

INTRODUCTION

Hidradenitis Suppurativa (HS), or acne inversa, is a chronic inflammatory disease of the apocrine gland-bearing regions, commonly seen in the axilla, groin, and perineum.¹ HS is characterized by perifollicular lymphocytic infiltrate with subsequent follicular sebaceous gland loss and formation of sinus tracts or fistulae and is classified using Hurley Staging.^{1, 2}



Figure 1. Hurley Staging for Hidradenitis Suppurativa.
I. Mild: individual primary lesions and cysts without scarring or fistulae.
II. Moderate: individual primary lesions and cysts with presence of fistulae.
III. Severe: confluent primary and secondary lesions with fistulae and scars.

Based on the Hurley staging the treatment is selected, ranging from topical, intralesional, systemic such as antibiotics and immunomodulators, and surgical.⁴

A more novel treatment includes the use of laser treatments, including Nd:YAG laser, Alexandrite laser, or combination of laser therapies.⁶The advantage of the laser therapy includes targeting a specific area of the body where HS is present without significant systemic side effects, complications, or antibiotic resistance.⁷

Laser therapy shows promise in the treatment of HS since it has showed clinical improvement and extended disease-free periods.⁸

AIM

In this paper we aim to show the efficacy of laser treatment in patients with HS leading to resolution of the disease without complications and increased quality of life.

METHODS

A retrospective chart review of patients diagnosed with HS was performed on patients from Atlantic Center of Aesthetic & Reconstructive Surgery on Fort Lauderdale, FL using a HIPPA complaint database. The study period ranged from February 2016 to February 2021. Patients without laser therapy treatment for HS were excluded.

Collected data was classified in categories, as follows: (1) general demographic information about the patients; (2) HS disease characteristics; (3) treatment modalities including previous treatment and current treatment; (4) laser therapy treatment information; (5) resolution of symptoms of HS and assessing if treatment was completed, ongoing, or the patient was lost to follow up. Standard statistical methods were used to analyze the data.

RESULTS

- 116 patients were identified with a diagnosis of HS: 95 made the inclusion criteria ranging from 11 to 35 years old.
- The mean age of diagnosis was 16.2 ± 3.1 and mean age of onset 15 ± 3.3 (Table 1) .
- The lesions were classified by Hurley’s Type: Type II with 90%, followed by Type III with 10%, and finally Type I with 7%.
- Nd:YAG laser configuration ranged from 14-30 joules over 17-18 mm.
- All the included patients showed improvement of the HS lesions. 52% completed treatment, 31% patients were lost to follow up, and 16% are currently ongoing treatment (Table 2).

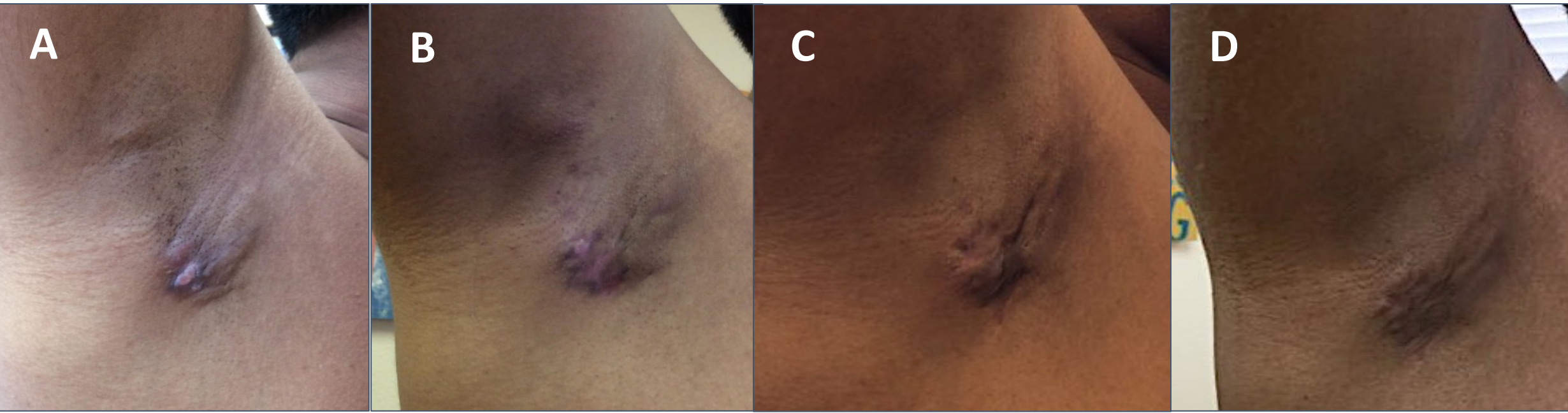


Figure 2. Results of Nd:YAG Laser Therapy of patient with HS Hurley Stage II in the right axilla. The patient was treated with a combination of Nd:YAG laser, Alexandrite laser, and chemical cauterization with silver nitrate when necessary for open wounds. **A.** Photograph of the lesion at the date of diagnosis **B-C.** Progression of the lesion with treatment **D.** Lesion at the end of treatment after 7 sessions and 13 months of treatment.

