

Prevalence and possible aetiological factors of acne keloidalis nuchae in South–South Nigeria

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Abstract

Background: Acne keloidalis nuchae (AKN) is a scarring folliculitis found predominantly among men of African descent. It could present as pustules, papules or keloidal eruptions usually at the occiput of the scalp and has been associated with certain aetiological factors.

Aim: The aim of the study was to determine the prevalence and possible aetiological factors of AKN in the University of Port Harcourt Teaching Hospital (UPTH).

Methods: It was a 3-year retrospective study conducted in the Dermatology Clinic of the UPTH, from 2014 to 2017, where folders of patients who were diagnosed with AKN by dermatologist were retrieved and reviewed.

Results: The prevalence of AKN was 1.7%. Male patients were predominantly affected with a male-to-female ratio of 21:1. The age range of the cases was from 18 to 51 years, with a mean \pm standard deviation of 27.31 ± 7.01 . Majority of the subjects had a history of clean-shaven hair (80.6%). Other possible predisposing factors were friction from collars (48.4%) and shaving of the hairline at the occiput during haircuts (64.5%).

Conclusion: Despite the low prevalence of AKN, its social impact is glaring; therefore, more emphasis should be laid on the aetiological factors and management to improve the quality of life of the affected patients.

Keywords: Acne keloidalis nuchae, Port Harcourt, risk factors

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INTRODUCTION

Acne keloidalis nuchae (AKN) is a chronic scarring folliculitis which has a similar physical appearance with a keloid but a contrasting histological feature. In Benin, West Africa, the prevalence of acne keloidalis over a 9-year period was 0.7%.¹ In Nigeria, the prevalence ranges from 0.7% to 9.4%.^{2,3} There are certain aetiological factors that have been implicated, which include, trauma from clean-shaven haircuts, which can lead to abnormal keratin expression as seen in pseudofolliculitis, friction from shirts collars,

increased androgen receptor sensitivity as well as activity of the sebaceous gland after the puberty.⁴ It has also been suggested that AKN may be a cutaneous manifestation of metabolic syndrome because of its association with obesity.⁵ It is characterised by papules, pustules and keloidal eruptions, usually at the occiput of the scalp. The lesions can be unsightly due to the use of various forms of treatment, which at times exacerbates the condition and reoccurrences are also common.^{6,7} This can be quite worrisome to the patient, thereby affecting their quality of life. Management of this condition could be medical which includes the use of topical or intra-lesional steroids and systemic antibiotics, especially

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the tetracycline derivatives and retinoids.⁷ Surgical therapies including excision, electrotherapy, cryotherapy and lasers are recommended for patients who have failed medical treatment, but its availability is a challenge in a developing country like Nigeria. The aim of the study is, therefore, to determine the prevalence and possible aetiological factors of AKN in the University of Port Harcourt Teaching Hospital (UPTH).

METHODS

Description of the study area

The study was carried out in the Dermatology Clinic of the UPTH, Port Harcourt, which is the main referral centre for rivers and neighbouring states.

Study design

It was a 3-year retrospective study, from 2014 to 2017, where case folders of patients who presented to the dermatology outpatient clinic with features of AKN including papules, plaques and nodules at the occipital region of the head or back of the scalp were retrieved from medical records and reviewed for age, sex and possible aetiological factors of AKN.

Ethical consideration

Ethical approval was obtained from the Research and Ethics Committee of UPTH prior to the commencement of the study.

Statistical analysis

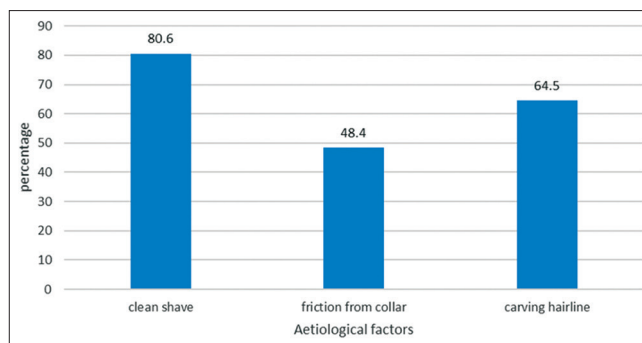
Statistical Package for the Social Sciences 22 (IBM SPSS version 22. Armonk, NY:IBM corp) was used for the data analysis. The results were presented as mean ± standard deviation (SD) for continuous variables and frequencies for categorical variables. Graph 1 and Table 1 are used to present results as appropriate.

