



ORIGINAL RESEARCH PAPER

Surgery

HIDARDENITIS SUPPURATIVA – OUR EXPERIENCE TO IT'S MANAGEMENT

KEY WORDS: Hidradenitis Suppurativa, Surgical Management, Reconstruction

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ABSTRACT

BACKGROUND: Hidradenitis suppurativa (HS) is a chronic inflammatory disease, affecting the apocrine glands with significant physical and psychosocial sequelae. Surgical excision of the affected and reconstruction where appropriate may offer cure.
MATERIALS AND METHODS : 20 patients were included in the study, involving the axilla, Inguinal regions, buttock and breast. 9 male and 11 women treated by wide local excision and various options like primary closure, Split skin grafting, Local flap cover and Perforator flap. Follow up period was 6 months to 2 years.
RESULTS : All the patients underwent surgery for HS. Women are affected more than men by HS in this study. Axilla is the most common site of involvement. All patients showed disease remission with complete healing.
CONCLUSION: Surgery provides good aesthetic and functional results with complete remission of the disease. In moderate to severe disease or recalcitrant disease, multi-modality treatment is the choice.

Plastic surgeons are often confronted with inveterate skin lesions with recurrent inflammation and suppuration conditions that reduce the level of comfort for patients in daily life as a result of the difficulties of wound management. Hidradenitis suppurativa is one such condition. It's a chronic inflammatory skin disease that affects regions rich in apocrine sweat glands. The disease is typically non responsive to a range of medical therapy, and the mainstay of treatment remains surgical excision. We present herein our own experience with this disease, including preoperative, operative, and postoperative management.

The consensus definition adopted by the Hidradenitis Suppurativa (HS) Foundation in 2009 defines HS as “a chronic, inflammatory, recurrent, debilitating, skin follicular disease that usually presents after puberty with painful deep seated, inflamed lesions in the apocrine gland-bearing area of the body, most commonly, the axillary, inguinal and anogenital regions.”(1)

Hidradenitis suppurativa causes significant debility and morbidity in patients' professional lives (2), sexual health (3), body image (4), and overall quality of life (2,5). Reported disease prevalence has historically been reported from 0.03% to 0.41% (6), although more recent epidemiologic reports suggest global prevalence of 1% (7). Prevalence appears to be higher in females (3:1) and African Americans (8). The disease typically presents in the second or third decade of life (6). Cigarette smoking, obesity, and metabolic syndrome are known to be highly associated with the disease but have not been identified as true risk factors for developing HS (4, 7). Several studies have associated disease severity with body mass index (9, 10). Patients with HS report a family history in 30% to 40% of cases, although no clearly defined genetic link has been established (11).

Diagnosis is clinical and does not need tissue biopsy. Triad of typical lesions, characteristic distribution, and recurrence are enough for diagnosis (12)

Stages:
 Hurley staging system is the first staging system and still in use

depending on the subjective extent of the diseased tissue:
 Stage I: solitary or multiple isolated abscess formation without scarring or sinus tract.
 Stage II: recurrent abscesses single or multiple widely separated lesions with sinus tract formation.
 Stage III: diffuse or broad involvement across a regional area with multiple interconnected sinus tracts and abscesses (13).
 The Hurley staging classification is a useful tool to guide management.

Multiple methods of resection and wound closure have been described, but there is no consensus as to which one has the best outcome (14,15).

Historically, HS has been treated by many medical specialties (dermatologists, emergency medicine, infectious disease, and internists) and surgical specialties (general, plastics, colorectal, and gynecology) (16). Despite the number of medical specialties encountering HS, there is commonly a 5- to 14-year diagnostic delay from the onset of symptoms (17, 18). Often patients will receive sporadic care, only seeking treatment during flare-ups. For these patients, short-term success can be achieved; however, deep tunneling may progress and eventually no longer respond to conservative measures. Medical treatment options include topical and oral antibiotics (19-24) and immune modulators (23, 25). Surgical options include incision and drainage, ablative procedures, or wide local excision with or without primary closure (23-27). The ideal timing and extent of surgical intervention are difficult to judge and are typically individualized patient to patient. Studies are now showing that multimodal treatment therapies may improve patient outcomes (23,29). Use of biologics with surgery results in lower recurrence rates, less disease progression, and longer disease-free intervals at surgical sites than surgery alone (30), despite the theoretical impairment to wound healing they confer.

MATERIALS AND METHODS
 Between March 2014 and December 2019, 20 patients of Hidradenitis suppurativa, came to our department. 11 patients were female and 9 were male.

