SKIN

BRIEF ARTICLE

Ectopic Presentation of Hidradenitis Suppurativa on the Dorsal Foot with Secondary Bacterial Infection: A Case Report

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ABSTRACT

Background: Hidradenitis suppurativa (HS) is a chronic, relapsing inflammatory skin disorder most commonly affecting apocrine gland-rich regions such as the axillae, groin, and perianal areas. Ectopic HS, occurring outside these conventional sites, is exceptionally rare, particularly on the dorsal foot, with only two documented cases in the literature. Here, we present a third case of ectopic HS on the dorsal foot, complicated by secondary bacterial infection, and discuss its diagnostic and therapeutic implications.
Case Presentation: A 67-year-old male with a history of hypertension, hyperlipidemia, and a 57 pack-year smoking history presented with a five-day history of painful swelling on the left dorsal foot. Clinical examination revealed a violaceous, tender bi-nodular lesion without drainage. Notably, the patient reported a prior axillary lesion consistent with HS. Imaging revealed subcutaneous edema and a bilobed lesion; wound cultures isolated methicillin-sensitive *Staphylococcus aureus* (MSSA). Following surgical drainage and intravenous antibiotics, two deep tissue punch biopsies confirmed ulceration with suppurative inflammation. Clinical correlation supported a diagnosis of ectopic HS (Hurley stage I) with secondary infection. The lesion resolved fully by six-week follow-up.
Discussion: This case highlights the diagnostic challenges of ectopic HS, particularly in apocrine-deficient areas such as the dorsal foot. Prior axillary involvement, mechanical friction, and smoking likely contributed to pathogenesis. The presence of MSSA further complicated management, necessitating a multidisciplinary approach. Our findings reinforce a follicular occlusion-centered model of HS pathogenesis and highlight the need for clinician awareness of atypical presentations to facilitate early diagnosis and intervention.

INTRODUCTION

Hidradenitis suppurativa (HS) is a chronic, inflammatory dermatological condition characterized by the formation of painful nodules, abscesses, and sinus tracts.[1] A population-based study using data from a database of over 48 million patients in the United States reported an incidence rate of 11.4 per 100,000 individuals.[2] The precise etiology of HS remains uncertain, although genetic, inflammatory, and environmental factors are considered potential contributors. Typically, HS manifests in regions with a high density of apocrine glands, such as the axillae (most common site), inguinal area, inner thighs, perianal and perineal areas, mammary and inframammary regions, buttocks, pubic region, and scrotum.[3] In

contrast, ectopic HS represents a rarer presentation occurring outside these common anatomical sites.[4] To date, only two cases involving the dorsal foot have been documented in the literature.[5, 6] This report aims to elucidate another case of ectopic HS in the dorsal foot with a concomitant bacterial infection.

CASE REPORT

A 67-year-old male with a medical history of hypertension, hypercholesterolemia, benign prostatic hyperplasia (BPH), and osteoarthritis presented with left dorsal foot pain and nodular swelling persisting for approximately five days. The patient reported progressive worsening of redness, swelling, and pain in the affected area (**Figure 1**). There were no identifiable inciting events except for wearing tight shoes that rubbed against the dorsal foot. Furthermore, the patient mentioned a similar axillary lesion that had been surgically drained years prior. He denied experiencing fever, discharge, or other systemic symptoms. The patient noted an extensive history of cigarette smoking, quantified as 57 pack-years. He denied any allergies or relevant family history. The patient's home medications included amlodipine and hydralazine for hypertension, atorvastatin for hyperlipidemia, and tamsulosin for BPH.

On examination, the patient was alert, oriented, and vitally stable, with a body mass index (BMI) of 28.2, indicating overweight status. Dermatological assessment revealed a 3.0 x 1.0 cm bluish, violaceous, tender bi-nodular lesion on the left dorsal midfoot. Moderate-to-severe erythema and edema were observed without any open wound nor drainage. Vascular, neurological, and musculoskeletal examinations were within normal limits.