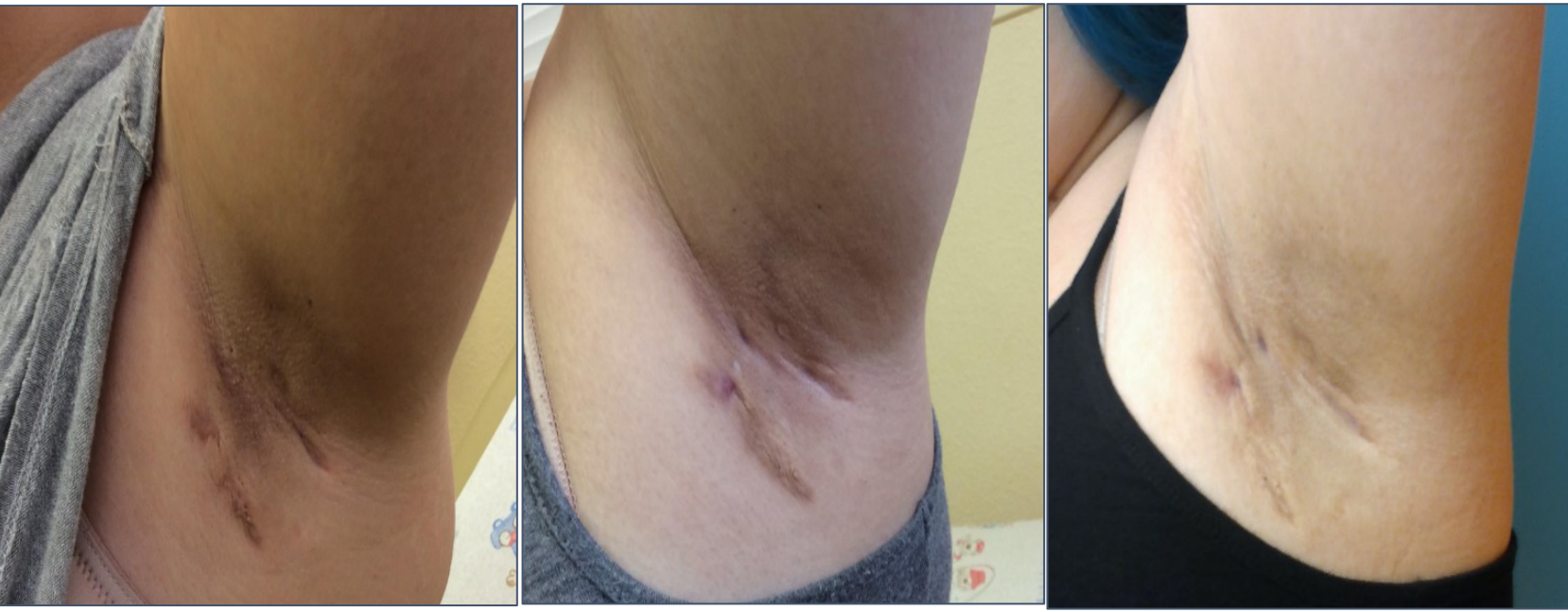


Figure 3. Results of Nd:YAG Laser Therapy of patient with HS Hurley Stage II in the axilla. **A.** Lesion at time of diagnosis. **B.** Lesion after 4 months. **C.** Finalized treatment after 15 sessions and 25 months of treatment.

Table 1. Demographics of HS patients			
Demographics		n= 95	
Sex			
Male	n, (%)	12 (11.6)	
Female	n, (%)	83 (87.4)	
Age at diagnosis, mean no. ± SD, years (IQR)		16.2 ± 3.1 (3)	
Age at disease onset, mean no. ± SD, years (IQR)		15 ± 3.3 (3)	
BMI Percentile, mean BMI (kg/m2)		32.7	
Mean weight (lb)		188.9	
Race			
Caucasian	n, (%)	37 (38.9)	
Black	n, (%)	49 (51.6)	
Hispanic	n, (%)	9 (9.5)	
Other	n, (%)	5 (4.2)	