The age range was from 20 to 45 years, average being 33.5 years. Duration of illness ranged from 6 months to 5 years. The lesions included the buttock (N-3), axilla (N-10), inguinal region (N-5), and breast (N-2). The size of the lesions ranged from 1.5cms * 4 cms to 25cms * 40 cms. All patients had suppurative lesions that had already been treated with oral antibiotics, incision, drainage, and irrigation in other hospitals, but without satisfactory effect. The patients were followed up for a period of 6 months to 2 years. Of the 20 patients, 8 patients were in Hurley Stage 1, 8 patients in Hurley Stage 2 and 4 patients in Hurley Stage 3. Patient's with Hurley stage one and with 1 or 2 episodes are advised Lifestyle modification, Local and systemic antibiotic therapy, Weight Loss and Smoking cessation, Glycemic control and Avoidance of dairy products. Those with recurrent stage 1 and Stage 2 disease, undergo local and systemic antibiotic therapy and surgical excision of the lesion. Those with Hurley Stage 3 undergo radical resection and reconstruction. Recurrent and Recalcitrant Hurley stage 3 disease are given biologic therapy followed by surgical intervention. The surgeries that have been done include Incision and drainage, excision and primary closure, excision and split skin grafting, excision and local flap cover and excision and perforator flaps. The medical treatment include clindamycin topical and oral route, Tetracycline capsules, Rifampicin Capsules and in Recalcitrant cases, adjuvant biologic therapy with infliximab and steroids were given.

RESULTS:

There were 20 patients in our study, all of whom underwent surgery. Majority of the patients (80%) were on antibiotics at presentation. Immune modulators (Infliximab and steroids) were given in 20 percent of patients. 60 percent of patients had underwent surgeries like incision and drainage and excision, prior to coming to our institution.

The axilla was the most common site of involvement (50%), followed by inguinal region and buttock. It was common for patients to have more than one site of involvement (60%). Healing rates was not impacted due to multiplicity of sites.

8 patients underwent excision and primary closure (Fig 1a and 1b). 2 patients underwent excision and split skin grafting (Fig 2a and 2b). 6 patients underwent excision and local flap cover (Fig 3a and 3b) and 4 patients underwent excision and perforator flap (Fig 4a-d). All patients healed well. There were new lesions in different site in one patient.

DISCUSSION:

HS was first described by Velpeau in 1839 and then characterized as originating in sweat glands by Verneuil in 1854. Schiefferdecker linked HS with apocrine sweat glands in 1922. However, inflamed apocrine glands are found only when in proximity to other inflamed structures. The true etiology of HS is unknown. Current thought is that HS is a disorder of terminal follicular epithelium within apocrine gland-bearing skin. HS first presents as nodules that eventually coalesce. These nodules either resolve temporarily or progress. Eventually, they become infected, leading to sinus tract formation, multiple subcutaneous abscesses, persistent pain, and scarring. In the acute setting, the infected apocrine glands rupture and coalesce, creating subcutaneous abscesses that ultimately drain through sinuses. Chronically, the skin in the area of the affected apocrine glands become altered by inflammation and fibrosis.

Much of the literature treats surgical and nonsurgical management as different entities. The sporadic and unpredictable natural history of the condition results in inconsistent episodic care for many patients.

Neither Hurley score nor the number of sites involved were found to be a predictor of healing. The implication is that surgical intervention may have a role in certain patients regardless of extent or severity of disease. For many patients, closure may be

the right answer. Proponents of closure argue that, even if success is low, defects may be smaller and the morbidity of the resulting defects may be less.

Alternative option available for Hidradenitis suppurativa include Intense pulsed light therapy.

CONCLUSION:

Hidradenitis suppurativa remains a costly, devastating disease with significant psychosocial impact. While there is a variety of medical management available, surgical excision remains the mainstay of therapy. In patients whom medical control cannot be achieved, surgical treatment with ablative procedures results in acceptable levels of healing.

Sufficient resection of the lesion is the most important issue in treating hidradenitis suppurativa. In lesions that can be resected sufficiently, the covering procedure, such as primary closure, skin graft and flap, should be selected to suit the size and site of the defect.



Fig 1a ; Preoperative view of Hurley stage 1 groin lesion



Fig 1b: Postoperative view after excision and primary closure



Fig 2a: Preoperative view of Hurley stage 1 axillary lesion



Fig 2b: Postoperative view after excision and split skin grafting



Fig 3a: Preoperative view of Hurley stage 2 axillary lesion



Fig 3b: Postoperative view after excision and posterior arm flap



Fig 4a: Preoperative view of Hurley stage 2 axillary lesion



Fig 4b: Intraoperative view of Hurley stage 2 axillary lesion



Fig 4c: Intraoperative view of Thoraco-dorsal artery perforator flap



Fig 4d: Postoperative view of Thoraco-dorsal artery perforator flap

REFERENCES:

