Hidradenitis Suppurativa in Skin of Colour: A Multicentre Review of Clinical and Demographic Trends in Nigeria

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Abstract

Background: Hidradenitis suppurativa (HS) is underreported in African populations, leading to gaps in clinical and epidemiological data. This study aimed to describe the clinical characteristics and associated comorbidities among Nigerian patients.

Methods: This retrospective chart review included 64 adult patients diagnosed with HS between January 2017 and December 2022 across seven dermatology clinics in Nigeria. Data extracted included demographic characteristics, disease severity (Hurley staging), body mass index (BMI), and medical history (smoking, alcohol use, diabetes, acne). BMI was categorized according to WHO cutoffs, and statistical analysis was performed using SPSS version 26; $p < 0.05$ was considered significant.

Results: Among the 64 patients, 70.3% (n=45) were female. The median age was 30 years [IQR: 24,36], and HS onset occurred before age 29 in 66.9%. The axilla was the most commonly affected site, with inflammatory nodules (64%), papules (45.3%), and pustules (34.4%) as predominant lesion types. Over half (56.2%) had moderate to severe disease (Hurley Stage II/III). Obesity (BMI > 25 Kg/m²) was present in 51.5%, while acne (29.7%) and diabetes (4.7%) were the most frequent comorbidities. Antibiotics were the primary treatment modality.

Conclusion: Although HS appears uncommon among Nigerians, severe disease is the most common presentation. The axilla is the predominant site of involvement, nodules and papules are the most common lesion types. Treatment is mostly with antibiotics. This study underscores the need for increased awareness, earlier diagnosis, and expanded therapeutic options, including biologics, in African populations.

Keywords: Hidradenitis suppurativa, clinical, Hurley's stage, Africa

Key message: Hidradenitis suppurativa, although uncommon among Nigerians, is associated with prolonged duration and severe disease.

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Résumé

Contexte : L'hidradénite suppurée (HS) est sous-diagnostiquée dans les populations africaines, ce qui entraîne des lacunes dans les données cliniques et épidémiologiques. Cette étude visait à décrire les caractéristiques cliniques et les comorbidités associées chez les patients nigérians.

Méthodes : Cette étude rétrospective a porté sur les dossiers de 64 patients adultes chez lesquels une HS a été diagnostiquée entre janvier 2017 et décembre 2022 dans sept cliniques de dermatologie au Nigéria. Les

données extraites comprenaient les caractéristiques démographiques, les signes de gravité de la maladie (classification de Hurley), l'indice de masse corporelle (IMC) et les antécédents médicaux (tabagisme, consommation d'alcool, diabète, acné). L'IMC a été catégorisé selon les seuils de l'OMS et l'analyse statistique a été réalisée à l'aide du logiciel SPSS version 26 ; un seuil de signification De P < 0,05 a été retenu.

Résultats : Parmi les 64 patients, 70,3 % etaient des femmes. L'âge médian était de 30 ans [IQR : 24-36], et l'hidradénite suppurée (HS) s'est déclarée avant l'âge de 29 ans chez 66,9 % des patients. L'aisselle était La zone la plus fréquemment atteinte, les nodules inflammatoires (64 %), les papules (45,3 %) et les pustules (34,4 %) étant les types de lésions prédominants. Plus de la moitié des patients (56,2 %) présentaient une forme modérée à sévère de la maladie (stade ii/iii de Hurley). L'obésité (IMC > 25 Kg/M²) était présente chez 51,5 % des patients, tandis que l'acné (29,7 %) et le diabète (4,7 %) étaient les comorbidités les plus fréquentes. Le traitement de première intention était l'antibiothérapie.

Conclusion : Bien que L'HS semble rare chez les Nigérians, la forme sévère est la plus fréquente. l'aisselle est la zone prédominante touchée, et les nodules et les papules sont les types de lésions les plus courants. Le traitement repose principalement sur l'antibiothérapie. Cette étude souligne la nécessité d'une meilleure sensibilisation, d'un diagnostic plus précoce et d'un élargissement des options thérapeutiques, notamment par le biais des biothérapies, au sein des populations africaines.

