

## Case Report

# Ectopic hidradenitis suppurativa on the forearm following a workout challenge: a case report

Kennedy Sabharwal<sup>1\*</sup>, Emily Clarke<sup>2</sup>, Venessa Peña-Robichaux<sup>2</sup>

<sup>1</sup>Department of Medicine, University of Tennessee Medical Centre, Knoxville, Tennessee, United States of America

<sup>2</sup>Department of Dermatology, University of Texas at Austin Dell Medical School, Austin, Texas, United States of America

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### \*Correspondence:

Dr. Kennedy Sabharwal,

E-mail: [Ksabharwal@utmck.edu](mailto:Ksabharwal@utmck.edu)

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## ABSTRACT

Hidradenitis suppurativa (HS) typically affects intertriginous areas. Ectopic HS in uncommon locations is rare, often misdiagnosed, and poorly recognized in clinical practice. A 39-year-old African American woman with established Hurley stage III HS in typical locations (axillae, groin, buttocks) presented with a four-week history of a painful lesion on her left forearm. Her HS had been well-controlled on bimekizumab therapy. The ectopic lesion developed following a "plank challenge" workout, appearing at the pressure point where her forearm contacted the ground during planks, suggesting mechanical trauma as the triggering factor. This case represents ectopic HS, occurring in a patient with pre-existing typical HS. The forearm lesion likely resulted from the Koebner phenomenon, where repetitive mechanical trauma and friction led to ectopic HS development. Environmental factors such as secondhand smoke exposure may have contributed to pathogenesis. The lesion responded well to topical medications and intralesional steroid injections. Mechanical trauma can trigger ectopic HS through the Koebner phenomenon in patients with established disease. Physicians should maintain high suspicion for ectopic HS when patients with known HS develop new lesions in atypical locations following trauma or repetitive friction.

**Keywords:** Hidradenitis suppurativa, Ectopic hidradenitis suppurativa, Koebner phenomenon, Mechanical trauma, Bimekizumab, Case report

## INTRODUCTION

Hidradenitis suppurativa (HS) is a chronic, inflammatory skin disorder characterized by recurrent, painful nodules, abscesses, and tunnels, predominantly affecting intertriginous areas.<sup>1,2</sup> Although HS typically affects flexural areas, HS can rarely present in ectopic or atypical locations, which is less frequently described in the literature. These ectopic lesions may mimic other inflammatory or infectious dermatoses, leading to misdiagnosis and delays in management.<sup>3</sup>

Mechanical stress, friction, obesity, smoking, and underlying genetic susceptibility have all been implicated as contributors to HS pathogenesis, and evidence suggests the Koebner phenomenon may play an important role in ectopic disease.<sup>3</sup> Understanding the spectrum of ectopic HS presentations is essential, as these patients may require an alternative diagnostic approach, and may benefit from further counseling regarding risk modification. This case report describes an ectopic HS lesion on the forearm following a "plank challenge" workout in a patient with a long history of Hurley stage III HS. This highlights the importance of recognizing mechanical trauma as a potential driver of ectopic HS and

stresses the need for awareness of this unusual presentation.

## CASE REPORT

A 39-year-old African American woman with a history of Hurley stage III HS involving the axilla, groin, and buttocks presented for a four-week history of a painful lesion on the left forearm (Figure 1A). Her HS had been stable with bimekizumab injections every four weeks for the past several months after previously failing numerous other biologics. Prior to her presentation, she participated in a social media “plank challenge,” where she would hold a plank for at least thirty seconds multiple times per week. Shortly after beginning this workout challenge, she noted a painful, non-healing lesion on the left forearm along the pressure point during her planks. This was likely a result of mechanical trauma to the area from her “plank challenge” that led to Koebnerization and an ectopic focus of her HS. This new ectopic HS lesion was managed with topicals and intralesional steroid injections (Figure 1B). Currently, she remains on bimekizumab and her HS is stable. The patient is no longer planking and avoids friction or trauma to the area. She has not experienced recurrence in the region to date.



