

Scalp and hair disorders at the dermatology outpatient clinic of a tertiary hospital

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Abstract

Background: Scalp and hair disorders are common and of immense health and cosmetic significance. Alopecia, the most common presentation of scalp disorders, has been found to impact negatively on the quality of life of patients.

Aim: This study aimed to document the spectrum of scalp and hair disorders, with the age and sex distribution, at the dermatology outpatient clinic of the Lagos University Teaching Hospital (LUTH) between 2004 and 2012.

Methods: This is a retrospective study of patients who presented primarily with hair and scalp disorders. Data was obtained from clinic records and patients clinic notes; and included biodata, diagnoses, age and sex distribution.

Results: During the study period, 860 patients (5.3%) of the 16,160 patients presented primarily with scalp and hair disorders. Both children and adult patients are seen at the clinic. Patients seen ranged from 3 months to 80 years of age. More males (67.2%) than females (32.8%) were seen; with ratio 2.05:1. Tinea capitis, dermatophyte infection of the scalp, was the most common disorder (30.5%), with male preponderance in the first decade of life. Chronic inflammatory scalp disorders such as acne keloidalis, dissecting folliculitis and folliculitis decalvans were found predominantly in adult males; while alopecia areata, scalp psoriasis and pityriasis amiantacea were noted to be more common in adult females.

Conclusion: This study noted high frequency of chronic inflammatory scalp disorders found predominantly in males. However, disorders of hair care practices such as traction alopecia found commonly in community surveys were not frequent presentations in our practice. Further to determine the epidemiologic factors, aetiology and clinical characteristics of the common scalp and hair disorders will be necessary.

Keywords: Acne keloidalis/folliculitis nuchae, alopecia, alopecia areata, scalp, tinea capitis

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INTRODUCTION

Scalp and hair disorders are common and of immense health and cosmetic significance. Alopecia which is the most

common presentation of scalp and hair disorders has been found to impact negatively on the quality of life of patients.¹ It is associated with feelings such as loss of self-confidence, low self-esteem and heightened self-consciousness.²

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Hair loss was noted to be one of the most common reasons African-Americans see the dermatologist; seen in 8.3% of patients seen at a dermatology centre in US in a series.³ Data from dermatology outpatient clinics revealed that alopecia and acne keloidalis nuchae accounted for 3.4% and 2.9% of clinic attendance, respectively at Ibadan, while hair disorders and acne keloidalis nuchae accounted for 1.3% and 3.7% of clinic attendance, respectively, in Southeast Nigeria.^{4,5} Epidemiology and aetiology of scalp and hair disorders vary with age, gender, ethnic groups and hair care practices.³

Alopecias can be classified broadly into non-scarring and scarring (cicatricial) alopecia. Alopecia areata (AA), an asymptomatic, non-scarring, hair loss on the scalp and/or body is now regarded as an autoimmune inflammatory disorder.⁶ It is classified according to the extent of hair loss; patchy AA describes patchy hair loss, alopecia totalis involves total loss of scalp hair and alopecia universalis involves loss of all scalp and body hair.⁶⁻⁸

Cicatricial or scarring alopecia refers to permanent destruction of hair follicles presenting as effacement of the follicular orifices. Cicatricial alopecias may be primary or secondary.⁹ Primary cicatricial alopecia has been broadly classified based on the predominant type of inflammatory cells found in histology. Lymphocytic types include chronic cutaneous lupus erythematosus, lichen planus, classic pseudopelade of Brocq, central centrifugal cicatricial alopecia (CCCA), alopecia mucinosis, keratosis follicularis and spinulosa decalvans.⁹ The neutrophilic alopecias are folliculitis decalvans and dissecting cellulitis/folliculitis (perifolliculitis abscedens et suffodiens). The mixed types are acne folliculitis/keloidalis, acne folliculitis necrotica and erosive pustular dermatoses.⁹

The aim of this study was to document the spectrum of scalp and hair disorders with age and sex distribution at the Dermatology Outpatient Clinic of the Lagos University Teaching Hospital (LUTH) over a 9-year period.

MATERIALS AND METHODS

This is a retrospective study of patients seen at the Dermatology Outpatient Clinic of the LUTH between January 2004 and December 2012. The dermatology clinic of LUTH is a tertiary referral centre and patients are referred from primary and secondary healthcare facilities, private hospitals and company clinics mainly in Lagos and parts of Ogun State, Nigeria. It is a general dermatology clinic.