Mots-Clés : Hidradénite Suppurée, Clinique, Stade De Hurley, Afrique

Introduction

Hidradenitis suppurativa (HS), also referred to as acne inversa, is a chronic, inflammatory, and relapsing disorder of the pilosebaceous unit that primarily affects apocrine gland-rich regions of the body, such as the axillae, groin, perianal, perineal, and inframammary areas.[1–3] Clinically, HS is characterized by painful, deep-seated nodules, abscesses, draining sinus tracts, and ultimately, disfiguring scars in longstanding disease.[1,2] Beyond its physical manifestations, HS exerts a profound psychological and social burden due to malodorous discharge, pain, impaired mobility, and reduced quality of life.[4-8]

Hidradenitis suppurativa typically begins after puberty, with peak onset in the second to fourth decades of life.[2,9-12] Its pathogenesis is multifactorial, involving follicular occlusion, immune dysregulation, and mechanical stress, compounded by genetic and environmental influences.[13] Recognized risk factors for the development and progression of HS include obesity, tobacco use, family history, and hormonal changes.[2,9,13,14] Although individuals with skin of colour (SOC), including those of African descent, have been increasingly reported to have higher prevalence and more severe phenotypes of HS, there remains a paucity of epidemiological and clinical studies from sub-Saharan Africa.[12,14-18] In particular, data from Nigeria are virtually non-existent despite the large and diverse population, limiting understanding of HS in this setting. The current study aims to fill this gap by describing the clinical profile and comorbidities of HS among Nigerian patients. Specifically, the study evaluated the anatomic distribution of lesions, lesion morphology, disease severity based on Hurley staging, and treatment modalities, as well as the associations with BMI, acne, diabetes mellitus and smoking.

Materials and Methods

This retrospective multicenter chart review of 64 adult patients diagnosed with HS was conducted at seven locations: the outpatient skin clinics of the Lagos State University Teaching Hospital, the Federal Medical Centre Keffi, the University of Abuja Teaching Hospital, Abuja, the University of Calabar Teaching Hospital, the Kaduna State University Teaching Hospital, the University of Port Harcourt Teaching Hospital and the Gastroderm clinic, Lekki phase 1, Lagos, Nigeria. The study was preceded by ethical approval (LREC/06/10/1953) by the Lagos State University Teaching Hospital ethical review board. The study covered six years from January 2017 to December 2022 and was conducted over three months from November 2022 to January 2023.

Case notes of all patients diagnosed with HS at the clinics during the study period were reviewed, and data were extracted using a proforma designed by the researchers. Confidentiality was ensured by assigning

numbers to each case note. Variables collected included age, sex, BMI, lesion location and morphology, Hurley stage, comorbidities (acne vulgaris, diabetes mellitus), smoking history, and treatment modality.

Data were analyzed using SPSS version 26. Normality was assessed using the Kolmogorov–Smirnov test. Categorical variables were presented as frequencies and percentages; continuous variables were summarized using medians and interquartile ranges (IQR). Comparisons were made using the Mann-Whitney U test, the Chi-squared test, and Fisher's exact test, as appropriate. Statistical significance was set at $p<0.05$.

Results

Of the 13,602 medical records reviewed, 64 patients (0.47%) were diagnosed with hidradenitis suppurativa (HS) between 2017 and 2022. The majority (70.3%) were female, with an age range of 12–59 years and a median (IQR) age of 30 (24–36) years. Most patients (78%) were aged 20–39 years. The age at HS onset ranged from 10 to 59 years, with a median (IQR) of 26 (20–32) years. Onset occurred before age 20 in 23.4%, between 20–29 in 40.6%, between 30–39 in 28.1%, between 40–49 in 4.7%, and after 50 in 3.1%. The median (IQR) disease duration was 36 (12–60) months (range: 1–420 months).

