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Original Article

Aclinical spectrum of scalp dermatoses in adults presenting to a tertiary referral care centre.

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ABSTRACT

BACKGROUND: Hair and scalp disorders generally are not associated with significant physical morbidity but the psychological impact of visible scalp problems may be very high. The scalp is unique among skin areas in humans, with high follicular density and a high rate of sebum production. The skin of the scalp has several unique features that aid in its critical role of protecting the head. The follicular density is much higher, creating a dark, warm and moist environment. This provides thermal insulation, but also creates an environment conducive to the superficial mycotic infections that play a role in dandruff, seborrheic dermatitis, and tinea capitis, and for parasitic infestations such as pediculosis capitis. As there is a paucity of studies on scalp dermatoses in the Indian and the Western literature, a clinical spectrum of these scalp dermatoses can unravel the common clinical manifestations in our population.OBJECTIVES: To study the spectrum of scalp dermatoses in adults. To study the various clinical patterns of scalp dermatoses in adults. MATERIAL AND METHODS: The study was undertaken from January 2012 to June 2013. All adult patients reporting to the Department Of Dermatology, Sri R.L. Jalappa Hospital and Research centre attached to Sri Devaraj Urs Medical College, Tamaka, Kolar were evaluated for entry into the study and patients having scalp lesions were enrolled. A detailed history of all such patients was taken including general status of the patient, systemic diseases, medications used, precipitating factors such as sunlight, alcohol, smoking, drugs and trauma. Complete clinical and a thorough scalp examination was performed. RESULTS AND DISCUSSION: Scalp dermatoses are common in adult population, with prevalence of 2.85%. Majority of the patients with scalp dermatoses belonged to the age group of 41-50 years (30.9%), followed by 3rd decade (29.8%).Males (60.8%) were affected more than females (39.2%), with a male: female ratio 1.55:1. Scalp was the initial site of involvement in 73.1% of the cases studied. Lesions exclusively over the scalp were seen in 47.3% of adults. Multiple regions of the scalp were affected in 69.6% of the patients, with parietal area being involved in 57.3% of cases. Inflammatory conditions (72.5%) predominated in our study. The most common dermatosis was psoriasis which constituted 33.3% of cases, followed by seborrhoeic dermatitis(18.7%), pityriasis sicca (11.6%) and vitiligo (9.9%).

1. Introduction

The scalp is unique among skin areas in humans, with high follicular density and a high rate of sebum production. 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 the superficial mycotic infections that play a role in dandruff, seborrheic dermatitis, and tinea capitis, and for parasitic infestations such as pediculosis capitis. 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 fingers, combs, hats, other styling implements that can cause frictional injury and may introduce microorganisms, thereby increasing the likelihood of infections and infestations

In human societies, hair and scalp now play an important role in appearance and sexual signaling; original functional roles of protection and heat conservation are secondary, and changes in the appearance of skin and hair affect self-esteem and confidence in social settings. It should also be recognized that scalp changes in

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some cases may be a sign of a more substantial medical problem, thus making the differential diagnosis critically important. Many of the common scalp conditions share similar clinical manifestations of pruritus, scaling, inflammation and hair loss, complicating diagnosis, but a correct diagnosis is essential to initiate a proper treatment.[1] The scalp also participates in many systemic disorders and frequently is the chief site of involvement. Similarly, many generalized cutaneous disorders exhibit their most typical manifestations in the scalp. Hyperkeratosis (scaling), pruritus, alopecia, and inflammatory signs (erythema, purulence) are common symptoms of scalp disorders. Scaling and pruritus are extremely common complaints. In a survey of 735 adults in the United States, 39% reported having experienced some flaking, and almost 50% complained of scalp itch.[1]

As there is a paucity of studies on scalp dermatoses in the Indian and the Western literature, a clinical study of these scalp dermatoses can unravel the common clinical manifestations in our population.

MATERIALS AND METHODS

The study was undertaken from January 2012 to June 2013. All adult patients reporting to the Department Of Dermatology, Sri R.L. Jalappa Hospital and Research centre attached to Sri Devaraj Urs Medical College, Tamaka, Kolar were evaluated for entry into the study and patients having scalp lesions were enrolled.

A detailed history of all such patients was taken including general status of the patient, systemic diseases, medications used, precipitating factors such as sunlight, alcohol, smoking, drugs and trauma. Complete clinical and a thorough scalp examination was performed. During the clinical examination, the following elements were analysed such as morphology of the lesion, anatomical location and colour changes. The clinical diagnosis was established. In relevant cases, necessary investigations were done to establish the definitive diagnosis. The data collected was documented in a prescribed proforma. All patients aged 18 years and above with scalp lesions were included into the study. The following cases were excluded patients with hair disorders and patients on immunosuppressive medications.