Data of patients who presented primarily with scalp disorders and hair loss were extracted from the clinic

records and patients' clinic notes. Diagnoses were made from history and examination based on the known clinical pattern of the diseases and hair and scalp microscopic findings. Findings documented in the clinic notes on examination of the skin, nails and mucosal surfaces in scalp disorders to substantiate diagnoses of psoriasis, lichen planus and lupus erythematosus were reviewed. Investigations documented in the notes to confirm the clinical impressions were reviewed. These included scalp biopsies, scalp scrapings and hair pull for potassium hydroxide microscopy and culture in suspected tinea capitis, full blood count, erythrocyte sedimentation rate, thyroid function tests, antinuclear antibody and anti-dsDNA. In women who presented with androgenetic alopecia, a hormone profiling was done to include serum levels of testosterone and its analogues, while abdominopelvic ultrasound scans were performed to rule out hyperandrogenic states, polycystic kidney disease and androgen-producing tumours.

Data was analysed using SPSS 16 (IBM SPSS statistics, New York, US) and data displayed using tables and figures. *P* value and Chi-square was calculated using online Chi-square calculator.¹⁰

RESULTS

Over the 9-year period, 860 (5.3%), out of a total of 16,160 patients, presented with primary scalp disorders. In the analysis, diagnosis of 847 patients was included; 13 patients' data were excluded because their ages were not documented and the diagnoses were incongruous. There was a male preponderance in patients seen with scalp and hair disorders: males were 567 (66.9%) while females were 280 (33.1%) giving a male-to-female ratio of 2.05:1. Scalp disorders occurred in all age groups. The youngest patient presented at 3 months of age with AA and the oldest patient was an 80-year-old woman who presented with folliculitis decalvans. Dermatophyte infection (tinea capitis) was the most common disorder 262 (30.1%), seen more in males <10 years. Apart from tinea capitis, the peak age of presentation for most commonly encountered scalp disorders is in the third decade of life [Figure 1 and Table 1].

The five most common scalp and hair loss disorders seen (excluding tinea capitis) include acne keloidalis nuchae 190 (22.4%), AA 172 (20.3%), dissecting folliculitis 53 (6.3%), folliculitis decalvans 37 (4.4%) and scalp psoriasis 16 (1.9%). The youngest patient with acne folliculitis nuchae in this series was a 14-year-old male. Among the 172 individuals with AA, 143 (83.3%) had

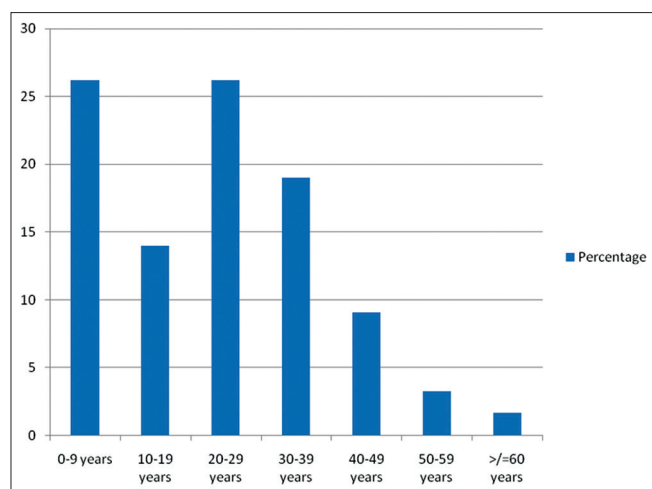


Figure 1: Age distribution of patients with scalp and hair disorders

patchy AA, 14 (8.0%) had alopecia totalis, 7 (4.0%) had alopecia universalis, 6 (3.4%) had ophiasis pattern of AA and 2 (1.1%) had AA of the beard.

Scalp disorders with significant male preponderance include tinea capitis (childhood), acne keloidalis nuchae and dissecting folliculitis. Figure 2 shows a man with acne keloidalis nuchae associated with dissecting folliculitis, while figure 3 is complicated acne keloidalis nuchae following treatment at a bump centre. Those with significant female preponderance were AA, scalp psoriasis, pityriasis amiantacea, traction alopecia and patterned (androgenetic) alopecia. Figure 4 is androgenetic alopecia in a young woman; and figure 5 shows familial alopecia in two female siblings [Table 2].