A family history of HS was reported in 10.9% (7/64) of cases. Smoking was documented in 4.7%, with two patients actively smoking at diagnosis. Alcohol intake was reported in 15.6%. Shaving of the genital area was undocumented in 70.3% (45/64), while 20.3% (13/64) reported shaving, and 9.4% (6/64) did not. Diabetes mellitus was present in 4.7%, and acne history was noted in 29.7% of patients. Table 1.

Table 2 shows the clinical profile of the patients. The median BMI of the group was 27.6 (23.6, 30.3) Kg/m^2, and 51.5% were overweight/ obese. The axilla was the most frequently involved site, followed by the groin. The most common clinical lesion was nodules (41/64), followed by papules (29/64) and pustules (22/64), as shown in Figures 1-4. The median fasting blood sugar of the patients was 88.0 mg/dl (IQR 82.3, 97.8 mg/dl). Diabetes mellitus was recorded in 3 patients, and acne in 29.7% (19/64). One patient had no active lesions at the time of evaluation, and HS was severe in 56.1% of patients. Antibiotics were the primary modality of treatment. Treatment was not documented in two patients as there was no flare at the time of evaluation. The severity of HS was significantly associated with HS duration and female gender. Table 3

Discussion/Conclusion

Studies on hidradenitis suppurativa (HS) in African populations are limited, likely due to the rarity of the condition, potential underdiagnosis, and under-reporting.[12,14–16] This study contributes to the growing body of evidence by demonstrating that HS in this population predominantly involves the axillae, presents with nodular lesions, is more common in females and is often diagnosed at a moderate to severe stage

In this study, over half of the patients with HS were female, consistent with previous reports.[6,11,12] Hidradenitis suppurativa is generally more prevalent among females; however, geographic variations in gender distribution have been observed. For instance, a study from Tunisia reported a male predominance, while a study from Singapore found no significant gender bias.[18,19]

The majority of patients in this study experienced disease onset before age 29, consistent with previous reports indicating that HS typically begins around puberty or in the early twenties. [10,11] This age distribution is consistent with other epidemiological studies.[10,11] The duration of HS was long in most individuals, reflecting the diagnostic challenges associated with HS. The prolonged disease duration observed in our cohort reflects a common diagnostic delay, as HS is frequently misdiagnosed as folliculitis or furunculosis in early stages. Without specialized dermatological evaluation, patients often seek care only after disease chronicity and progression, a trend also noted in other studies.[8,20]

The prevalence of a positive family history of HS in this cohort was lower than in other studies.[21] This may reflect the overall low prevalence of HS in the study population. Additionally, a familial predisposition to HS has been associated with earlier disease onset, greater disease severity, and delays in seeking

treatment, often due to the perception of HS as a normal familial condition.[22]

Comorbidities, including features of metabolic syndrome, were infrequent in this study population. Smoking was not a prominent factor, reported in only three patients (4.7%). This is consistent with social patterns in Nigeria, where smoking is not a widespread practice.[23] A similar finding was reported in a Ghanaian study, which also found no association between HS and smoking, suggesting that smoking may not be a significant risk factor for HS in African populations.[12] However, in other populations, smoking has been identified as a key risk factor for HS and is known to exacerbate disease severity, impair ulcer healing, and promote bacterial colonization.[2,24,25]

A history of acne vulgaris was reported in approximately one-third of the patients. Acne vulgaris is more common in individuals with HS than in the general population and is associated with increased disease severity.[25] However, in this study, acne vulgaris was not significantly associated with HS severity. Both HS and acne vulgaris involve the pilosebaceous unit and share overlapping pathogenetic mechanisms, including follicular occlusion and inflammation.[25] Diabetes mellitus was documented in only three patients, and the mean fasting blood glucose of the cohort remained within normal limits. Although diabetes mellitus is a recognized comorbidity in HS,[25] it was relatively infrequent in this population. The hyperglycemic environment and associated insulin resistance in diabetes mellitus are thought to exacerbate HS by promoting microbial proliferation, enhancing pro-inflammatory cytokine activity, and impairing wound healing.[25]