1. Besma BD, Boussema F, Aydi Z, et al. Hidradenitis suppurativa (Verneuil's disease). *J Saudi Soc Dermatol Dermatol Surg*. 2013;17:1-5.
2. Schneider-Burrus S, Jost A, Peters EMJ, et al. Association of hidradenitis suppurativawithbodyimage. *JAMA Dermatol*. 2018;154:447-451.
3. Kurek A, Peters EM, Chanwangpong A, et al. Profound disturbances of sexual healthinpatientswithacneinversa. *J Am Acad Dermatol*. 2012;67:422-428.e1.
4. Kohorst JJ, Kimball AB, Davis MD. Systemic associations of hidradenitis suppurativa. *J Am Acad Dermatol*. 2015;73:S27-S35.
5. Matusiak L, Bieniek A, Szepietowski JC. Hidradenitis suppurativa markedly decreases quality of life and professional activity. *J Am Acad Dermatol*. 2010;62: 706-708.e1.
6. Naldi L. Epidemiology. In: Jemec GBE, Revuz J, Leyden JJ, eds. *Hidradenitis Suppurativa* vol. 1. Berlin, Germany: Springer; 2006:58-64.
7. Revuz JE, Canoui-Poitrine F, Wolkenstein O, et al. Prevalence and factors associated with hidradenitis suppurativa: results from two case-control studies. *J Am Acad Dermatol*. 2008;59:596-601.
8. Revuz J. Hidradenitis suppurativa. *J Eur Acad Dermatol Venereol*. 2009;23: 985-998.
9. Vazquez BG, Alikhan A, Weaver AL, et al. Incidence of hidradenitis suppurativa and associated factors: a population-based study of Olmsted County, Minnesota. *J Invest Dermatol*. 2013;133:97-103.
10. Schrader AM, Deckers IE, van der Zee HH, et al. Hidradenitis suppurativa: a retrospective study of 846 Dutch patients to identify factors associated with disease severity. *J Am Acad Dermatol*. 2014;71:460-467.
11. von der Werth JM, Williams HC. The natural history of hidradenitis suppurativa. *J Eur Acad Dermatol Venereol*. 2000;14:389-392.
12. Medline Plus (2012). Hidradenitis suppurativa. U.S. National Library of Medicine. 2012.
13. Hurlley HJ. Axillary hyperhidrosis, apocrine bromhidrosis, hidradenitis suppurativa, and familial benign pemphigus: a surgical approach. In: Roenigk RK, Roenigk HH, eds. *Dermatologic Surgery*. New York: Marcel Dekker; 1989:729-739.
14. Scheinfeld N. Hidradenitis suppurativa: a practical review of possible medical treatments based on over 350 hidradenitis patients. *Dermatol Online J*. 2013;19:1.
15. Scott L, Stephen J, David M. The skin and subcutaneous tissue. In: *Schwartz's Principles of Surgery*. 8th ed. New York: McGraw-Hill Professional; 2005;15:439-485.
16. Sung S, Kimball AB. Counterpoint: analysis of patient claims data to determine the prevalence of hidradenitis suppurativa in the United States. *J Am Acad Dermatol*. 2013;69:818-819.
17. Saunte G, Boer J, Stratigos A, et al. Diagnostic delay in hidradenitis suppurativa is a global problem. *Br J Dermatol*. 2015;173:1546-1549.
18. Jemec CB, Kimball AB. Hidradenitis suppurativa: epidemiology and scope of the problem. *J Am Acad Dermatol*. 2015;73:S4-S
19. Mendonça CO, Griffiths CE. Clindamycin and rifampicin combination therapy for hidradenitis suppurativa. *Br J Dermatol*. 2006;154:977-978.
20. Bettoli V, Join-Lambert O, Nassif A. Antibiotic treatment of hidradenitis suppurativa. *Dermatol Clin*. 2016;34:81-89.
21. Fischer AH, Haskin A, Okoye GA. Patterns of antimicrobial resistance in lesions of hidradenitis suppurativa. *J Am Acad Dermatol*. 2017;76:309-313.e2.
22. Clemmensen OJ. Topical treatment of hidradenitis suppurativa with clindamycin. *Int J Dermatol*. 1983;22:325-328.
23. Saunte DML, Jemec GBE. Hidradenitis suppurativa: advances in diagnosis and treatment. *JAMA*. 2017;318:2019-2032.
24. Alhusayen R, Shear NH. Scientific evidence for the use of current traditional systemic therapies in patients with hidradenitis suppurativa. *J Am Acad Dermatol*. 2015;73:S42-S46.
25. Rambhatla PV, Lim HW, Hamzavi I. A Systematic review of treatments for hidradenitis suppurativa. *Arch Dermatol*. 2012;148:439-446.
26. Janse I, Bieniek A, Horváth B, et al. Surgical procedures in hidradenitis suppurativa. *Dermatol Clin*. 2016;34:97-109.
27. Mehdizadeh A, Hazen PG, Bechara FG, et al. Recurrence of hidradenitis suppurativa after surgical management: a systematic review and meta-analysis. *J Am Acad Dermatol*. 2015;73:S70-S77.
28. Danby FW, Hazen PG, Boer J. New and traditional surgical approaches to hidradenitis suppurativa. *J Am Acad Dermatol*. 2015;73:S62-S65.
29. Falola RA, DeFazio MV, Anghel EL, et al. What heals hidradenitis suppurativa: surgery, immunosuppression, or both? *Plast Reconstr Surg*. 2016;138:219S-229S.
30. Van Rappard DC, Mekkes JR. Treatment of severe hidradenitis suppurativa with infliximab in combination with surgical interventions. *Br J Dermatol*. 2012;167: 206-208.