Disorders designated others include lichen planopilaris in 2 patients, discoid lupus erythematosus, central cicatricial centrifugal alopecia 1 patient, pseudopelade of Brocq 1, periporitis 1, poliosis 1 and pseudofolliculitis barbae 1.

Forty-two patients (30 females and 12 males) presented with non-scarring alopecia and 38 patients (23 females and 15 males) presented with scarring alopecia, for which the aetiologies could not be determined.

DISCUSSION

Hair and scalp disorders are relatively common and cumulatively fall among the top ten disorders seen in patients that present at dermatology outpatient clinics in Nigeria. Hair and scalp disorders span through all age groups.

This study revealed tinea capitis as the most common scalp and hair disorder, occurring in childhood, followed by AA, trichotillomania and scalp psoriasis. This finding is similar to a



Figure 2: Dissecting folliculitis with acne keloidalis nuchae

Table 1: Frequency of scalp disorders by age (years)

Scalp disorders	0-9	10-19	20-29	30-39	40-49	50-59	≥60	Total
Tinea capitis	178	44	10	15	6	7	1	261
Acne keloidalis nuchae	0	13	88	59	25	5	0	190
Alopecia areata	35	42	49	28	12	4	2	172
Dissecting folliculitis	0	3	28	11	7	3	1	53
Folliculitis decalvans	0	3	16	8	7	1	2	37
Scalp psoriasis	3	1	6	4	2	0	0	16
Pityriasis amiantacea	0	4	1	7	1	1	0	14
Traction alopecia	0	0	2	7	2	1	0	12
Patterned/androgenetic alopecia	0	1	3	2	2	0	0	8
Trichotillomania	4	1	1	1	0	0	0	7
Chemical alopecia	0	1	0	1	1	1	0	4
Seborrhoeic dermatitis	0	0	1	2	0	0	0	3
Pediculosis capitis	2	1	0	0	0	0	0	3
Others	0	1	1	3	1	2	0	8

study done in Southeast Nigeria among children which showed that tinea capitis was the most predominant scalp problem followed by AA, psoriasis and telogen effluvium.¹¹ In contrast, the work done at a pediatric and dermatology centre in Turkey reported seborrhoeic dermatitis, transient neonatal hair loss, AA, temporal triangular alopecia and pityriasis amiantacea as the most predominant scalp and hair diseases.¹²

Transmissible scalp and hair diseases such as tinea capitis and pediculosis capitis are frequently seen at dermatology clinics in Nigeria and may be a reflection of the low socioeconomic status of Nigerians.^{4,5,13} This study revealed lower frequency of individuals with pediculosis capitis than was expected. Pediculosis capitis has been reported extensively in primary schools and often managed by local school health authorities as public health issue.¹⁴ A study from Ibadan, Oyo State, Nigeria, reported a



Figure 3: Complicated acne keloidalis nuchae treated with corrosive substances at a local bump centreffig



Figure 4: Androgenetic alopecia in a young woman



Figure 5: Alopecia totalis and ophiasis inversus pattern of alopecia areata in siblings



Figure 6: Tinea capitis in an adult male

Table 2: Frequency of scalp disorders by sex

Scalp disorders	Male	Female	χ^2	P	Total (%)
Tinea capitis	204	57	21.46	0.04 X 10 ^{-4**}	261 (30.8)
Acne keloidalis nuchae	188	2	113.38	0.00 X 10 ^{-4**}	190 (22.4)
Alopecia areata	73	99	58.50	0.00 X 10 ^{-4**}	172 (20.3)
Dissecting folliculitis	48	5	14.26	0.02 X 10 ^{-2**}	53 (6.3)
Folliculitis decalvans	30	7	3.49	0.061 X 10 ⁰	37 (4.4)
Scalp psoriasis	3	13	17.12	0.035 X 10 ^{-3**}	16 (1.9)
Pityriasis amiantacea	1	13	23.00	0.016 X 10 ^{-4**}	14 (1.7)
Traction alopecia	1	11	18.89	0.014 X 10 ^{-4**}	12 (1.4)
Patterned alopecia	2	6	6.42	0.011 X 10 ^{0**}	8 (0.9)
Trichotillomania	3	4	1.89	0.17 X 10 ⁰	7 (0.8)
Chemical alopecia	1	3	3.19	0.07 X 10 ⁰	4 (0.5)
Seborrhoeic dermatitis	2	1	0.00	1.00 X 10 ⁰	4 (0.4)
Pediculosis capitis	3	0	1.49	0.22 X 10 ⁰	3 (0.4)
Others	2	6	6.42	0.011 X 10 ^{0**}	8 (0.9)