Approximately half of the patients were either overweight or obese; however, body mass index (BMI) was not significantly associated with HS severity in this study. Although obesity is a risk factor for HS, its association with severity is not clearly documented.[11,13,25] Obesity has been shown to aggravate HS by increasing disease flares, extending anatomical involvement, and worsening overall severity.[26,27] Increased skin friction and maceration within intertriginous folds in obese individuals create a conducive environment for inflammation and secondary bacterial colonization.[27] Furthermore, adipose tissue functions as an endocrine organ that secretes pro-inflammatory cytokines, thereby perpetuating a chronic inflammatory state.[27]

The axilla was the most frequently affected anatomical site, followed by the groin. This distribution aligns with HS's predilection for apocrine gland-rich intertriginous areas.[2,3] These findings are consistent with previous reports, where the axilla and groin are the most commonly involved regions.[7,19] The predominant lesion types observed in this study included inflammatory nodules, papules, and pustules, while ulcerations, sinus tracts, and keloidal scars were also noted in some cases. These morphologies are characteristic of HS, which is clinically defined by recurrent painful nodules, abscesses, sinus tracts, and scarring.[1,2,19]

Hurley staging in this study mirrored previous reports, with all three stages of HS represented among patients. However, a greater proportion of individuals presented with stage II and III disease, indicating that moderate-to-severe HS was the predominant clinical presentation. Although most studies report a spectrum of Hurley stages, hospital-based studies tend to document more advanced disease.[7,8,19,28] This trend may be attributable to the fact that patients with early-stage (Hurley I) HS are more likely to self-manage their symptoms and delay specialist consultation. Similarly, a study in African American patients noted a relatively low incidence of HS but a higher severity of disease at presentation.[17]

Consistent with findings from other studies, antibiotics, particularly a combination of rifampicin and clindamycin, were the most frequently utilized treatment modalities, followed by retinoids.[19] A combination regimen of rifampicin and clindamycin is recommended in current treatment guidelines for HS.[29,30] Surgical and laser treatments were also employed. Surgery was primarily performed to manage sinus tracts[31] and scarring, while laser therapy, particularly for hair removal, served as an adjunctive treatment with symptomatic benefits.[32]

Intralesional triamcinolone acetonide and biologics were used in a limited number of patients. Both are recognized treatment options for HS.[30,33]

Triamcinolone acetonide inhibits leukotrienes and interleukin-1, reducing inflammation, while biologics target tumour necrosis factor and cytokine pathways.[30,33] However, the high cost of biologics limits their accessibility in Nigeria.

Triamcinolone acetonide inhibits leukotriene pathways and suppresses interleukin-1 and other pro-inflammatory cytokines, whereas biologics target tumour necrosis factor-alpha and other cytokines involved in the chronic inflammatory cascade of HS.[30,33] However, due to high costs and limited accessibility, the use of biologics remains infrequent in our setting.

Hidradenitis suppurativa severity in this cohort was significantly associated with female gender and disease duration. Prolonged disease course without adequate intervention often results in the development of scarring and progressive severity.[20] These findings are consistent with previous studies that have identified duration of disease and female gender as significant predictors of HS severity.[17,22]

A key limitation of this study was the relatively small sample size, reflecting the rarity of HS in the Nigerian population and potentially limiting the generalizability of our findings. Nonetheless, the strengths of the study include its multicenter design, the extended 6-year data collection period, and the confirmation of diagnoses by dermatology specialists, which ensure diagnostic accuracy and consistency.

In conclusion, this study represents the first documented analysis of the clinical profile of HS in a Nigerian cohort. Although HS remains an uncommon diagnosis in Nigerians, it often presents with moderate to severe disease and is characterized by a prolonged disease course. The axilla was the most frequently affected anatomical site, and lesion morphology was consistent with that reported in other populations. Antibiotics were the most commonly employed treatment modality. Further research is warranted in this population to explore additional aspects of HS, including its impact on quality of life, the therapeutic efficacy and accessibility of biologic agents, and patient perceptions and health-seeking behaviours. In addition, validated instruments for HS diagnosis should be routinely used in the evaluation of patients with recurrent folliculitis and boils.

