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Diagnosis and management of hidradenitis suppurativa in women

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Abstract

Hidradenitis suppurativa is a chronic inflammatory disease that disproportionately affects women of childbearing age. Hidradenitis suppurativa is characterized by painful nodules, abscesses, draining dermal tunnels, and scarring with a predilection for intertriginous sites, such as the axilla, groin, and breast regions. Delay in diagnosis and treatment of hidradenitis suppurativa often results in long-term sequelae leading to significant morbidity, and rarely mortality, in these patients. This clinical opinion suggests that obstetrician-gynecologists are uniquely poised to recognize early signs of hidradenitis suppurativa during routine well-woman examinations and initiate treatment or referral to dermatology. Herein, we provide clinical pearls for obstetrician-gynecologists caring for female patients with hidradenitis suppurativa, including strategies for comprehensive management and recommendations to improve the comfort of patients with hidradenitis suppurativa during examinations.

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Keywords

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Introduction

Hidradenitis suppurativa (HS) is a chronic inflammatory disease with the potential to cause significant impairments to patients' health-related quality of life.[1] If left untreated, HS may lead to debilitating long-term sequelae, including genitourinary strictures, scarring, and squamous cell carcinoma.[1] A retrospective analysis of a US population-based sample reported the prevalence of HS to be 0.1%; sex-based estimates suggest that the average annual incidence of HS in women is 12.1 per 100,000, more than twice the average annual incidence in men (5.1 per 100,000).[2] Furthermore, HS disproportionately affects women and those from ages 30 to 39 years.[3] Our current prevalence data are likely underestimates given the significant delay in diagnosis and access to care that these patients face.[4] Underrecognition of this disease by frontline providers may be contributing to the delay in diagnosis, as a recent survey found that most patients visited a physician at least 5 times before receiving a diagnosis.[5]

In addition to diagnostic delay, patients with HS may also face fragmented care without a centralized care plan or principal provider.[6] Many patients with HS receive care from multiple different specialties, including general practitioners, obstetrician-gynecologists, dermatologists, surgeons, and emergency medicine physicians.[6] Studies have suggested that a collaborative model for HS management is optimal for patient care,[7] and inclusion of obstetrician-gynecologists within this integrative approach can further improve the care of female patients with HS.[8] A study by Stormo et al[9] found that obstetrician-gynecologists provided well-woman preventive care to 44% of women and that women under 50 years had a higher percentage of visits to obstetrician-gynecologists for women's preventive care than to primary care physicians. Thus, obstetrician-gynecologists are uniquely positioned to diagnose HS early, as many women present for annual examinations, and the groin, axilla, and inframammary regions are areas commonly affected by this disease. Herein, we provide clinical pearls for obstetrician-gynecologists caring for female patients with HS, including strategies to increase early diagnosis of HS and to optimize care for patients with HS during well-woman examinations.

Brief Overview of Hidradenitis Suppurativa

Updated pathogenesis

The exact pathogenesis of HS remains unclear. Historically, inflammation of the apocrine glands was implicated in HS pathogenesis. However, the current, most widely accepted understanding involves follicular plugging and dilation of the pilosebaceous unit, which leads to follicular rupture. Extrusion of follicular contents into the dermis causes a chemotactic inflammatory response, resulting in an influx of inflammatory cells leading to abscess formation. The cause of the initial inciting event of follicular plugging is still under debate, although genetics, immune dysregulation, hormonal fluctuation, and other

environmental risk factors are thought to play a role.[10] The immune dysregulation hypothesis is supported by evidence of elevated levels of proinflammatory cytokines in HS lesions, including tumor necrosis factor (TNF)-α, interleukin (IL)-1β, IL-12, IL-23, and IL-17. Other evidence suggests an alteration of the microbiome within HS lesions; bacteria released into the dermis following the rupture of pilosebaceous units lead to local inflammatory responses. These bacteria are difficult to eradicate and form biofilms that irreversibly bind to dermal tunnels and hair follicles, sustaining chronic inflammation.[11] Once the inflammatory process subsides, fibrosis, strictures, and scarring result.[1]