*Statistically significant male preponderance, **Statistically significant female preponderance

lower frequency of pediculosis capitis in the urban areas compared to the rural areas.¹⁵

Tinea capitis, a common dermatophyte infection of the scalp and hair, is seen predominantly in males in their first and second decades of life. It is found in epidemic proportions among Nigerian school children and in the rural communities.^{16,17} Factors driving the epidemiology of tinea capitis include low socioeconomic status of parents (low education and occupational strata), poor hygiene, overcrowding, carrying of objects on the head/scalp, sharing of clippers, scissors, combs, towels and fomites.¹⁷

Tinea capitis can be seen at all ages and has been documented in neonates as well as in an 80-year-old woman.^{18,19} Tinea capitis in adults have been reported in individuals of African descent and in Taiwan.^{20,21} It represented 11% of a series with a female preponderance; occurring in the setting of immune suppression such as HIV, transmission from children to parents and as zoophilic infection.²⁰⁻²² Tinea capitis in adults has been misdiagnosed as inflammatory scalp disorders such as

folliculitis decalvans, dissecting cellulitis and bacteria folliculitis [Figure 6].²²⁻²⁴ It has been advocated that it should be considered in the work up for inflammatory scalp disorders to prevent complications such as disfiguring hair loss, scarring alopecia, spread to family members and unnecessary invasive investigations.^{23,24}

Seborrhoeic dermatitis, psoriasis, lichen planus and pityriasis amiantacea are papulosquamous disorders with significant scalp affectation. Scalp psoriasis occurs in 50% of individuals with psoriasis²⁵ and appears to be more predominant than scalp seborrhoeic dermatitis in this study. Females presented more with scalp psoriasis, while severe scalp seborrhoeic dermatitis was found more in males. Seborrhoeic dermatitis occurs in the sebum-rich areas of the scalp, neck and trunk. The prevalence of 3%–5% of the world population is thought to be a gross underestimation, as 15%–20% of adult population has mild seborrhoeic dermatitis of the scalp called dandruff in adults and cradle cap in children.²⁶ There are many over the counter anti-dandruff products and many cases are treated by primary physicians, while only severe forms get referred to the tertiary hospital. In Nigeria, herbal medications have been reported to successfully treat seborrhoeic dermatitis and many cases get treated without recourse to the physicians or dermatologist.²⁷

Male preponderance of scalp and hair disorders is reflective of high frequency of conditions such as acne folliculitis/keloidalis nuchae, dissecting folliculitis and folliculitis decalvans, which are chronic inflammatory disorders found mostly in males of African descent.^{3,28}

Acne keloidalis/folliculitis nuchae was reported in 13.6% of African-American football players and none of their Caucasian counterparts in a series.²⁹ Overall, it accounts for 1.12% of patients seen at the skin clinic, similar to a previous documentation from another skin clinic in Southwest Nigeria.³⁰ It is seen predominantly in dark-skinned males, between ages 20 and 50.^{29,31,32} It has also been reported in females in Nigeria and other parts of the world.^{33,34} Aetiology is unknown, but suggested mechanisms include trauma, chronic irritation and seborrhea.³¹ George *et al.* documented high levels of early morning testosterone in a series, supporting the role of high level of testosterone and end-organ hypersensitivity in the aetiology.³⁵ Histology findings is similar to other scarring alopecia and include perifollicular chronic inflammation (lymphocytic and plasmacytic), lamellar fibroplasia, absence of sebaceous glands, destruction of hair follicles, thinning of the follicular epithelium and subsequent total epithelial destruction.³⁶ Close shaving of occipital hair, chronic irritation from shirt

collars, hats and athletic gear, low-grade bacterial infections, emotional stress, use of anticonvulsants, autoimmunity, a short stocky neck and coarse frizzy hair were found to precipitate and sustain the inflammation.^{29,31,32}

Dissecting folliculitis (perifolliculitis abscedens et suffodiens) is a chronic relapsing disorder of the scalp with unknown aetiology. It can present as part of the follicular occlusion triad along with acne conglobata and hidradenitis suppurativa.²⁸ It usually starts in the post-adolescent age with folliculitis which develops into painful nodules with purulent discharges, which later coalesce to form abscesses and sinuses.²⁸ It has been reported in teenagers and a common differential of infectious dermatoses, hence late diagnoses and prolonged treatment as fungal disease.³⁷