Statement of Ethics

Ethical approval (LREC/06/10/1953) for this study was granted by the Ethics review committee of the Lagos State University Teaching Hospital following a review of the study protocol. Consent was not obtained from the patients, as this is a retrospective study. The hospital authorities also granted permission to access the patient's case records.

Conflict of Interest Statement

The authors have no conflict of interest

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Author Contributions

ELA: Conceptualization, literature review, conduct of study, first draft, final review

BO: Conceptualization, conduct of study, first draft, final review

EH: Conceptualization, conduct of study, first draft, final review

SH: Conceptualization, conduct of study, first draft, final review

PI: Conceptualization, conduct of study, first draft, final review

EO: Conceptualization, conduct of study, first draft, final review

Data Availability Statement: Data is available upon request.

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Figure Legends

1. Fig. 1A. Hidradenitis suppurativs (axilla). Nodule. Hurley's stage I
2. Fig. 1B. Hidradenitis suppurativs (axilla). Nodules, pustule. Hurley's stage I
3. Fig. 2. Hidradenitis suppurativs (axilla). Nodules, pustules, ulcers, scars. Hurley's stage II
4. Fig. 3. Hidradenitis suppurativs (axilla). Nodules, sinus tracts, atrophic scars. Hurley's stage III
5. Fig. 4A. Hidradenitis suppurativa (axilla). Keloids.
6. Fig. 4b. Hidradenitis suppurativa (gluteal). Atrophic scars, post-inflammatory hyperpigmentation.

Table 1. Sociodemographic Variables and Clinical History of the Patients

Variable	Frequency (n = 64)	%
Age group (years)		
< 20	4	6.3
20 - 29	26	40.6
30 - 39	24	37.5
30 - 49	6	9.4
> 50	4	6.3
Age at diagnosis (years)		
< 20	5	7.8
20 - 29	28	43.8
30 - 39	21	32.8
40 - 49	7	10.9
> 50	3	4.7
Duration of HS (months)		
< 12	33	51.6
12 - 23	10	15.6
24 - 59	21	32.8
Family history		
Yes	7	10.9
No	54	87.5
I don't know	1	1.6
History of acne vulgaris		
Yes	19	29.7
No	45	70.3
History of diabetes		
Yes	3	4.7
No	61	95.3
Smoking		
Yes	3	4.7
No	61	95.3
Alcohol intake		
Yes	10	15.6
No	54	84.4
Regularly shaved axilla		
Yes	16	25.0
No	3	4.7
Not documented	45	70.3

Table 2. Clinical Characteristics of Patients

Variable	Frequency (n = 64)	%
BMI grade		
Underweight	2	3.1
Normal	18	28.1
Overweight	18	28.1
Obese	15	23.4
Not done	11	17.2
Site of lesion		
Axilla	55	85.9
Groin	22	34.4
Genital	13	20.3
Breast	6	9.4
Buttocks	12	18.8
Atypical sites	10	15.6
Type of lesion		
Nodules	41	64.1
Papules	29	45.3
Pustules	22	34.4
Atrophic scars	17	26.6
Keloid	11	17.2
Sinus tract	11	17.2
Abscesses	7	10.9
Ulcers	7	10.9
Hyperpigmented patches	2	3.1
Cyst	1	1.6
Fistula	1	1.6
HS staging		
No lesion	1	1.6
Hurley I	27	42.2
Hurley II	23	35.9
Hurley III	13	20.3
Treatment given**	**n = 54**	
Antibiotics	46	85.2
Retinoids	15	27.8
NSAID	7	13.0
IL TAC	4	7.4
Laser	3	5.6
Benzyol peroxide	2	3.7
Surgery	2	3.7
Biologics	1	1.9
None	2	3