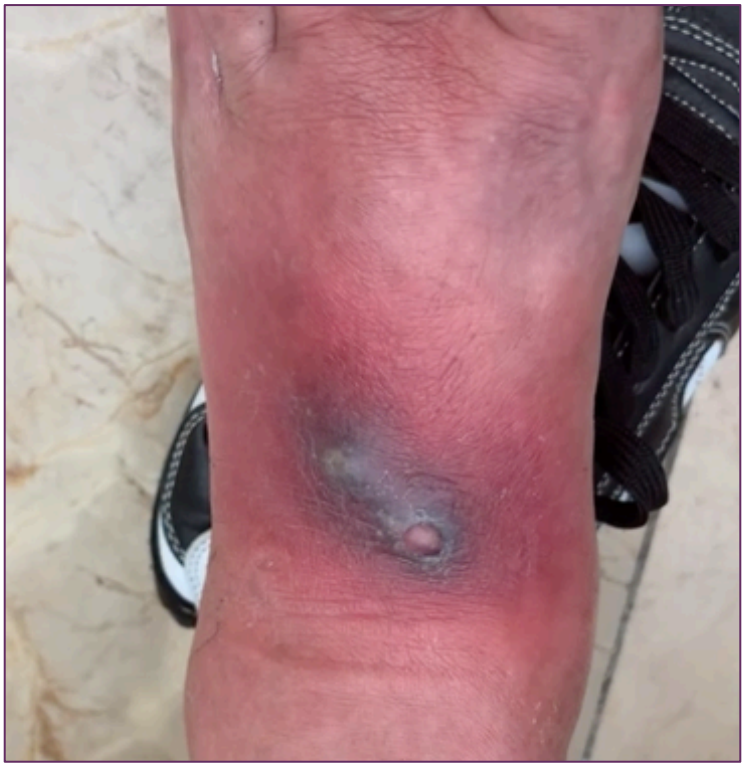

Figure 1. Initial emergency room presentation, notable for a central bi-nodular lesion with superimposed cellulitis.

Routine laboratory tests, including a complete blood count (CBC) and basic metabolic panel (BMP), were generally unremarkable. However, C-reactive protein (CRP) was elevated at 37.6 mg/L, and erythrocyte sedimentation rate (ESR) was 29 mm/hr, indicating inflammation. Radiological studies showed a pronounced, non-specific soft tissue shadow at the dorsal aspect of the foot. Vascular ultrasound with ankle-brachial index (ABI) and bilateral leg artery duplex was normal. Vascular ultrasound leg vein duplex was also normal. Computed tomography (CT) validated marked edema within the subcutaneous soft tissues around the foot and ankle, revealing a small bilobed lesion along the dorsal midfoot at the level of the tarsometatarsal joints and cuneiforms, measuring up to 2.7 cm anteroposteriorly by 2.5 cm transversely.

Immediate incision and drainage (I&D) were performed in the emergency department, revealing 5 mL of seropurulent discharge (**Figure 2**). Wound cultures were sent to the lab and identified methicillin-sensitive Staphylococcus aureus (MSSA), indicating a superimposed bacterial infection. The wound was irrigated with copious amounts of saline, packed with iodoform, and left open. Daily dressing changes with irrigation and repacking continued in the subsequent days. Further interventions included two deep tissue punch biopsies to exclude other pathologies. During the inpatient daily follow-ups, the lesion demonstrated gradual improvement in pain, resolution of erythema and swelling, and cessation of drainage. Biopsies revealed ulceration, suppurative mixed inflammation, and an inflamed serum crust. Histopathology suggested possible HS if clinically correlated.

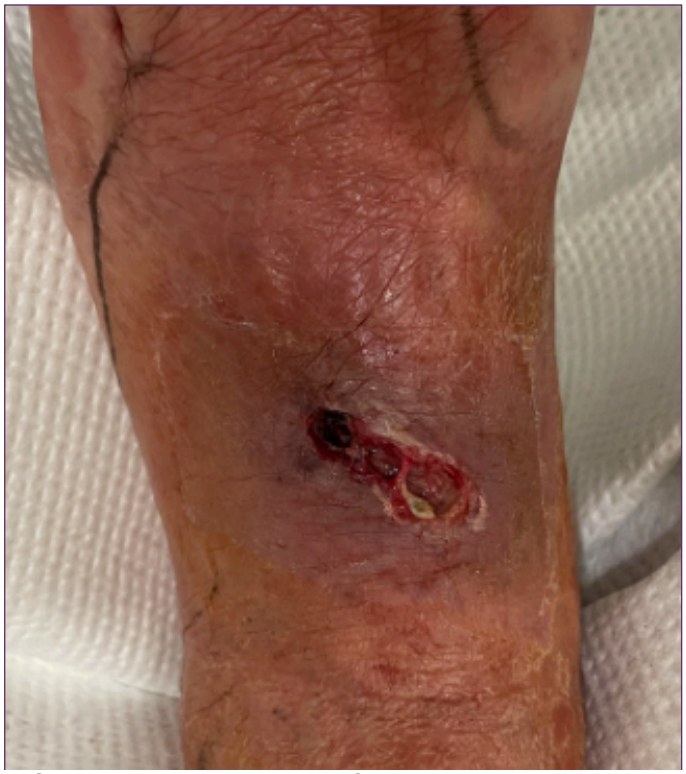

Figure 2. Clinical improvement after bedside incision and drainage.

Empirical treatment with vancomycin was initiated and later complemented with ceftriaxone upon noting worsening cellulitis. After five days of hospitalization, the patient was discharged with a seven-day course of oral sulfamethoxazole/trimethoprim for

MSSA coverage. Routine follow-up was maintained for six weeks after discharge. At the six-week mark, the patient was presented with a healed wound, without pain nor residual evidence of infection (**Figure 3**).