RESULTS:

In total 171 adult patients with scalp lesions were enrolled in this study. Majority of the patients with scalp dermatoses belonged to the age group of 41-50 years (30.9%), followed by 3rd decade (29.8%).Males (60.8%) were affected more than females (39.2%), with a male: female ratio 1.55:1. The distribution of various scalp dermatoses according to age and sex is shown in table no.1. Majority of the patients (94.7%) had symptoms of more than 6 weeks duration . Of the 171 patients, 123 patients (71.9%) complained of itching of scalp. Burning sensation and discolouration were the other presenting complaints in 21(12.2%) and 17(9.9%) patients respectively

Table no. 1: Distribution of various scalp dermatoses according to age and sex

Scalp dermatoses	18-30yrs		31-40yrs		41-50yrs		51-60yrs		>61 yrs		Total (n=171)
	M	F	M	F	M	F	M	F	M	F	
Psoriasis	. 5	7	8	2	18	5	5	1	6	-	57 (33.3%)
Seborrhoeic dermatitis	8	2	5	3	5	4	3	2	-	-	32 (18.7%)
Pityriasis sicca	3	9	2	4	1	1	-	-	-	-	20 (11.6%)
Vitiligo	-	4	2	-	4	3	1	2	-	1	17 (9.9%)
Folliculitis	3	1	1	-	-	2	-	1	1	1	10 (5.8%)
Pemphigus vulgaris	1	2	2	-	2	1	1	-	-	-	9 (5.2%)
Discoid lupus erythematosus	-	-	1	-	1	1	-	-	1	-	4 (2.3%)
Chronic actinic dermatitis	-	-	-	-	1	-	1	-	1	-	3 (1.7%)
Seborrheoic keratoses	-	-	-	-	-	-	-	-	1	1	2 (1.1%)
Dermoid cyst	-	-	-	-	-	-	-	1	-	1	2 (1.1%)
Pyogenic granuloma	2	-	-	-	-	-	-	-	-	-	2 (1.1%)
Drug reactions	-	-	-	-	1	-	-	-	1	-	2 (1.1%)
Trauma	-	-	-	-	-	1	-	-	-	1	2 (1.1%)
Scarring alopecia	1	-	1	-	-	-	-	-	-	-	2 (1.1%)
Pityriasis amiantiacea	-	-	-	-	-	1	-	-	-	-	1 (0.5%)
Keratinous cyst	-	-	-	-	-	-	-	-	-	1	1 (0.5%)
Bullous pemphigoid	-	-	-	-	-	-	-	-	-	1	1 (0.5%)
Acquired icthyoses	-	-	-	-	-	-	-	-	1	-	1 (0.5%)
X- linked icthyoses	1	-	-	-	-	-	-	-	-	-	1 (0.5%)
Port wine stain	-	-	-	-	-	-	-	-	1	-	1 (0.5%)
Cherry angioma	-	-	-	-	-	1	-	-	-	-	1 (0.5 %)

More females presented with scalp dermatoses in the age group of 18-30 years as compared to males, whereas in all other age groups, males were more in number.

Scalp was the initial site of involvement in 73.1% of the cases studied. Lesions exclusively over the scalp were seen in 47.3% of adults. Associated risk factors with scalp dermatoses as shown in table 2 was elicited in 31.6% patients, with exacerbation of scalp dermatoses in winter season seen in 34.4% of those patients belonging to both sexes. In males, alcohol consumption and smoking worsened the condition in 16.3% of cases respectively. Emotional stress was the common associated risk factor in females (14.7%). Scalp was the initial site of involvement in 73.1% of the cases studied. Lesions exclusively over the scalp were seen in 47.3% of adults. Multiple regions of the scalp were affected in 69.6% of the patients, with parietal area being involved in 57.3% of cases. Plaques (77.1%) and scaling (82.4%) were the commonest morphological presentation in our study. A total of 21 different types of scalp dermatoses were noted in our study (table 3). Inflammatory conditions (72.5%) predominated in our study as shown in figure 1.The most common dermatosis was psoriasis which constituted 33.3% of cases, followed by seborrhoeic dermatitis(18.7%), pityriasis sicca (11.6%) and vitiligo (9.9%).