Clinical presentation

HS initially presents as tender papules and nodules that can progress to painful deep dermal abscesses, often with malodorous discharge. Recurrent flares are common, giving rise to the formation of dermal tunnels and scarring.[1] Typical areas of involvement are the intertriginous sites, including the axillary, mammary, vulvar, inguinal, perianal, perineal, buttock, posterior neck, and panniculus regions. The frequency of lesion localization varies between men and women. Compared with men, in whom perineal, perianal, and buttocks lesions are more common, women are more likely to have genitofemoral lesions and involvement of the sub- and intermammary folds.[12]

Approach to diagnosis

The diagnosis of HS is made on the basis of characteristic history and presentation on physical examination. Although histology and imaging modalities can help to support the diagnosis, no confirmatory test exists. Skin biopsies are generally not recommended[13] or needed for diagnosis unless there is a suspicion of malignancy. Therefore, a trained clinician can make the diagnosis of HS without further skin testing. When patients visit the obstetrician-gynecologist for pelvic or breast examinations, it is an opportune moment to examine these regions of the skin and inquire about symptoms in these areas. Patient complaints that may be indicative of HS include recurrent “folliculitis,” “boils,” or “acne lesions” in their groin region (Figure 1, A). Double-headed comedones may be present on examination (Figure 1, B).

Consensus-derived diagnostic criteria for HS include (1) typical lesions, (2) typical distribution, and (3) history of chronicity and recurrence (more than 2 times in 6 months).[14] The Hurley staging system categorizes patients into 3 groups of severity[1] (Figure 2).

There are other gynecologic conditions that can mimic HS lesions, including Bartholin cysts,[13] cutaneous Crohn disease, lymphogranuloma venereum,[15] granuloma inguinale, and squamous cell or verrucous carcinoma (Table 1). Therefore, close examination of patient’s lesions and maintaining a broad differential and high index of suspicion can aid in establishing the correct diagnosis. It is also helpful to evaluate for signs of other conditions that frequently occur in association with HS. Common cutaneous associations include acne vulgaris, acne conglobata (a highly inflammatory and severe form of acne characterized by comedones, papules, pustules, nodules, and abscesses),[19] pyoderma gangrenosum (an inflammatory skin disease characterized by painful nodules or pustules that develop into ulcers), pilonidal disease, and dissecting cellulitis of the scalp (a chronic inflammatory

disease that manifests as painful nodules and sinus tracts on the scalp that results in scarring alopecia). HS also has various systemic comorbidities that warrant targeted screening (Table 2) with appropriate examinations and laboratory investigations when patients present with HS.

Associated complications

Several complications may occur as a result of severe HS disease, many of which could potentially be prevented with early diagnosis and treatment of this condition. A Finnish study found the life expectancy of patients with HS (60.5 years) to be considerably less than that of patients with psoriasis and nevi (75.2 years). This difference is hypothesized to be due to chronic inflammation and its association with atherosclerosis and neoplastic development.[29] Local complications from progressive disease include genitourinary strictures and fistulas, genital lymphedema, limb contractures, and vulvar squamous cell carcinoma.[30] Delayed recognition of malignant transformation arising from HS lesions has resulted in death for some patients[31]; thus, thorough inspection of HS lesions is warranted. Systemic complications include sacral bacterial osteomyelitis, anemia of chronic disease, and systemic amyloidosis.[30] Serum amyloid A, an acute phase reactant, is produced in response to chronic inflammation giving rise to AA amyloidosis.[32] These long-term sequelae and others may be avoided with prompt diagnosis and treatment of HS.

Women's Health Issues Related to Hidradenitis Suppurativa

Women with HS face a number of unique challenges, including issues concerning menstruation, pelvic examinations, breast examinations, mammograms, and sexual health. Therefore, it is imperative that obstetrician-gynecologists are knowledgeable about the impact of HS on the female life course and are able to counsel patients on women's health-related issues. Furthermore, obstetrician-gynecologists may need to modify their routine examinations to minimize causing pain or discomfort in women with HS flares.