** Undocumented in some patients

Table 3. Factors Associated with the Severity of HS

Variables	Mild HS n = 28 (%)	Severe HS n = 36 (%)	p
Median Age (IQR)	30.5 (24.0, 36.0)	30.0 (23.3, 38.5)	0.771
Age at onset (IQR)	26.0 (22.0, 33.8)	22.5 (18.3, 32.0)	0.319
Age at diagnosis (IQR)	28.0 (24.0, 36.0)	29.0 (23.0, 38.5)	0.865
Duration of HS months (IQR)	18.0 (6.0, 45.0)	48.0 (24.0, 81.0)	**0.005**
Blood sugar (IQR)	88.0 (79.8, 95.8)	87.5 (83.3, 99.5)	0.648
BMI (IQR)	26.0 (22.9, 28.7)	28.1 (23.8, 31.5)	0.221
Smoking			
Yes	2 (66.7)	1 (33.3)	0.577#
No	26 (42.6)	35 (57.4)	
Gender			
Male	12 (63.2)	7 (36.8)	**0.042**
Female	16 (35.6)	29 (64.4)	
History of acne			
Yes	6 (31.6)	13 (68.4)	0.202
No	22 (48.9)	23 (51.1)	
History of diabetes			
Yes	1 (33.3)	2 (66.7)	1.000#
No	27 (44.3)	34 (55.7)	

NB: # = Fischer exact p-value

FIGURES

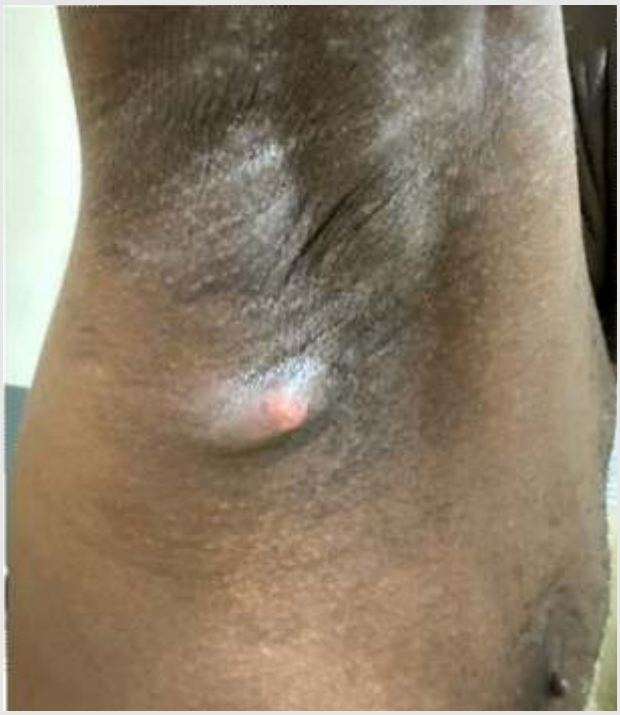


Fig. 1A. Hidradenitis Suppurativa (Axilla). Inflammed Discrete Nodule. Hurley's Stage I