RESULTS

A total number of 1304 patients were seen in the clinic during that period, with 22 (1.7%) of the patients having AKN. About 95.5% of the recruited patients were male, while female patients accounting for 4.5% were recruited, with a male-to-female ratio of 21:1. The age range of the cases was from 18 to 51 years, with a mean ± SD of 27.31 ± 7.01. The peak prevalence of AKN was at the third decade of life (15, 68.2%), and it was subsequently found to reduce with increasing age. The highest prevalence was found among patients who had a tertiary level of education as shown in Table 1.

Possible aetiological factors associated with acne keloidalis nuchae

As shown in Figure 1, 80.6% of the patients had a history of clean-shaven hair, 48.4%: friction from collars and



Graph 1: Possible aetiological factors of acne keloidalis nuchae

Table 1: Sociodemographics characteristics of the study population

	Frequency
Age category (years), n (%)	
18-20	2 (9.1)
21-30	15 (68.2)
31-40	4 (18.2)
41-50	0 (0.0)
51-60	1 (4.5)
Total	22 (100)
Age range, mean±SD	
18-51	27.31±7.01
Sex, n (%)	
Male	21 (95.5)
Female	1 (4.5)
Educational level, n (%)	
None	4 (18.2)
Primary	2 (9.1)
Secondary	7 (31.8)
Tertiary	9 (40.9)

SD: Standard deviation

64.5%: shaving of the hairline at the occiput during haircuts. About 58.6% of the patients had a combination of the three factors (clean-shaven hair, friction from neck collars and shaving of the hairline at the occiput).

DISCUSSION

The prevalence of AKN reported in this study was 1.7%, and it is similar to the prevalence of 2.6% reported in a teaching hospital in Enugu, Nigeria, by Nnoruka *et al.*⁸ This low prevalence could be attributed to increased patronage of barbers, hair dressers and bump specialists, by the affected patients, especially in developing countries. More males were affected compared to females, which suggest that androgen may play a pivotal role in the aetiology of AKN and it is consistent with other reports.^{9,10} The affected age ranged from 18 to 51 years with a mean of 27.3 ± 7.01, which is similar to the mean age of 31.6 reported by Ogunbiyi.⁹ It has been generally reported to occur exclusively among post-pubertal males and rarely found after the age of 55 years.⁹ The most prevalent factor associated with AKN is the history of clean shaving of hair, and this could be due to its association with trivial trauma, which will subsequently



Figure 1: Picture of a patient presenting with acne keloidalis nuchae

lead to inflammation, excessive collagen deposition and fibrosis.¹¹ This is supported by the histological findings of hyperkeratotic and acanthotic epidermis, perifollicular inflammation and partially ruptured hair follicle reported by Na *et al.*¹² Friction from neck collar and carving of hair have been suggested as possible risk factors for AKN. Women who carve the back of their hairs with a razor are also commonly affected.¹³ In a Korean Study, three young men were found to first develop AKN during their military service where they were required to regularly cut their hairs and also frequently wear helmets.¹² Other possible aetiological factors not reviewed in this study include the use of antiepileptic agents, immunosuppressive agents, metabolic syndrome and chronic infection. AKN presents as a firm, dome-shaped, inflammatory papules and pustules over the nape of the neck. Subsequently, fibrosis ensues with the coalescence of firm papules into keloidal scarring plaques.^{14,15} Diagnosis is predominantly clinical, although occasionally biopsy can be done to exclude other lesions that have similar clinical presentations.

Limitation of the study

As a result of issues with poor record keeping in developing countries, there may be some individuals who presented within the study period but were not recruited in the study. In addition, there were no defined criteria for the diagnosis of AKN, as its diagnosis was made by different dermatologists. Fasting blood glucose and lipid profile were not regularly determined and therefore, metabolic diseases were not assessed as a possible aetiological factor for Acne Keloidalis nuchae.

CONCLUSION

AKN is a cosmetically disfiguring condition that negatively impairs the quality of life of the affected patients. Although majority of the affected patients possibly had trivial trauma from neck collar friction and shaving of hair, there may

also be other unidentified predisposing factors. Therefore, more research has to be done in the areas of aetiology and management to curb its societal impact.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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Nil.

Conflicts of interest

There are no conflicts of interest.

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