Menstruation

The hormonal fluctuations associated with menstruation give rise to variations in HS severity, with premenstrual disease flare commonly reported. Previous studies have found that between 44% and 63% of patients with HS have premenstrual flares.[33] Thus, obstetrician-gynecologists should consider asking questions pertaining to premenstrual flare to help guide management. Premenstrual HS flares are hypothesized to result from the decline in levels of estradiol and progesterone before the onset of menses. Progesterone suppresses the proliferation of CD4+ T cells and Th17 cells that are involved in the chronic inflammatory state of HS.[34] Studies have demonstrated that treatment with oral contraceptive pills (OCPs) may help to ameliorate these premenstrual HS flares. Current evidence suggests the use of contraception with high estrogen to progesterone ratios and use of less androgenic progestogens, such as norgestimate, desogestrel, drospirenone, or gestodene.[35,36] Anecdotal reports support the use of monophasic OCPs as opposed bi- or triphasic formulations. The higher prevalence of smoking and sedentary lifestyles in patients with HS[37] may increase the risk of a thromboembolic event for patients taking OCPs. Therefore, special care should be taken to inquire about these risk factors before initiating OCPs in this population. Spironolactone may also be considered for use in women with

premenstrual HS flares because of its antiandrogenic properties.[38] Both spironolactone and OCPs can be initiated by obstetrician-gynecologists for the management of women with mild-to-moderate HS who have perimenstrual disease exacerbation.

Pelvic examination and Papanicolaou test

Patients with HS should receive Papanicolaou test according to current screening guideline recommendations even if lesions are present. However, during times of HS flare, painful examinations are best rescheduled. Importantly, the speculum examination may be painful for women with vulvar or perineal HS. General practices to minimize discomfort should be exercised in these patients. Using water-based lubricating gel for the speculum examination reduces the patients' discomfort.[39] For women with extensive scarring or fistulae that have reduced size of the vaginal introitus, selecting a speculum that is smaller or narrower may help to minimize pain on insertion and opening. There are no reports in the literature specifically on best practices for speculum examinations in patients with vulvar HS; however, in cases of atrophic vaginitis and vaginal stenosis, liberal use of lubricant, ultranarrow specula (such as the Pederson speculum extra narrow), and topical lidocaine application have been considered beneficial.[40] Decreasing screening with or without human papillomavirus cotesting when appropriate, consistent with national guidelines, should also be considered.[41]

Applying topical agents to the areas of the skin that will be manipulated during the Papanicolaou test or pelvic examination, such as the vulva, may help with pain management. Ice packs, diclofenac sodium gel 1%, and xylocaine ointment 5% have all demonstrated efficacy for HS pain management in short-term use.[42] Cooling the topicals before application may offer some additional relief. The provider may also suggest that the patient take systemic agents for pain control before arriving at the clinic or may consider offering acetaminophen or nonsteroidal anti-inflammatory drugs at the start of the appointment. Variations in positioning may also be considered to avoid excess pressure on painful HS lesions, such as positioning patients with gluteal HS on their sides.

Breast examination and mammography

Pressure applied to the breast and axillae during the clinical breast examination may prove to be painful for women suffering from HS flares within those anatomic regions. The obstetrician-gynecologist may consider applying topical agents or providing systemic pain medications before the examination as mentioned above. Alternatively, the provider may consider rescheduling the clinical examination if the patient is experiencing severe pain.

Patients should undergo regular screening mammograms according to current guidelines. However, presence of mammary, inframammary, or axillary lesions may make this examination prohibitively painful for some women. Obstetrician-gynecologists can recommend systemic pain medications, use of radiolucent mammography pads during the examination,[43] or reschedule for when the patient is not flaring and the pain level is better controlled.