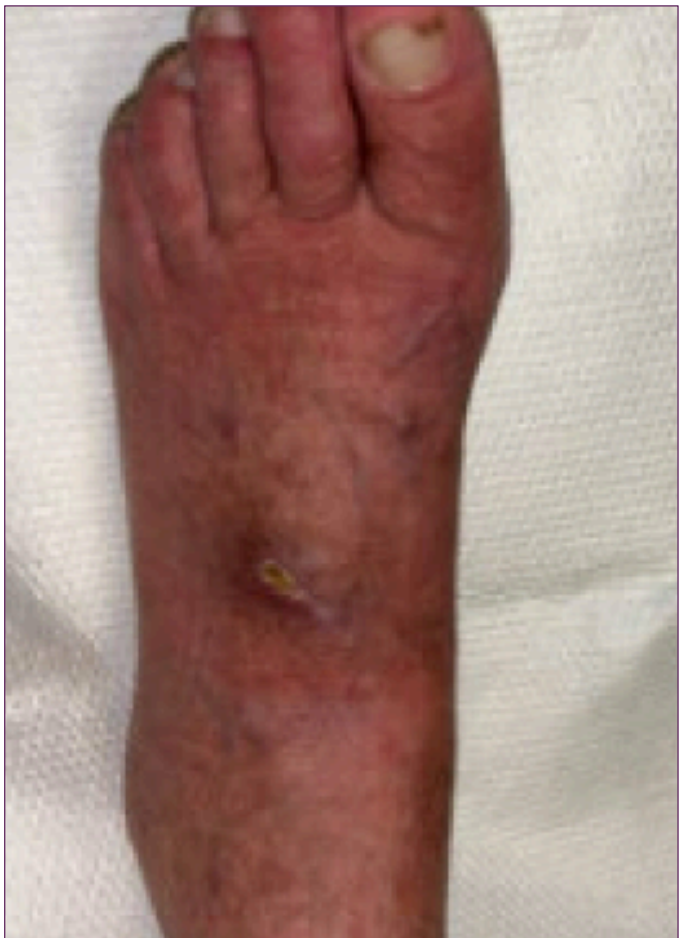

Figure 3. Six-week follow-up, with resolution of cellulitis and a stable dorsal nodule.

DISCUSSION

This case underscores the complexities encountered in the diagnosis and management of ectopic HS, particularly when complicated by a secondary bacterial infection and underlying abscess. The diverse phenotypic spectrum of HS can amplify diagnostic challenges, necessitating a comprehensive, clinically guided approach.[7] For a definitive diagnosis, the presence of typical HS lesions, their chronicity, and their recurrence in characteristic or atypical locations must be considered collectively.[8] Despite increased awareness, the average time to an HS diagnosis remains over seven years, reflecting the frequent delays and misclassifications associated with the disease.[4]

Our patient's diagnosis of ectopic HS was made clinically, with non-specific imaging and biopsy findings. His history of a prior axillary HS lesion, an apocrine-rich site, provided critical context to support a diagnosis of ectopic disease on the dorsal foot—a site devoid of apocrine glands. This clinical pattern is reflected in the two previously documented cases of dorsal foot HS. Rondags et al. reported a 28-year-old

male road worker with Hurley stage I HS active in the axillary, femoral, and perianal regions, who developed a painful ulcerative lesion on the dorsal foot. The lesion progressed despite antibiotic therapy, and surgical excision with a split-thickness skin graft was ultimately required. The authors attributed the ectopic presentation to occupational mechanical stress and rigid footwear, noting an absence of systemic infection or diabetes.[5]

Nisar et al. described a more severe case in a 53-year-old man with Hurley stage III HS affecting the perineum, gluteal folds, and inguinal region, who developed abscesses on the dorsal foot in the setting of active disease and poor wound healing. The patient had poorly controlled diabetes, malnutrition, and a heavy smoking history, and underwent multiple surgical excisions, including a colostomy and split-thickness grafting.[6]

By contrast, our patient—a 67-year-old male with a history of prior axillary HS, obesity (BMI 28.2), and a 57 pack-year smoking history—presented with localized Hurley stage I disease. His dorsal foot lesion was complicated by MSSA superinfection, necessitating prompt surgical drainage and intravenous antibiotics. Unlike prior reports, wound cultures confirmed active infection, which influenced both diagnosis and management.

Taken together, these three cases demonstrate that ectopic HS can occur in individuals with established disease in apocrine-rich regions and may be triggered by mechanical friction in predisposed areas such as the dorsal foot. Cigarette smoking was a shared risk factor across all cases, while mechanical stress from tight footwear or occupational strain was implicated in two. The variation in disease severity and required interventions—from local excision to complex reconstruction—underscores the importance of early recognition and individualized treatment strategies.

Our patient's presentation with inflammatory, double-nodule formation in the absence of sinus tracts and scarring aligned with Hurley Stage I. However, the superimposed MSSA infection complicated the clinical course and required timely surgical and antimicrobial intervention. The outcome was favorable, with full resolution at six-week follow-up.

While the etiology of HS has traditionally been linked to apocrine gland-rich sites, the presence of HS on the dorsal foot lends further support to the follicle-centered theory of pathogenesis. This model implicates follicular occlusion, rupture, and secondary immune activation as central to lesion development, relegating apocrine gland involvement to a bystander role. The location of our patient's lesion, in an apocrine-deficient region, exemplifies this shift in understanding.

Further research is needed to clarify the pathogenesis of ectopic HS, improve diagnostic criteria for atypical sites, and develop optimized management protocols for cases complicated by superinfection.

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