Table 2: Associated risk factors and various scalp dermatoses

Risk factors	Psoriasis	Seborrhoeic dermatitis	Miscellaneous	Total (n=61) (%)
Sunlight	-	-	3	3 (4.9%)
Alcohol	8	2	-	10 (16.3%)
Smoking	6	2	2	10 (16.3%)
Stress	6	3	-	9 (14.7%)
Seasonal (winter)	20	1	-	21 (34.4%)
Trauma	-	-	4	4 (6.5%)
Drugs	1	-	2	3 (4.9%)

Table 3: Clinical types of scalp dermatoses

Types	Total patients (n=171)	Percentage (%)
Chronic plaque psoriasis	57	33.3 %
Seborrheoic dermatitis	32	18.7%
Pityriasis sicca	20	11.7 %
Vitiligo	17	9.9 %
Folliculitis	10	5.8 %
Pemphigus vulgaris	9	5.3 %
Discoid lupus erythematosus	4	2.3 %
Chronic actinic dermatitis	3	1.8%
Seborrheoic keratoses	2	1.2%
Dermoid cyst	2	1.2%
Pyogenic granuloma	2	1.2%
Drug reactions	2	1.2%
Trauma	2	1.2%
Scarring alopecia	2	1.2%
Pityriasis amiantiacea	1	0.5%
Keratinous cyst	1	0.5%
Bullous pemphigoid	1	0.5%
Acquired icthyoses	1	0.5%
X- linked icthyoses	1	0.5%
Port wine stain	1	0.5%
Cherry angioma	1	0.5%

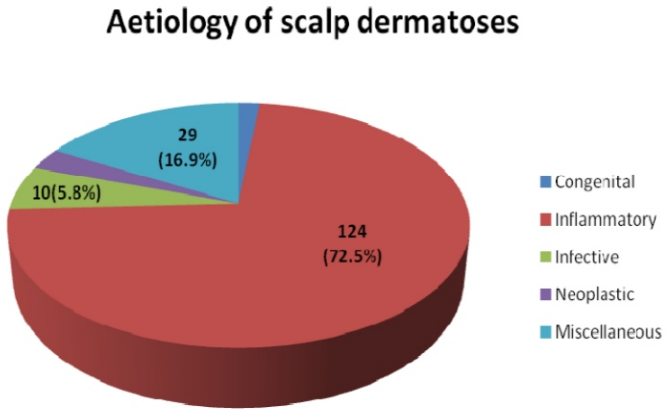


Figure 1. Inflammatory disorders (72.5%) were the cause of common scalp dermatoses seen in adults.

SCALP PSORIASIS:

Figure 2: Seborrhoeic dermatitis

Figure 3: Scalp vitiligo over the frontal and parietal area in a lady.

Figure 5: Multiple erosions over the scalp in a case of pemphigus vulgaris

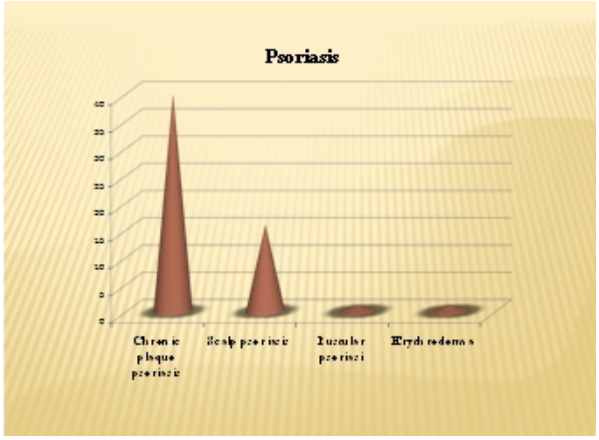
Table 4: Demographic and disease characteristics of scalp psoriasis

	Male (n=42)	Female (n=15)	Total (n=57)(%)
Age group			
18-30 yrs	5	7	12 (21.0%)
31-40 yrs	8	2	10 (17.5%)
41-50 yrs	18	5	23 (40.4%)
51-60 yrs	5	1	6 (10.5%)
>61 yrs	6	-	6 (10.5%)
Subtype			
Chronic plaque psoriasis	30	10	40 (70.2%)
Scalp psoriasis	12	4	16 (28.1%)
Pustular psoriasis	1	-	1 (1.8%)
Erythroderma	-	1	1 (1.8%)
Associated risk factors*			
Smoking	6	-	6 (10.5%)
Alcohol	8	-	8 (14.0%)
Stress	3	3	6 (10.5%)
Seasonal (winter)	16	4	20 (35.1%)
Drugs	1	-	1 (1.8%)
Sites **			
Frontal	34	10	44 (77.2%)
Parietal	39	8	47 (82.5%)
Temporal	22	1	23 (40.4%)
Occipital	2	1	3 (5.3%)
Vertex	1	-	1 (1.8%)
All	2	3	5 (8.8%)