Sexual health

Patients with HS have been found to be more likely to suffer from sexual health issues than other women. A study by Kurek et al[44] found that female patients with HS experience increased sexual dysfunction and sexual distress compared with matched controls. In addition, a study by Sisic et al[45] found that individuals with HS were significantly more likely to report victimization from intimate partner violence. Therefore, it is important for women's health providers to screen patients with HS for these concerns. Obstetrician-gynecologists can counsel patients about having open communication with their partner and reassure them that HS is not a sexually transmitted infection. For women experiencing dyspareunia because of HS symptoms, suggesting the use of condoms and gentle lubrication to assist in minimizing the frictional pain of intercourse and referring the patient to a dermatologist for comanagement of HS symptoms may also be beneficial.

Lifestyle Recommendations

Comprehensive care for female patients with HS includes providing lifestyle recommendations that can improve patients' quality of life, such as clothing recommendations, menstrual care, axillary and pubic hair grooming practices, smoking cessation, and dietary modifications.

Clothing

Friction in intertriginous sites because of rough and irritating clothing has been implicated in the formation of HS lesions.[46] Appropriate selection of clothing can help to minimize mechanical friction on HS lesions. Soft fabrics made with 100% cotton, cellulose-derived rayon, or bamboo fibers that are loose fitting and breathable are most comfortable. Sports bras, camisoles with built-in wireless bras, and boy shorts are undergarment selections that can be suggested to patients to help minimize excess friction in the inframammary and subpannus regions.[47]

Menstrual care

Women with vulvar, perineal, or perianal lesions may experience discomfort from friction imposed by sanitary napkins. Providers can consider recommending the use of tampons[48] in lieu of pads to reduce pain, friction, and humidity in the area during menstruation. Plastic, round-tip tampons can be suggested to help minimize pain on insertion, and if the patient prefers panty liners, providers can recommend products that are fragrance-free (to reduce potential irritation or contact allergy) and made of soft, breathable materials, such as cotton. Consideration should also be given for extended regimen OCPs to decrease menstrual frequency.

Hair grooming

The role of shaving in HS development remains uncertain, although 1 study found that shaving was reported to be a disease-exacerbating factor by 13% of patients.[49] The associated friction from close shaving may also cause pain and discomfort in regions of HS lesions. Clipping hair short instead of shaving may reduce irritation. Patients who desire hair-free skin should be counseled to avoid shaving in regions of active flare and to consider

laser hair removal, although it is most effective for those with dark hair and fair skin types. Of note, the patient's insurance may cover laser hair removal as a treatment for HS. Depilatory creams may also be considered. Recommendations for gentle hypoallergenic deodorants can be provided for women experiencing malodor.

Tobacco

Studies have demonstrated that between 70% and 90% of patients with HS smoke, compared with 16% of the general population.[46] Therefore, smoking cessation should be highly encouraged for overall health by all providers caring for patients with HS.

Dietary modifications

Obesity is also a well-established risk factor for HS. Studies have shown a 1.2-fold increased risk of developing HS for every unit increase in body mass index.[50] This may be secondary to increased weight causing increased friction, which may contribute to the development of HS; in addition, adipocyte tissue promotes a subacute inflammatory state with increased secretion of proinflammatory cytokines, such as IL-1, IL-6, and TNF-α, which may increase keratinocyte proliferation and follicular occlusion.[51] Thus, weight reduction through exercise and dietary modifications should be encouraged. Pregnant women, who are expected to gain weight, should be counselled on benefits of appropriate weight gain. This will help to not only minimize HS disease flares but also to optimize overall health during pregnancy by lowering the risk of gestational diabetes.

Management

Treatment of mild disease can be initiated by obstetrician-gynecologists at the primary care level. However, referral to dermatology is recommended, even at this stage, for comanagement so patients can have a central provider to contact in case of disease flare or progression. Obstetrician-gynecologists are poised to prescribe topical treatments, oral antibiotics, and other adjuvant systemic therapies, such as oral zinc, OCPs, spironolactone, and metformin. For moderate and severe diseases, patients should be referred to dermatology for comanagement for evaluation for starting an immunomodulator or to initiate planning for surgical management (Figure 3, B). Table 3 provides a list of medical therapies and procedures for HS by severity. Obstetrician-gynecologists may also be comfortable performing procedures, such as intralesional steroid injections, incision and drainage (only recommended for acute pain relief given high recurrence rates),[38] and excisions on small localized HS lesions.