**Figure 1: (A): Scarred linear tunnel of HS on left forearm prior to intralesional triamcinolone; (B) scarred linear tunnel of HS on left forearm ~12 weeks after intralesional triamcinolone.**

## DISCUSSION

HS typically manifests in intertriginous areas; however, ectopic, or atypical HS, defined as lesions in uncommon areas often with few or absent apocrine glands, represents a rare subset of this condition. Ectopic lesions are often misdiagnosed as other inflammatory or infectious conditions, leading to delays in treatment, so recognition of the condition, typical patient population, and predisposing factors is paramount. In a recently published article, we proposed that ectopic HS can be divided into two categories: “classic” ectopic HS and “de novo” ectopic HS, which are clinically distinct populations.<sup>1</sup> Patients with classic ectopic HS have a history of typical

HS in intertriginous regions whereas patients with de novo ectopic HS do not.<sup>1</sup> Our patient would be considered a classic ectopic HS case due to her longstanding history of HS affecting typical areas. Ectopic HS has several key differences when compared to typical HS. For patients with ectopic HS, there appears to be a later age of onset (mean onset at 40 years old) and increased rate of males affected when compared to traditional HS, which predominantly affects younger females.<sup>1,2</sup> Ectopic HS can involve more body sites than typical HS including the head and neck, trunk, genitals, and extremities, though it appears to be most common on the head and neck.<sup>1,2</sup> Ectopic HS can also occur in areas of prior injury or scar, including surgical scars and amputation sites.<sup>1</sup> Smoking is one of the most common comorbidities for patients with both types of ectopic HS, though may be particularly important in the development of the classic type.<sup>1,2</sup> Diabetes has also been proposed as a triggering factor for ectopic HS, but may be more commonly associated with the de novo type.<sup>1</sup> Other comorbidities include obesity, thyroid disease, psoriasis, pyoderma gangrenosum, polycystic ovarian syndrome, depression/anxiety, hypertension, and other follicular disorders such as pilonidal disease and acne.<sup>1,2</sup>

Ectopic HS is particularly notable for its association with mechanical trauma, highlighting the Koebner phenomenon as a potential contributing mechanism. The Koebner phenomenon occurs when mechanical stress or trauma leads to the development of new lesions on previously normal skin. This phenomenon is well-known in conditions such as psoriasis and vitiligo, but emerging evidence suggests it may play a role in the development of ectopic HS.<sup>3-7</sup> Repetitive friction and pressure may lead to increased hyperkeratosis and follicular plugging, creating an ideal environment for ectopic HS to form.<sup>7</sup> Ectopic HS, similar to typical HS, may also be more likely in obese patients due to an increase in these contributing forces.<sup>6</sup> Additionally, mechanical trauma is posited to act synergistically with a patient’s underlying genetic and immunologic predisposition to developing HS.<sup>1-6</sup> The Koebner phenomenon may be part of the mechanism for the development of our patient’s ectopic HS on the forearm after the “plank challenge” due to repeated pressure and friction to this area. Similar cases have described HS lesions forming along surgical scars, at waistbands, or in areas of friction on obese abdomens, emphasizing the potential of mechanical trauma to cause HS in atypical locations.<sup>3-7</sup> These examples demonstrate the importance of obtaining a detailed history of physical activities and possible mechanical triggers when patients present with HS lesions in atypical areas.

Environmental factors may also contribute to the development of atypical presentations of HS such as ectopic lesions. Both smoking and smoke exposure have been shown to exacerbate HS by increasing proinflammatory cytokines and suppressing NOTCH signaling.<sup>8</sup> Smokers also have poorer responses to first-line treatments and less favorable overall outcomes than

non-smokers.<sup>9</sup> Although our patient was not a smoker, she was regularly exposed to secondhand smoke from a household member, which may have played an important role in the pathogenesis of her ectopic HS.

Ectopic HS can be diagnosed clinically, though diagnosis may be more challenging given this entity can mimic other more common infectious or inflammatory dermatologic conditions, including cysts, skin and soft tissue infections, or carbuncles. This diagnostic challenge may lead to further delays in accurate diagnosis and appropriate management. Once diagnosed, treatment for ectopic HS is like typical HS, including topical medications, intralesional injections, oral antibiotics, biologics, immunomodulators, laser treatments, and surgical procedures. If it is possible to minimize trauma and friction to areas of ectopic HS, this may help decrease flares. Patients should be advised to reduce or stop smoking and to avoid secondhand smoke exposure given its association with ectopic HS<sup>1</sup> and the challenges it may cause for effective management with first-line therapies.<sup>9</sup> Surgical treatment for ectopic HS may prove to be a promising treatment modality given the localized nature of ectopic foci. Our patient had an excellent response to topical medications and intralesional steroid injections, though surgical options may be considered if the area is recalcitrant to treatment.

## CONCLUSION

This case highlights how something as simple as repeated pressure during a workout can trigger ectopic HS in a patient with known disease. When HS appears in unexpected places, it is easy for these lesions to be mistaken for other conditions, which can delay the correct treatment. Recognizing possible mechanical triggers, asking about daily habits and activities, and helping patients understand ways to reduce friction or pressure can make a meaningful difference. Our case adds to the growing recognition that ectopic HS is its own clinical subset and underscores the important role that trauma may play in driving HS in certain patients.

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