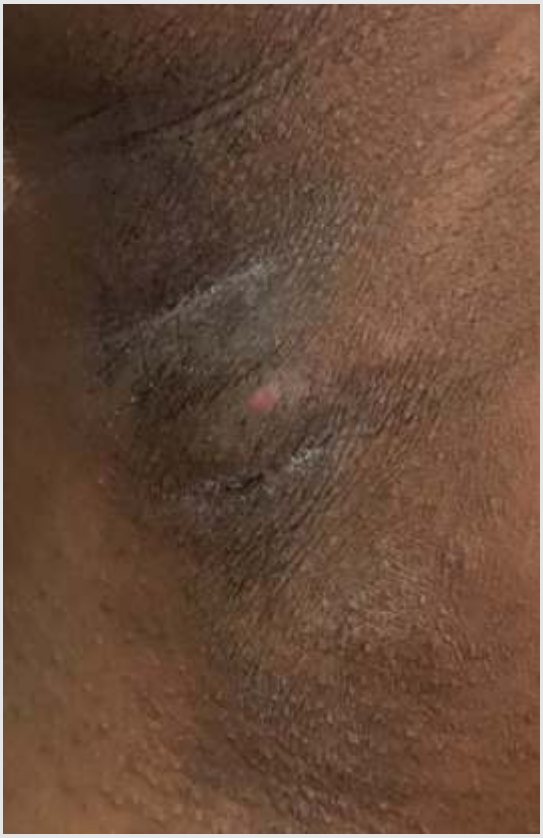
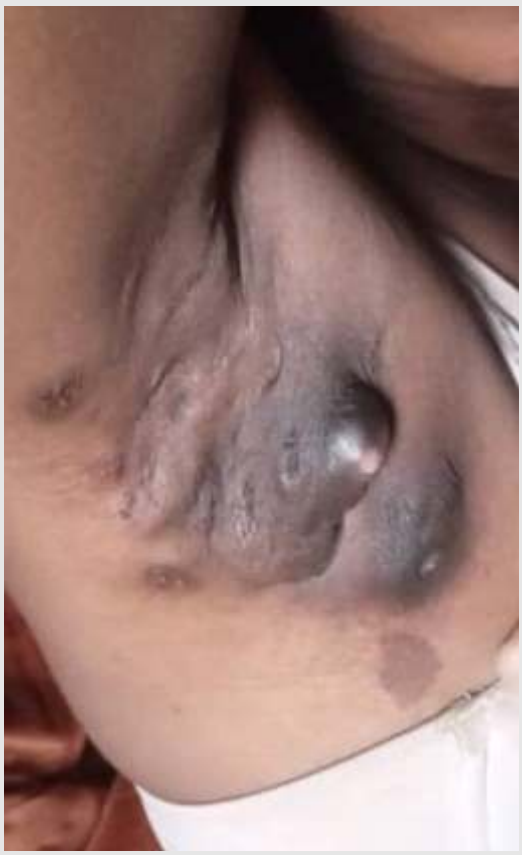


Fig. 1B. Hidradenitis Suppurativs (Axilla). Nodules, Pustule. Hurley's Stage I



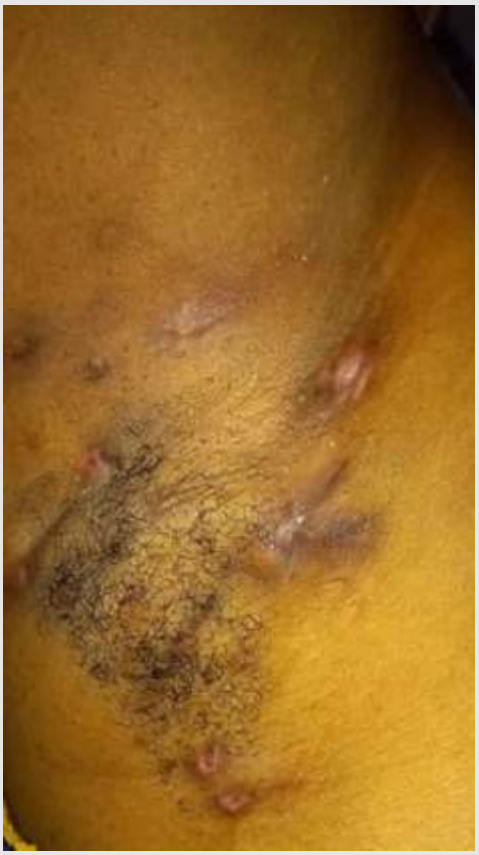


Fig. 2. Hidradenitis Suppurativs (Axilla). Nodules, Pustules, Ulcers, Scars. Hurley's Stage II