Conclusion

HS is a chronic, debilitating disease that disproportionately affects women of childbearing age. Many patients experience delays in diagnosis and appropriate care of their HS disease, which can be improved by increased early recognition by frontline providers of this disease, such as obstetrician-gynecologists. Early diagnosis and treatment will help to prevent the oftentimes severe complications and sequelae of severe disease. Female patients with HS also experience unique challenges related to menstrual care, Papanicolaou tests, and mammography. The practical recommendations provided will help women's health

providers to optimize care for female patients with HS. Further research is needed to determine the best strategies for women-specific HS management and see whether aggressive early diagnosis and management can change disease outcomes.

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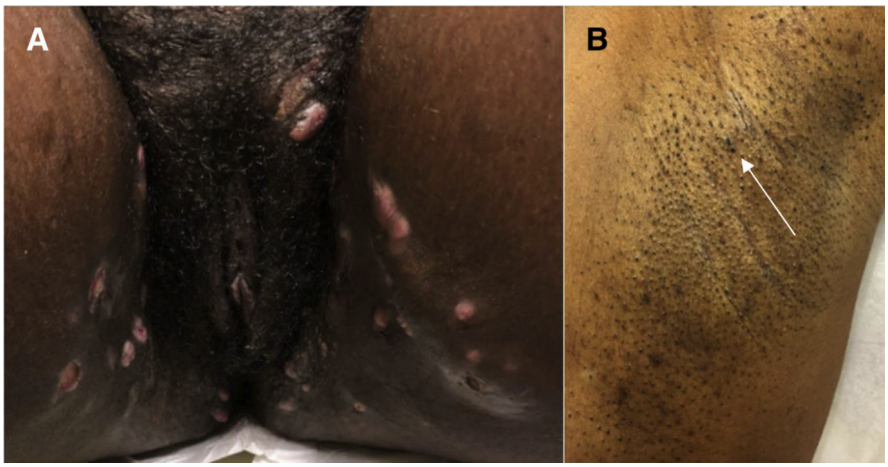

FIGURE 1. Eroded nodules, tunnels, and double-headed comedones of HS

A, Eroded nodules and tunnel openings on the mons, vulva, and medial thighs of a patient with hidradenitis suppurativa. **B,** Double-headed comedones in the axilla (*arrow*).

HS, hidradenitis suppurativa.

