Pattern of Cicatricial Alopecia in a Tertiary Hospital of Bangladesh

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Abstract

Background: Cicatricial Alopecia (CA) is a rare, but significant group of trichologic disorders characterized by the progressive and irreversible loss of hair follicles, leaving little hope for a return to normal hair growth patterns. However, little information exists on cicatricial alopecia study in Bangladesh. The purpose of this study was to evaluate the pattern of CA in a tertiary care teaching hospital of Bangladesh.

Materials and methods: This is a descriptive cross-sectional study was carried out in the Department of Dermatology and Venereology of Chittagong Medical College Hospital (CMCH) Bangladesh, between the periods of September 2018 to December 2019.

Results: Out of 77 patients, most of the patients (42.9%) were 31-40 years age group with mean ± SD age was 33.1 ± 12.1 years. There was female (59.7%) predominance in the study. Among the patients, Primary Cicatricial Alopecia (PCA) were 85.7% and secondary cicatricial alopecia were 14.3%. The most common pattern of PCA was Discoid Lupus Erythematosus (DLE) 44.1% followed by Lichen Planopilaris (LPP) 19.5%. There were 3 (3.9%) patients of Kerion and 2 (2.6%) patients each of En coup de sabre, Nevus Sebaceous (NS) and trauma among secondary CA. Most frequents symptoms were scaling (16.9%) and pruritus (14.1%). The most affected regions were the vertex (75.3%) and parietal (63.3%), with associated involvement in the skin, mucous membrane and nail.

Conclusion: There was a higher frequency of CA in this study among female and middle-aged patients. Over SCA, PCA is more common.CA has always been a diagnostic and therapeutic challenges to dermatologists. Proper identification and differentiation of pattern of cicatricial alopecia is necessary for early diagnosis and to design appropriate treatment and to improve the quality of life of patient.

Key words: Cicatricial alopecia; Discoid lupus erythematosus; Lichen planopilaris.

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Introduction

Cicatricial Alopecia (CA)is a heterogeneous group of diseases that have the common end of follicular scarring. Scarring results from the loss of follicular stem cells and the inflammatory destruction of the hair follicle and sebaceousglands.[1]

Cicatricial forms of alopecia account for about 3.2%of all trichologic consultations.[2] And the frequency of CA is about 5.0–7.3% of all the hair loss patients.[3] CA can be categorized into primary and secondary cicatricial alopecia. It may primarily damage the hair follicles or cause secondary CA through a different mechanism.

Frontal Fibrosing Alopecia (FFA) Discoid Lupus Erythematosus (DLE) Lichen Planopilaris (LPP) Follicullitis Decalvans (FD) are some of the most common forms of primary cicatricial hair loss.[4] FD, Dissecting Cellulitis (DC) and Acne Keloidalis Nuchae (AKN) were more common in males, while DLE, LPP, Central Centrifugal Cicatricial Alopecia (CCCA) and Pseudopelade of Brocq (PPB) had a female predominance.

Patients with CA typically experience burning, itching, discharge, and scaling as symptoms, which can cause severe scarring on their scalp and pose a serious psychological risk to them.[5] Therefore, it is essential to have an early diagnosis, identify the underlying causes and start therapy without delay.

There is paucity of data on cicatricial alopecia types presented with patients in this country. Most of the study result originated from western world. So, this study was designed to describe the pattern of cicatricial alopecia attending the department of Dermatology and Venereology at Chittagong Medical College Hospital (CMCH).

Materials and Methods

This is a descriptive cross-sectional study. Total 77 (Seventy seven) patients were included in this study. Data was collected from the Outpatient department of Dermatology and Venereology at CMCH, during the period of September 2018 to

December 2019. All the consecutive patients were assessed for the eligibility. After giving written informed consent, demographic characteristics, clinical history, co morbid conditions, precipitating factors, dermatological examination including hair examination, nail examination, mucous membrane examination, skin examination, several clinical tests including hair pull test, trichoscopy were thoroughly used to find out the proper diagnosis. Data was collected through face to face interview.

For this study, all individuals with a clinical diagnosis of CA who had not received any previous treatment were included in the study. Individuals with severe co-morbid conditions requiring hospitalization and those who had previously had treatment with topical or systemic therapy were excluded.

Analysis was done with the help of SPSS (Statistical Package for Social Sciences) (Version 25). Qualitative variables were expressed as frequency and percentage and continuous variables were expressed as mean (±Standard deviations) or median (Range).

Ethical approval was taken before starting the study from the Ethical Review Committee of CMCH.

Results

A total of 77 patients were analyzed. Most of the patients (42.9%) were in 31-40 years age group with mean ± SD age was 33.1± 12.1(Range: 01-71) years [Table I]. There was female predominance in the study (Male: 31 and female: 46) with a sex ratio of 1:1.5 [Figure 1].