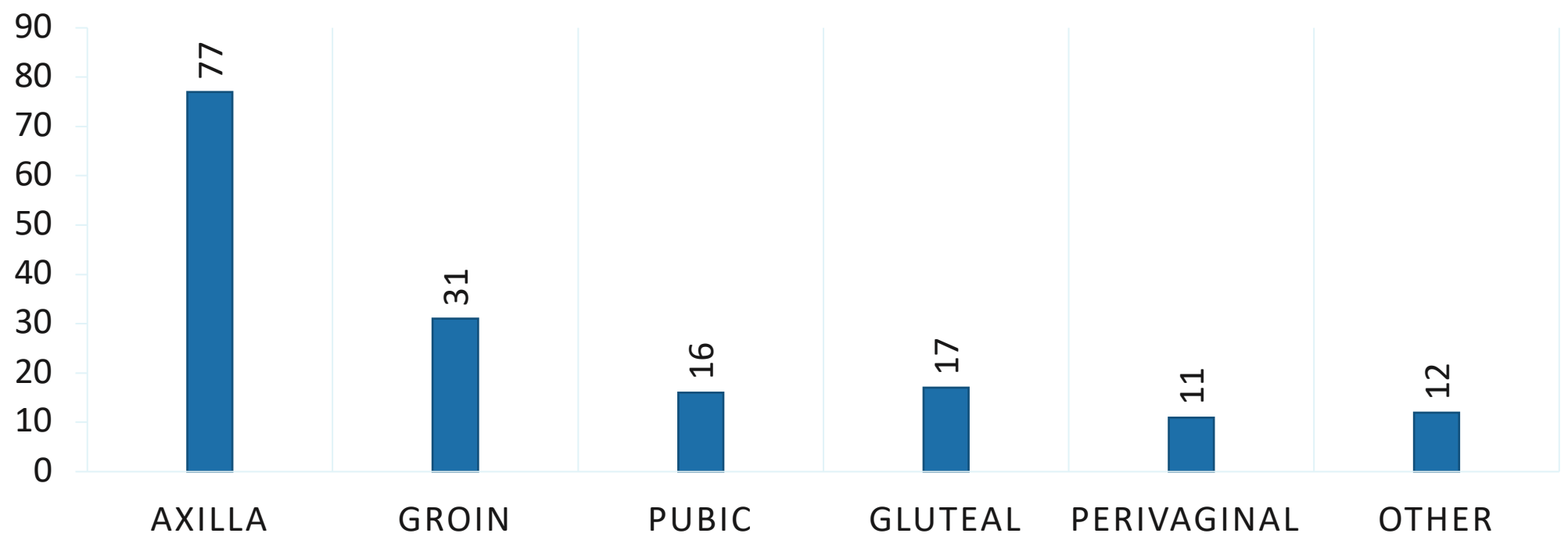


Figure 4. Locations of the HS Lesions.

Table 2. Laser Therapy	
Number of treatments, mean no. ± SD (IQR)	5.6 ± 4.2 (6)
Length of treatment, mean no. ± SD, months (IQR)	16.5 ± 10.9 (14)
Types of Treatments	
Only Nd:YAG	258 (49)
Nd:YAG & Silver Cauterization, n, (%)	156 (29)
Nd:YAG, Silver Cauterization, & Botox, n, (%)	67 (13)
Nd:YAG and/or Alexandrite Laser, n, (%)	15 (3)
Other, n, (%)	27 (5)
Treatment Completion, n, (%)	45 (52%)
Patient loss to follow up, n, (%)	27 (31%)
Patient with ongoing treatment, n, (%)	14 (16%)

DISCUSSION

- The Nd:YAG laser is an effective treatment of HS since it is able to penetrate superficial and deep layer of the skin by targeting hair shafts and follicles via absorption by melanin and water chromophores.¹²
- Adjunctive therapy to laser included the use of botulism toxin type A to control hyperhidrosis which worsens the flares of the HS patients. Additionally, chemical cauterization with silver nitrate was used to treat open wounds.
- The diagnosis of HS at the clinic was made, on average, 1.2 years after disease onset. Highlighting the ability of the physicians to successfully diagnose HS at the facility opposite to other studies that report a 7-year delay in diagnosis of HS. ^{3,6}
- Similar to other studies, we found a possible association with obesity and HS with the patients with a mean BMI of 32.7.
- The use of laser therapy could change the current algorithm of treatments for HS, especially on patients with Hurley Stage II classification of the lesions, while improving the quality of life. Increase usage of laser therapy might lead to decrease prescription of antibiotics for HS patients reducing the risk of side effects and systemic resistance.

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