* >1 risk factor present

**** >1 site involved**

Figure no. 7 showing demographic and disease characteristics of scalp psoriasis



The prevalence of psoriasis in our study is 33.33% with a median age of 45 yrs; seen in 42 males (73.6%) and 15 females (16.4%). Scalp was the only site of involvement in 16 patients (28%) and the initial site of involvement in 21 patients (36.8%). Commonest region of scalp involved was frontal, parietal and temporal areas. Scalp involvement was more common in patients with chronic plaque psoriasis. Scalp involvement was seen in only one patient of generalized pustular psoriasis. It was seen over the bald regions of the scalp in 3 patients above 50 years of age. History of exacerbation in winter months was seen in 20 patients (35%).Nail changes like pitting and onycholysis were seen in 18 patients. The prevalence of seborrhoeic dermatitis in our study was 18.7%; seen in 21 males (65.6%) and 11 females (34.4%). Diffuse involvement of scalp was seen in majority of cases. The prevalence of vitiligo in our study was 9.94%; seen in 7 males (41.2%) and 10 females (58.8%). Most common age group involved was 41-50 yrs (41.2%). Two cases had only scalp involvement. The incidence of folliculitis in our study was 5.8 % which was seen in 10 patients, 5 males (50%) and 5 females (50%) with a median age of 56 years. The incidence of Discoid lupus erythematosus was 2.3% in our study. Males and females showed equal incidence. In all the cases it was seen on hairy part of the scalp and associated hair loss was present in 75% of the cases in our study. The incidence of chronic actinic dermatitis was 3 cases (1.8%) in our study. It was seen only in males. History of exacerbation in summer was seen in all the three patients.

The miscellaneous and rare conditions with scalp dermatoses in our study were pyogenic granuloma (2 cases, 1.16%), Drug reactions (2 cases, 1.16%), Scarring alopecia (2 cases, 1.16%), Pityriasis amiantiacea (1 cases, 0.5%), Cherry angioma (1 case, 0.5%), Keratinous cyst (1 case, 0.5%), Acquired icthyoses (1 case, 0.5%), X-linked icthyoses-(1 case,0.5%), Port-wine stain (1 case, 0.5%) and Bullous pemphigoid (1 case, 0.5%).

DISCUSSION:

Scalp dermatoses are very common in general practice, and result in emotional stress in adult patients due to the associated social stigma. They occur as primary diseases of the scalp, as part of a generalised inflammatory skin disease, or as part of a systemic disease. Many common scalp conditions have similar symptoms, clinical features and in some cases it may be a sign of a more substantial medical problem, complicating diagnosis; so correct diagnosis is critical to determine proper treatment.1

There are no comprehensive studies on the various clinical patterns of scalp dermatoses in the Indian and Western literature.

In our study, a total of 171 adult patients with scalp lesions were enrolled.

The overall prevalence of scalp dermatoses in our study of patients representing rural population was around 3%. There is no comparable prevalence rate of scalp dermatoses reported from any other population group.

The most common age group affected with scalp dermatoses in adults in our study was 5th decade (30.9%), followed by 3rd decade (29.8%). This finding is similar to the observations of several previous studies of seborrhoeic dermatitis and psoriasis.1,2,3

In our study, scalp dermatoses were more common in males (60.8%) than in females (39.2%), which is in concordance with previous studies.3,4

In our study, the predominant symptom complained of by the patients was itching (71.9%). The less reported symptoms were burning sensation (12.3%) and discolouration (9.9%). This is similar to the findings in earlier studies of seborrhoiec dermatitis and psoriasis.1,2,5

In a study conducted on a quantitatively representative sample of the French population, scalp itching was reported in only 25% of the population .6 This discordance could be explained by the genetic and different environmental factors prevalent here.

Majority of our patients (94.7%) had symptoms persisting for more than 6 weeks duration, as inflammatory disorders were more common in our study population. This is consistent with the reported symptom duration in previous studies of inflammatory diseases.7

In the present study, the associated risk factors varied with the gender of the patient. Exacerbation of scalp dermatoses in winter season was documented in 21(34.4%) patients of both sexes; alcohol consumption (16.3%) and smoking (16.3%) were the other common associated risk factors in males, whereas in females, stress (9.8%) was the commonest associated risk factor. This is in agreement with the findings of the earlier studies.3 Scalp was observed to be the initial site of involvement in 73.1% of cases in our study population. Similar findings were reported in previous published studies.1,2,3,8 Exclusive scalp involvement was seen in 47.4% of patients.

The most common scalp area involved in our study population was parietal region (57.3 %), followed by temporal (43.8%) and frontal regions (39.7%). Multiple sites were involved in 69.5% of our patients. There are no other comprehensive studies for comparison of common sites involved in scalp dermatoses.