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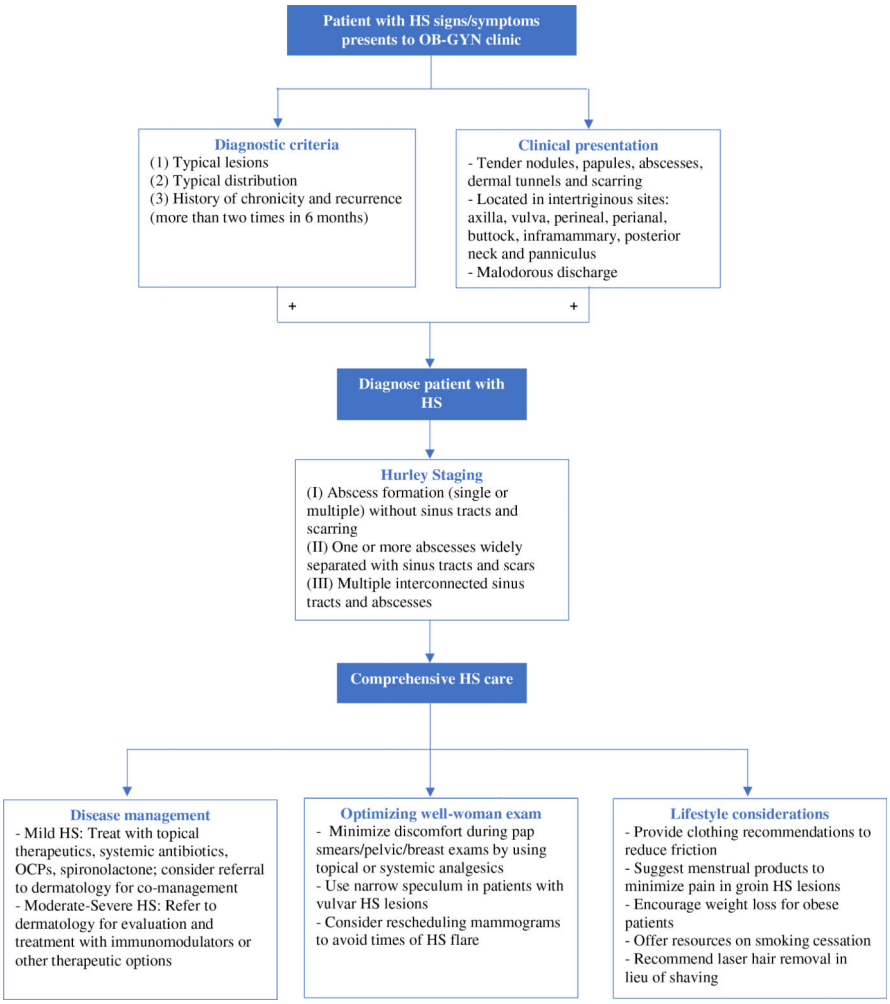

FIGURE 2. Schematic diagram: diagnosis and management of HS by obstetrician-gynecologists

HS, hidradenitis suppurativa.

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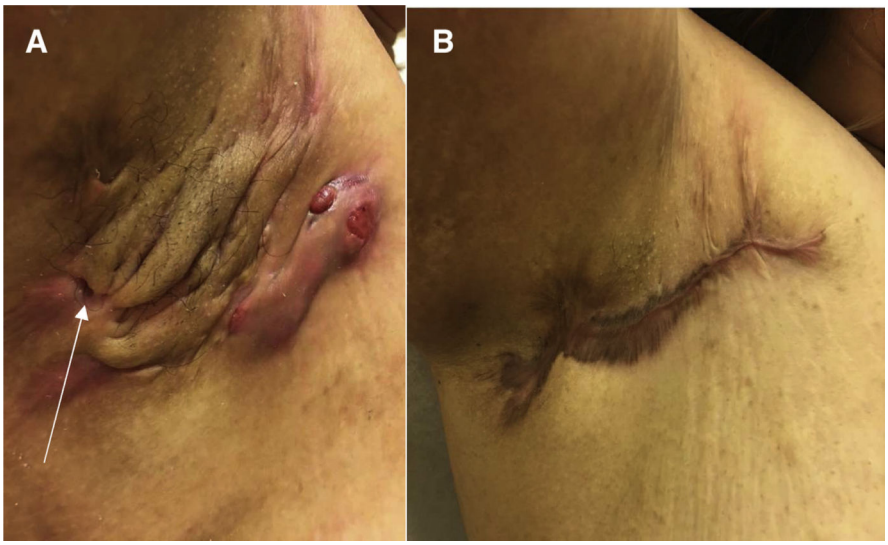

FIGURE 3. Hurley stage 3 HS: pre- and post-wide surgical excision

A, Hurley stage 3 HS with multiple interconnected sinus tracts and scarring in the right axilla (*arrow* pointing to opening of a sinus tract). **B,** Four months postwide surgical excision with secondary intention healing in the same patient.

HS, hidradenitis suppurativa.