Primary cicatricial alopecia were 66 (85.7%) and secondary cicatricial alopecia were 11 (14.3%). In the present study, the most common primary CA pattern was DLE 34 (44.1%), which was followed by LPP 15 (19.5%). There were 3 (3.9%) patients of Kerion and 2 (2.6%) patients each of En coup de sabre, Nevus Sebaceous (NS) and trauma among secondary CA [Table II].

The trichoscopic features of DLE patients were plaques (61.8%), atrophy (58.8%) and scale (52.9%). In patients of LPP, most frequent were scales (80%) and dyspigmentation (66.7%) [Table III].

In our study, most of patients had symptoms like scaling (16.9%), pruritus (14.1%), photo sensitivity (9.1%), pain (3.9%) and discharge (2.6%). The most affected regions were the vertex (75.3%) and parietal (63.3%) with associated involvement in the skin, mucous membrane and nail [Table IV].

Table I Distribution of respondents according to Age (n=77)

Characteristics Age	Years	Frequency	Percentage (%)
Age category	1-10 years	6	7.8
	11-20 years	5	6.5
	21-30 years	17	22
	31-40 years	33	42.9
	41-50 years	12	15.6
	51 years & above	4	5.2
Mean (±SD)		33.13 (±12.135)	
Range		1-71	

SD: Standard Deviation, Data are expressed as frequency (Percentage).

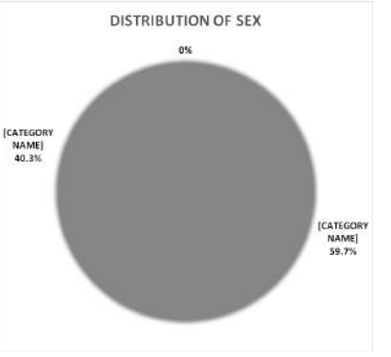

Figure 1 Distribution of Sex (n=77)

Table II Pattern of Cicatricial alopecia among study group (n=77)

Diagnosis	Frequency	%
Primary	66	85.7
Discoid Lupus Erythematosus (DLE)	34	44.1
Lichen Planopilaris (LPP)	15	19.5
Folliculitis Decalvans (FD)	5	6.5
Non-specific or end stage CA	5	6.5
Acne Keloidalis Nuchae (AKN)	3	3.9
Pseudopelade of Brocq (PPB)	3	3.9
Frontal Fibrosing Alopecia (FFA)	1	1.3
Secondary	11	14.3
Kerion	3	3.9
En coup de sabre	2	2.6
Nevus Sebaceous (NS)	2	2.6
Trauma	2	2.6
Aplasia Cutis Congenita (ACC)	1	1.3
Bullous Pemphigoid (BP)	1	1.3

H/O: History of data are expressed as frequency (Percentage),

Table III Trichoscopy findings of Cicatricial Alopecia

Trichoscopy findings	DLE (n=34)(%)	LPP (n=15)(%)	FD (n=5)(%)	PPB (n=3)(%)	NS (n=2)(%)	ACC (n=1)(%)
Plaques	21 (61.8)	5 (33.3)			1 (50)	
Erythema	17 (50)	1 (6.7)				
Dyspigmentation	17 (50)	10 (66.7)			1 (50)	
Scale	18 (52.9)	12 (80)	3 (60)			
Follicular plugging	3 (8.8)					
Atrophy	20 (58.8)	5(33.3)	2 (40)	2 (66.7)		
Telangiectasia	4 (11.8)					
Violaceous		4 (26.7)				
Pastules			2 (40)			
Crust			1 (20)			
Footprint of snow				1 (33.3)		
Hair Collar sign						1 (100)

DLE: Discoid Lupus Erythematosus, LPP: Lichen Planopilaris, FD: Folliculitis Decalvans, PPB: Pseudopelade of Brocq: NS: Nevus Sebaceous, ACC: Aplasia Cutis Congenita.

*Multiple answers.

Table IV Clinical characteristics of Cicatricial Alopecia

Characteristics Symptoms		Frequency	Percentage (%)
	Scaling	13	16.9
	Pruritus	11	14.1
	Photosensitivity	7	9.1
	Pain	3	3.9
	Discharge	2	2.6
Location of patch	Vertex	58	75.3
	Parietal	49	63.3
	Frontal	23	29.9
	Temporal	17	22.1
	Occipital	10	12.9
Associated involvement	Skin	20	25.9
	Mucous membrane	16	20.8
	Nail	2	2.6

H/O: History of data are expressed as frequency (Percentage).

Discussion

A wide range of patient age (1-71 years) was seen in the present research with mean age of 33.1±12.1 years. The number of CA patients was highest in the age group of 31-40 years (42.9%) and lowest in the age group of over 50 years (4.2%).This finding is similar to other recent studies where Jeyaprakash et al. and Qi et al. reported mean age of 35.5±15.0 years and 31.7 years respectively.[6,7]

With a ratio of 1:1.5, the study included 46 female patients (59.7%) and 31 male patients (40.3%). Over a ten-year period, a comprehensive retrospective investigation revealed that the majority of affected adults were female (2.6:1).[8] CAoccurs worldwide in otherwise healthy men and women of all ages.[9] When compared to affected males, this study reveals a predominance of females. The ratio's modest variance may be the result of regional differences. These results imply that the CA may be influenced by factors linked to sex and age. The higher female prevalence may be due to the fact that women are more likely to seek treatment for hair diseases due to the aesthetic implications they entail.