Various morphological types were observed in our study, with plaques (63.7%) and scaling (67.8%) being the predominant primary and secondary types respectively. These findings are consistent with the morphological types seen in previous studies of seborrhoeic dermatitis and psoriasis.1,2,3,4

Inflammatory disorders were the common aetiological cause for scalp dermatoses in our study population, which is in agreement with the previous study. 9

The most common scalp dermatoses observed in our study was psoriasis (33.3%), followed by seborrhoeic dermatitis (18.7%) and pityriasis sicca (11.7%), which is in concordance with the previous published study.9

In patients with chronic plaque psoriasis, scalp involvement was noticed in 30% of patients. Scalp was the only site to be involved by psoriasis in 28% of patients and it was the initial site to be involved in 66.6% of cases of psoriasis. This is in agreement with the previous published studies from India.10 In our study, scalp involvement was more common in males (73.7%) than in females (26.3%), which is in concordance with study from North India.11 Majority of our patients with scalp psoriasis were in the age group of 41-50 years and 18-30 years. This is in agreement to the bimodal distribution of psoriasis reported earlier. 10

Chronic plaque type of psoriasis (98.2%) was the commonest morphological phenotype seen in our study, which is in concordance to the findings in other studies.11 Pruritus was the commonest associated symptom present in 98.2% of cases, which is in agreement to the previous published studies.10

Winter exacerbation was reported by 34 % of patients in the present study, which was also observed in previous studies.11 Nail changes associated with psoriasis was observed in 31.5% of cases, which is similar to the finding in a previous study.12

The prevalence of seborrhoeic dermatitis in our study was 18.7% whereas, the mild form, dandruff /pityriasis sicca was seen in 11.7% of all patients with scalp dermatoses. This is in concordance to the observations of previous studies.2,3 Pityriasis sicca and seborrhoeic dermatitis were seen in 60% and 31.2% of cases in the age group of 18- 30 years respectively. This is in agreement to the observations of previous studies.1,2,4

Scalp as the first site of involvement was noticed in 23% of vitiligo cases in our study. Scalp involvement was more common in patients of vitiligo vulgaris in our study, constituting 94.1% of cases. Only one case (5.8%) of scalp involvement was seen in segmental vitiligo. Majority of the patients (41.1%) in this study belonged to the age group of 41-50 years and females (58.8%) were more commonly affected than the males (41.17%).

The incidence of folliculitis occurring on the scalp in our study was 5.8%. Males and females showed equal incidence, with 40% of cases belonging in the age group of 18-30 years in our study.

The prevalence of pemphigus vulgaris in our study was 0.2%. Scalp as the initial site of involvement in pemphigus patients was seen in 22.2% of our pemphigus cases, which is similar to the observation of a previous study. 13Scalp involvement in pemphigus patients was more common in males (55.5%) in our series.

The incidence of DLE in our study was 2.3%. Scalp was the initial and the only site of involvement in all the cases (2.3%). In all the cases it was seen on hairy part of scalp and associated hair loss was present in 75% of the cases. Males and females showed equal incidence in our study.

Other conditions recorded in our study with scalp dermatoses in adults were Chronic actinic dermatitis(3 cases,1.75%) , Seborrhoeic keratoses (2 cases 1.16%) , Trauma (2 cases, 1.16%), Pyogenic granuloma (2 cases, 1.16%), Dermoid cyst (2 cases, 1.16%), Drug reactions (2 cases, 1.16%), Scarring alopecia (2 cases, 1.16%), Pityriasis amiantiacea (1 cases, 0.5%), Cherry angioma (1 case, 0.5%), Keratinous cyst (1 case, 0.5%), Acquired icthyoses (1 case, 0.5%), X-linked icthyoses-(1 case,0.5%), Port- wine stain (1 case, 0.5%) and Bullous pemphigoid (1 case, 0.5%) which are not reported in any other study.

CONCLUSIONS:

Majority of the world's population experience scalp related symptoms at some point or the other.

Though scalp dermatoses do not account for majority of the dermatological problems, the psychological impact is significant affecting the social profile of these patients.

There are no comprehensive studies on the various clinical patterns of scalp dermatoses in the Indian and Western literature.

To the best of our knowledge this is the first Indian study on adult scalp dermatoses.

This study emphasizes the fact that many of the common dermatoses can significantly involve the scalp and can have overlapping symptoms and presentations making the diagnosis difficult.

A proper management of scalp dermatoses is essential to improve the quality of life of the patients.

This study gives a precise clinical insight into scalp dermatoses and thereby helps us manage the patient better

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