AA was noted in 1.1% of our patients, which is in keeping with surveys across dermatology clinics in Nigeria and other parts of the world which reported a prevalence of 0.7%–3.8% of the patient population.^{4,7,13,38} While equal sex distribution was reported from other parts of the world; this study found a significant female predilection ($P < 0.05$).^{7,38} AA occurs at all ages with peak occurrence in the third decade of life and 88.5% presenting before the age of 40 years, similar to those found in dermatology clinics in various parts of the world.^{7,38} Aetiology of AA is thought to be an interplay between genetic and environmental factors.³⁹ The genetic factors are not fully understood, but it is associated with human leukocyte antigen DQB and DR alleles, MXE, AIRE and IL1 cluster genes. Suspected trigger factors include diet, stress and unknown pro-inflammatory agents.³⁹⁻⁴¹

The natural hair type in dark-skinned Africans of sub-Saharan descent is usually dry, tightly curled and often difficult to comb.⁴² This has resulted in the evolution of various restructuring techniques such as chemical relaxants, hot combing, hot iron curling, blow dryers and styling methods such sewing or glueing of artificial hair pieces to the existing natural hairs, cornrows, braiding of hairs with extensions, ponytails and various forms of hair plaiting.^{43,44}

Disorders of hair care practices such as traction alopecia, chemical alopecia, pseudopelade of Brocq and CCCA have been documented at hair and dermatology outpatient clinics across Africa.⁴⁴⁻⁴⁷ CCCA and folliculitis decalvans are frequently seen with prolonged use of chemical combs and straighteners.⁴⁴⁻⁴⁷ Tinea capitis, rather than use of hair relaxers, was reported as a cause of CCCA in a series among African-Americans.⁴⁸ This brings to fore the possibility of tinea capitis, a potentially reversible scalp disorder, as an aetiological factor, causing prolonged scalp inflammation.⁴⁸

Traction alopecia refers to traumatic hair loss resulting from hair grooming practices with prolonged and repeated pull on hair follicles.⁴⁹ It is quite common and was found in 47% of young adult females between the ages of 12 and 35 in secondary and tertiary institutions in Nigeria.⁵⁰ It is associated with persistent use of synthetic hair extensions, chemical hair relaxants, tight hair styles such as braids, ponytails and plaits, attaching coloured and patterned beads at the tips of the braided hair, genetically inherent difficulty in combing the African hair and use of traditional head gears.^{44,45,49} Clinical features of traction alopecia include scalp pain, erythema and tenting of the scalp in the acute phase and peripilar casts (sleeve-like keratinous structure encircling the hair shaft made of internal root sheath) and traction folliculitis which may become secondarily infected and hair loss in the late phase.⁴⁹ The hair loss in traction alopecia is non-scarring and reversible in the early phase but becomes scarring in the late stages.^{44,45,49}

Although a source of embarrassment and frustration to a large number of women, disorders of hair care such as traction alopecia are often asymptomatic, hence may not present to the doctors.⁵¹ Hairdressers have been noted to provide some form of treatment or remedies for hair and scalp complaints and only the severe cases are referred to the tertiary hospitals where skin clinics are located.⁵² Many women discontinue the use of any hair product or stop hair care practice, for which they have noticed untowards effects or simply live with these disorders.

Androgenetic alopecia, also known as patterned hair loss, is a genetically determined, characterised by gradual change of terminal hair into the vellus hair. It is common in men and post-menopausal women.⁵³ It is psychologically disturbing, especially in women and may be associated with androgen excess and polycystic ovarian syndrome. Stigmata of hyperandrogenic states such as hirsutism, nodulocystic acne, menstrual irregularity and infertility, may be found in some women.⁵³

There is a group of patients with scarring and non-scarring alopecias, in which specific diagnoses could not be determined for various reasons such as financial constraint preventing biopsies and inconclusive biopsy results. One of the challenges of dermatology in Nigeria is the dearth of dermatopathologists and hair pathologist.

CONCLUSION

Disorders of hair care practices such as traction alopecia, seborrhoeic dermatitis and CCCA found in community surveys were not frequent presentations in our patients,

contrary to expectation. There is a need for studies to further describe the epidemiologic factors, aetiology and clinical characteristics of common hair and scalp disorders, particularly those that are almost exclusively found in dark-skinned Africans such as acne keloidalis nuchae in males and traction alopecia in females.

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Conflicts of interest

There are no conflicts of interest.

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