculosis capitis	2
4.	Psoriasis	4
5.	Seborrheic keratosis	2
6.	Alopecia areata	12
7.	Androgenetic alopecia	13
8.	Telogen effluvium	7
9.	Sebaceous cyst	2
10.	DLE	1
11.	LPP	2
12.	Acne keloidalis	2
13.	Allergic contact dermatitis	5
14.	Premature canitis	3
16.	Scalp folliculitis	2
17.	Pemphigus	2
18.	Cicatricial alopecia	2
19.	Grand total	76

DISCUSSION

The scalp is unique among skin areas in humans, with high follicular density and a high rate of sebum production. The relatively dark and warm environment on the scalp surface provides a welcoming environment for the superficial mycotic infections associated with many scalp conditions and for parasitic infestation.[7-10] Infections and infestations can occur when items such as fingers, combs, hats or styling implements coming into contact with the hair and scalp and introduce microorganisms. Inflammatory conditions may also produce changes in the scalp. Many common scalp conditions have similar symptoms and clinical features, complicating diagnosis, but a correct diagnosis is critical to determining proper treatment. This paper described the common skin conditions of scalp and hair including dandruff, seborrheic dermatitis, tinea capitis, pediculosis capitis and psoriasis, different types of alopecia.

Although hair and scalp disorders generally were not associated with significant physical morbidity, the psychological impact of visible scalp problems may be very high. In human societies, hair now plays an important role in appearance and sexual signaling to which the original functional roles of protection and heat conservation were secondary and changed in the appearance of skin and hair affect self-esteem and confidence in social settings. It should also be recognized that scalp changes in some cases may be a sign of a more substantial medical problem, so correct diagnosis was important. The scalp was unique among skin areas in humans, with high follicular density and a high rate of sebum production. Fingers, combs, hats, styling implements come into contact with the hair and scalp and can introduce microorganisms, increasing the likelihood of infections and infestations.[11-15] The dark and warm environment of the scalp surface was favorable for the superficial mycotic infections that play a role in dandruff, seborrheic dermatitis and tinea capitis and for parasitic infestations such as pediculosis capitis.[12-25] Scalp changes may also be seen in inflammatory conditions such as psoriasis. The similarities in clinical signs and symptoms of many scalp conditions can complicate accurate diagnosis.

In a survey of 735 adults in the United States, 39% reported having experienced some flaking and almost 50% complained of scalp itch (data on file at Procter and Gamble). Therefore, a clear understanding of each disease process and its unique clinical manifestations was key to developing an accurate differential diagnosis.

A total of 18 different dermatoses were observed in this study. The most common disorder was seborrheic dermatitis which accounted for 18.4% of total study population. Androgenetic alopecia was the second most commonest disorder in our study. We found 14 patients of androgenetic alopecia. Alopecia areata was the third most commonest disorder in our study. We observed 12 patients who had alopecia areata. In our study we had 4 patient of psoriasis, out of which 2 patients had scalp psoriasis as a part of generalized plaque psoriasis and 2 patients had only scalp psoriasis, the diagnosis was confirmed by skin punch biopsy. Similarly we had 2 cases of pemphigus who had crusted plaque over scalp. The most common age group in our study was between 30-40 years which was common in other study also.[15] Most common presenting symptoms were itching and loss of hair. Almost 70% of study subjects were presented with itching, as itching was most common symptoms. The duration of symptoms of most dermatosis were between 1-2 months. Most of the dermatosis were benign in our study, however we had 1 case of suspected SCC in our study, but in skin punch biopsy it came DLE.

CONCLUSION

The skin of the scalp differs from the skin on the other areas of the body because of a higher density of hair follicles and higher sebum production. These, together with the presence of hair, provide a suitable environment for superficial infections, infestations and inflammatory diseases. The good condition of the scalp has a significant impact on the patient's mental well-being and social interaction. The visibility of this part of the skin and the presence of hair itself restrict the range of possible therapeutic agents that can be used due to the complicated application and poor cosmetic outcome. The article provided an overview of the most common scalp disorders, which we have observed in our study.

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