

## CLINICAL IMAGE

**A solitary red nodule on the wrist: bacillary angiomatosis in a patient with lymphoplasmacytic lymphoma**Lisa Ishii, MD<sup>1</sup> and Alan S. Boyd, MD<sup>1,2</sup><sup>1</sup>Department of Dermatology, Vanderbilt University Medical Center, Nashville, TN, USA<sup>2</sup>Department of Pathology, Vanderbilt University Medical Center, Nashville, TN, USA

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**CASE PRESENTATION**

A 54-year-old male with well-controlled human immunodeficiency virus (HIV) presented with fevers and a red nodule on the wrist. Two weeks previous, he was scratched by his cat. His medical history included lymphoplasmacytic lymphoma (LPL) with Waldenstrom macroglobulinemia.

A solitary 1.7cm red nodule was present on the right wrist (Figure 1). He was febrile to 103°F.

A complete blood count showed baseline anemia and thrombocytopenia. The complete metabolic panel was unremarkable. His CD4+ T-cell count was 466 cells/mm<sup>3</sup> (reference 410-961 cells/mm<sup>3</sup>), and his HIV viral load was undetectable. Historically, the patient's CD4 nadir was 274 cells/mm<sup>3</sup>.

The patient underwent shave removal of the visible nodule. Histopathologic examination of the nodule demonstrated diffuse dermal vascular proliferation (Figure 2). Gram, Gomori methenamine silver, acid-fast bacillus, and human herpesvirus-8 stains were negative. There was focal uptake within the dermis with Warthin-Starry stain (Figure 3). Tissue and blood cultures were negative.

Polymerase chain reaction (PCR) from the tissue sample was positive for *Bartonella henselae* DNA, consistent with a diagnosis of bacillary angiomatosis (BA). The patient was started on a 3-month course of doxycycline. At his follow-up appointment one month later, he continued to be afebrile. The biopsy site healed with a circular scar without recurrence.



Figure 1. Solitary 1.7cm red nodule

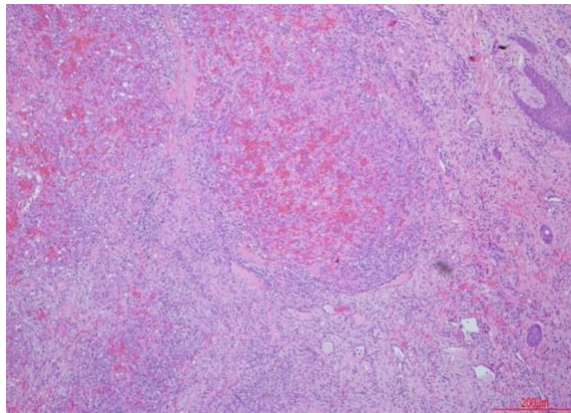


Figure 2. Histopathologic examination of the nodule

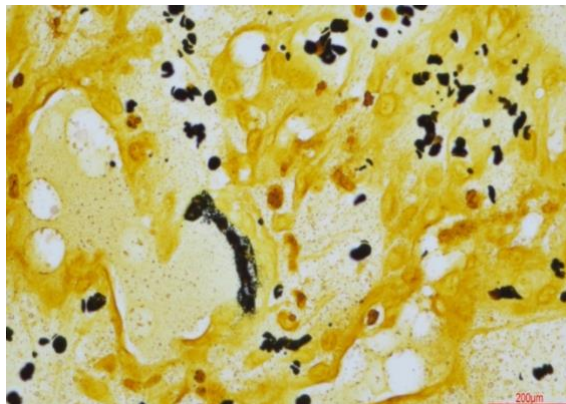


Figure 3. Warthin-Starry stain

## DISCUSSION

Bacillary angiomatosis (BA) is caused by infection with *B. henselae* or *B. quintana*, and presents as cutaneous bright red papules, subcutaneous nodules, or ulcers. Systemic dissemination may occur with fever, malaise, and visceral organ involvement. *B. henselae*

is a zoonotic organism with domestic cats being the main reservoir.

BA mainly presents in HIV-infected individuals with CD4+ T-cell counts of 100-200 cells/ $\mu$ l. BA is also seen in patients immunosuppressed due to hematologic

malignancies, most commonly chronic lymphocytic leukemia.<sup>1,2</sup>

The diagnosis of BA is challenging. Visualization of the organisms with Warthin-Starry or silver stains can be employed.<sup>3</sup> Enzyme-linked immunosorbent assays also have been utilized.<sup>4</sup> PCR-based assays provide a timely and highly specific modality to detect *B. henselae* in tissue specimens.<sup>5</sup> A combination of diagnostic techniques may be needed to establish the correct diagnosis.

BA caused by *B. henselae* is typically treated with doxycycline or macrolide antibiotics. While the cutaneous lesions begin to improve within 1 week of antibiotic therapy, typically at least 3 months of treatment is recommended.

This patient's case was complicated due to his concomitant diagnosis of LPL, which can cause systemic B symptoms and immunosuppression independent of his HIV status.

Providers should consider BA in immunocompromised patients with fever and angiomatous lesions, particularly in patients with hematologic malignancies. Confirmation of the diagnosis with biopsies and various modes of testing is instrumental in early treatment initiation.

#### Notes

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