



Rapid-onset ulcerative hand nodule

Was this an infectious abscess, or something less common?

A 55-YEAR-OLD WOMAN developed a small red papule on her left hand that, over the course of a week, progressed rapidly into an ulcerated nodule with accompanying swelling and pain. She reported concomitant fatigue, unintentional weight loss, and swollen axillary lymph nodes. Past medical history included rheumatoid arthritis.

A physical examination of her left hand revealed a tender, erythematous to violaceous nodule with ulceration and crust and surrounding diffuse erythema and edema (FIGURE). She also had several enlarged, non-

tender right axillary lymph nodes. Initial lab evaluation was significant for leukocytosis (13.8 K/uL) with increased neutrophils, lymphocytes, and eosinophils. Two punch biopsies were performed and the samples submitted for hematoxylin and eosin (H&E) staining and tissue culture.

- WHAT IS YOUR DIAGNOSIS?
- HOW WOULD YOU TREAT THIS PATIENT?

FIGURE

Ulcerated nodule with accompanying swelling



IMAGE COURTESY OF THE EMERGENCY DEPARTMENT STAFF AT PENN STATE HERSCHEY MEDICAL CENTER

The patient had an erythematous to violaceous nodule with ulceration and crust on her left hand and surrounding diffuse erythema and edema.

Madelaine Fritsche, MD;
Christopher Bazewicz, MD;
Matthew Helm, MD
Department of Medicine,
University of South Florida,
Tampa (Dr. Fritsche);
Department of Dermatology,
Penn State Hershey Medical
Center, Hershey, PA
(Drs. Bazewicz and Helm)

mhelm2@pennstatehealth.psu.edu

DEPARTMENT EDITOR

Richard P. Usatine, MD
University of Texas Health,
San Antonio

The authors reported no potential conflict of interest relevant to this article.

doi: 10.12788/jfp.0634

Diagnosis: Neutrophilic dermatosis of the dorsal hands

The results of H&E were consistent with neutrophilic dermatosis of the dorsal hands (NDDH). Tissue culture was negative for fungus, bacteria, and atypical mycobacteria, confirming the diagnosis.

NDDH is a neutrophilic dermatosis and considered a localized variant of Sweet syndrome, manifesting on the dorsal hands as suppurative, erythematous to violaceous papules, plaques, or nodules that often undergo necrosis, blistering, and ulceration. The diagnosis can be made clinically, although a biopsy is usually performed for confirmation. It is characterized histologically by a dense dermal neutrophilic infiltrate along with dermal edema.¹

■ **The pathogenesis of NDDH** is not fully known.² It is often preceded by trauma and may be associated with recent infection (respiratory, gastrointestinal), inflammatory bowel disease, autoimmune disease (eg, rheumatoid arthritis), or malignancy.¹ The most common associated malignancies are hematologic, such as myelodysplastic syndrome, leukemia, or lymphoma, although solid tumors also can be seen.^{1,3} Therefore, patients who receive a diagnosis of NDDH typically require further work-up to rule out these associated conditions. NDDH is a rare enough entity that incidence/prevalence data aren't available or likely to be accurate.

The differential includes infection and neoplastic processes

NDDH often is mistaken for an infectious abscess and unsuccessfully treated with antimicrobial agents, such as those commonly used for staphylococcus and streptococcus skin and soft-tissue infections. Thus, wound or tissue culture may be considered to exclude infection from the differential diagnosis. In addition to infectious processes such as sporotrichosis or an atypical mycobacterial infection, the differential includes other neutrophilic dermatoses and neoplastic processes such as lymphoma or leukemia cutis.

■ **Sporotrichosis** is caused by *Sporothrix schenckii* and usually spreads proximally after entering through a wound or cut. Special stains

on histology and culture are needed to make the diagnosis.

■ **Atypical mycobacterial infections** usually enter through an area of trauma and spread proximally after inoculation. Atypical mycobacterial infections can be diagnosed via biopsy with special stains, culture, and polymerase chain reaction of the tissue.

■ **Neutrophilic dermatoses** are a broad category of dermatoses that include NDDH, pyoderma gangrenosum, and Sweet syndrome. This category of dermatoses is differentiated by morphology and distribution of lesions.

■ **Lymphoma** can be primary cutaneous or secondary to a systemic lymphoma. A biopsy will show a collection of atypical lymphocytes.

Treatment begins with steroids

Treatment with topical (eg, 0.05% clobetasol ointment bid), intralesional (10 to 40 mg/mL triamcinolone acetonide), or systemic (eg, prednisone 0.5 to 1 mg/kg tapered over the course of 1-2 months) steroids is considered first-line therapy and often results in rapid clinical improvement. Agents such as dapsone (25 to 150 mg/d) and/or colchicine (0.6 mg bid to tid) may be used in recalcitrant cases or in patients for whom steroids are contraindicated.²

Our patient's NDDH was treated with prednisone (~1.0 mg/kg daily tapered over the course of 6 weeks). She was referred to Hematology/Oncology for further work-up of her constitutional symptoms, lymphadenopathy, and leukocytosis. Ultimately, she received a diagnosis of concomitant chronic lymphocytic leukemia/small lymphocytic lymphoma. The patient required no immediate treatment for her indolent lymphoma and was advised that she would need to get blood work done on a regular basis and have annual check-ups. **JFP**

References

1. Walling HW, Snipes CJ, Gerami P, et al. The relationship between neutrophilic dermatosis of the dorsal hands and Sweet syndrome: report of 9 cases and comparison to atypical pyoderma gangrenosum. *Arch Dermatol.* 2006;142:57-63.
2. Micallef D, Bonnici M, Pisani D, et al. Neutrophilic dermatosis of the dorsal hands: a review of 123 Cases. *J Am Acad Dermatol.* 2019;S0190-9622(19)32678-7. doi: 10.1016/j.jaad.2019.08.070
3. Mobini N, Sadrolashrafi K, Michaels S. Neutrophilic dermatosis of the dorsal hands: report of a case and review of the literature. *Case Rep Dermatol Med.* 2019;2019:8301585. doi: 10.1155/2019/8301585

➤ **NDDH often is mistaken for an infectious abscess and unsuccessfully treated with antimicrobial agents.**