Only 14.3% of CA cases in this study had secondary causes, compared to 85.7% that had primary causes. In contrast to the present study, a retrospective analysis conducted by Whiting DA found that 7.3% of all patients with hair loss had CA, with a primary to secondary CA ratio of 4:1.[8] The most common cause of primary CA in our study was DLE 34 (44.1%). The other less frequent causes noted were LPP 15 (19.5%), AKN 3 (3.9%), PPB 3 (3.9%) and FFA 1 (1.3%). Qi S et al. Thakur BK et al. and Musbah observed that DLE was the most common subtype.[7,9-11] After analyzing 136 biopsy specimens of scarring alopecia, Trachsler and Trueb found that LPP was the most often diagnosed condition, followed by DLE, FD and PPB.[12] LPP is one of the most frequent causes of adult primary cicatricial alopecias, but accounted for only 19.5% of patients in our study.[13] These differences in incidence may be related to differences in time frame of survey, territorial limitation, or ethnic factors. Fewer subcategories, such as alopecia mucinosa, dissecting cellulitis of the scalp, and mixed cicatricial alopecia, were identified in this study because of its short duration along with a small number of primary CA patients.

There has been very little reported study on secondary CA.There were four patients with morphea and one each with lupus vulgaris, congenital absence of skin, burn, and sarcoidosis in a research by Kumar UM and Yelikar BR on secondary CA.[14] Three cases of trauma/radiation, two cases of Naevus Sebaceous (NS) one each of trichilemmal cyst, lipoid proteinosis, seborrheic keratosis, En coup de sabre, and Gunther's disease were described by Jeyaprakash et al.[6] By comparison, there were 2 (2.6%) patients with En

coup de sabre, NS and trauma and 3 (3.9%) patients for Kerion in the current study. This discrepancy might result from the fact that the other study was based on dermoscopic and histological features, while the current study was based on clinical data. Furthermore, a significant number of individuals with secondary CA presentation could not be identified due to the current study's shorter duration.

A non-invasive method called Trichoscopy can help identify the biopsy site and provide a clinical diagnosis.[15] Decreased hair density and loss of follicular openings are characteristics features of primary CA on Trichoscopy. Large yellow spots and thick arborizing vessels are the most distinctive trichoscopic features of DLE of the scalp. Some patients may have scattered brown discoloration.[16] In our DLE patients, plaques (61.8%), atrophy (58.8%) and scale (52.9%) were seen. Despite not being present in the index patients, red dots-which represent follicular apertures encircled by dilated vessels-are thought to be a positive prognostic indicator.[17] This is contrary to that of Qi S et al. but corresponds with the findings of Jeyaprakashet al. and Thakur BK et al. Possible explanations include our patients' brown skin color.[7,6,10]

Both FFA and LPP have the same trichoscopic and pathologic characteristics, such as the lack of follicular openings, cicatricial white patches, peripilar casts, blue-gray dots, and perifollicular erythema.[18] In present study, most frequent features of LPP were scales and dyspigmentation.

FD is a condition characterized by multiple hairs in one follicular unit, with tufted hairs potentially affecting severity. In a recent study, tufted hairs were found in 12.5% of patients, not in our patients.[11] The current study's dermoscopic observation of PPB revealed atrophic areas with footprint of snow. This feature matched the findings of the studies by Jeyaprakash et al. and Thakur BK et al.[6,10] Dermoscopic characteristics of PPB, such as arborising vessels and a pinkish-white appearance, were observed in a research by Qi S et al.[7] Due to the patients' darker skin types, this finding was not reported in the current study.

Patients with CA in our study had symptoms like scaling, pruritus, photosensitivity, pain and discharge. The most affected regions were the vertex and parietal, with associated involvement in the skin, mucous membrane, and nail. Significant scarring occurs on their scalp as a result, which may pose a major psychological risk for them. As a result, early detection, identification of the underlying causes and timely treatment are critical.

Limitation

Because of the short study period, this study's limitations are the lack of different clinical manifestations of CA.

Conclusions

There was a higher frequency of CA in this study among female and middle-aged patients. Over SCA, PCA is more common. More study is required to better understand the causes of CA and advance research toward better treatments and a cure. CA has always been a diagnostic and therapeutic challenges to dermatologists. Proper identification and differentiation of pattern of cicatricial alopecia is necessary for early diagnosis and to design appropriate treatment and to improve the quality of life of patient.

Recommendation

Extensive research is required to evalute the pattern of Cicatrical Alopecia (CA) for whole community.

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Contribution of authors

MNS-Conception, acquisition of data, data analysis, drafting & final approval.
MRM-Design, critical revision & final approval.
MSA-Acquisition of data, data analysis, drafting & final approval.

Disclosure

All the authors declared no conflict of interest.

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