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TABLE 1

Clinical differential diagnosis for vulvar hidradenitis suppurativa lesions

Condition	How to differentiate
Bartholin cysts	Classic location on the posterior introitus; lack of involvement of intertriginous folds
Cutaneous Crohn disease	Clinical symptoms of gastrointestinal disease; pelvic MRI[16]; lack of comedones on examination
Granuloma inguinale	Histologic examination of lesional tissue with characteristic Donovan bodies (safety pin–shaped intracytoplasmic organisms)[17]
Lymphogranuloma venereum	Tends to localize to the vulva only; laboratory testing (nucleic acid amplification tests) for *Chlamydia trachomatis* DNA to help differentiate[18]
Squamous cell or verrucous carcinoma	Histologic examination of lesional tissue showing squamous cell carcinoma or verrucous carcinoma

MRI, magnetic resonance imaging.

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TABLE 2

Common hidradenitis suppurativa comorbidities

Comorbidity	Recommendations for screening	Referrals
Metabolic syndrome[20]	Evaluate blood pressure (>130/85 mm Hg) and lipid panel (fasting TG>150 mg/dL, HDL cholesterol<50 mg/dL)[21]	Primary care
Diabetes mellitus[20]	Order glucose laboratory testing (fasting plasma glucose≥126 mg/dL) or HbA1c (≥6.5)[22]	Endocrinology
Polycystic ovarian syndrome[23]	Screen for hirsutism, acne, irregular menses; transvaginal ultrasound	Endocrinology
Inflammatory bowel syndrome[24]	Screen for diarrhea, bloody stool, abdominal pain	Gastroenterology
Inflammatory joint disease[25]	Inquire about morning stiffness and joint pain or swelling	Rheumatology
Substance use disorder[26]	Elicit patient history; urine toxicology screen for opioid or cannabis	Psychiatry and psychology
Depression[27]	Screen with PHQ-2[28,a]	Psychiatry and psychology

HbA1c, hemoglobin A1c; *HDL*, high-density lipoprotein; *PHQ-2*, Patient Health Questionnaire-2; *TG*, triglyceride.

[a]PHQ-2 is a first-step screen for depression with 2 questions: “Over the last 2 weeks, how often have you been bothered by the following problems? (1) Little interest or pleasure in doing things. (2) Feeling down, depressed, or hopeless.”

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TABLE 3

Management of hidradenitis suppurativa by disease severity

Disease severity	Treatment type	Treatment names[52]
Mild to moderate	Antiseptic washes	Benzoyl peroxide, chlorhexidine
	Topical treatments	Clindamycin, dapsone, resorcinol[a]
	Oral antibiotics[b]	Clindamycin, dapsone, doxycycline,[a,c] metronidazole, minocycline,[a] moxifloxacin, rifampin
	Hormonal therapies	Oral contraceptives,[a] finasteride,[a] metformin, spironolactone[a]
	Alternative medicine[53]	Magnesium sulfate salt bath, oral vitamin D, oral zinc
	Procedures	Deroofing (surgical or CO_2 laser), intralesional triamcinolone, incision and drainage (for acute relief only given high recurrence rates), local excision, Nd:YAG laser
Moderate to severe	Biologics	TNF-α inhibitors, adalimumab,[d] infliximab; interleukin (IL)-1 antagonist, anakinra; IL-12 and IL-23 inhibitor, ustekinumab; IL-23 inhibitor, guselkumab; IL-17 inhibitor, secukinumab
	Systemic antibiotics	Ertapenem
	Systemic immunosuppressants and immunomodulators	Apremilast, colchicine, cyclosporine, systemic steroids
	Retinoids	Acitretin,[a] isotretinoin[a,e]
	Procedures	CO_2 laser excision, wide surgical excision, deroofing

Nd:YAG laser, neodymium-doped yttrium aluminum garnet laser; *TNF-α*, tumor necrosis factor alpha.

[a] If not pregnant or actively trying to get pregnant

[b] Combinations of oral antibiotics may be used, such as clindamycin 300 mg twice a day+rifampin 300 mg twice a day (up to 12 weeks)[52]; rifampin+moxifloxacin+metronidazole (up to 8 weeks)

[c] Up to 100 mg twice a day[52]

[d] The only Food and Drug Administration–approved therapy for hidradenitis suppurativa

[e] Mixed results in the literature.[54]

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