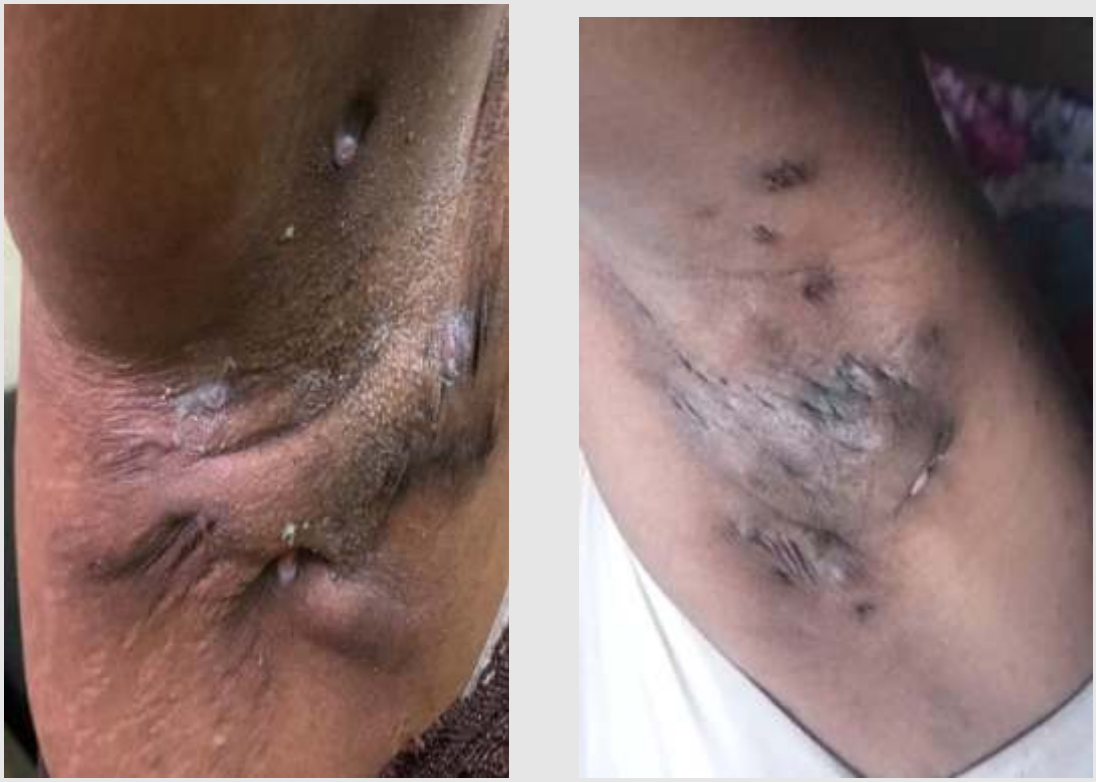


Fig 3. Hidradenitis Suppurativs (Axilla). Nodules, Sinus Tracts, Atrophic Scars. Hurley's Stage III

Fig. 4A. Hidradenitis Suppurativa (Axilla). Keloids

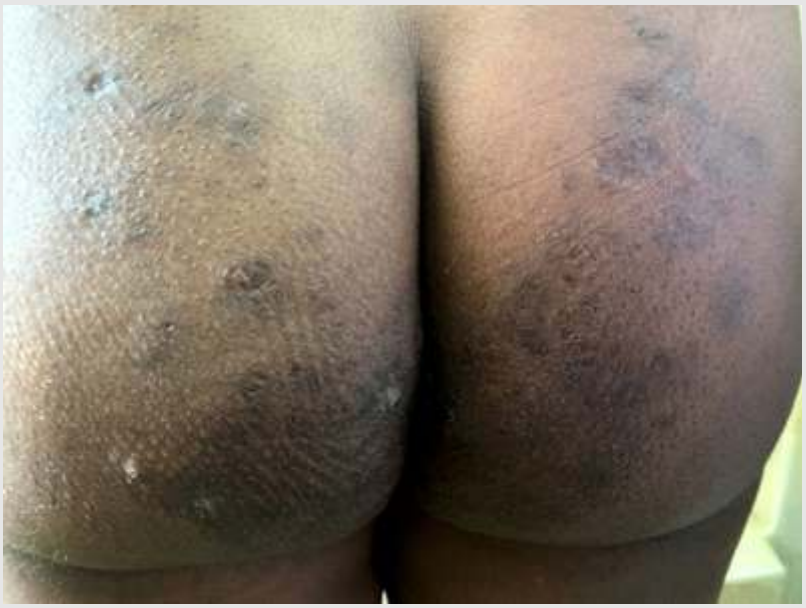


Fig. 4B. Hidradenitis Suppurativa (Gluteal). Atrophic Scars, Post-Inflammatory Hyperpigmentation