

# Syphilis imitating urticarial vasculitis

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**A** 27-year-old previously healthy woman presented with a 2-month history of recurrent raised pruritic erythematous plaques resembling urticaria that persisted for more than 24 hours (Figure 1). She was otherwise asymptomatic, with no history of fever or mucosal lesions. Previous treatments with orally administered H<sub>1</sub> antihistamines and corticosteroids were ineffective. Skin biopsy showed perivascular inflammatory cell infiltration with some nuclear debris and swelling of endothelial cells involving postcapillary venules, whereas plasma cell infiltration was nearly absent (Appendix 1, Supplementary Figure 1, available at [www.cmaj.ca/lookup/suppl/doi:10.1503/cmaj.190469/-/DC1](http://www.cmaj.ca/lookup/suppl/doi:10.1503/cmaj.190469/-/DC1)). Direct immunofluorescence showed the deposition of complement and fibrinogen around blood vessels and in the dermal-epidermal junction, consistent with urticarial vasculitis. However, complement levels were unremarkable, and the C1q solid-phase test for immune complexes was negative, excluding hypocomplementemic urticarial vasculitis. Autoantibodies associated with connective tissue diseases were not detected.

Serologic tests for HIV, hepatitis B virus and hepatitis C virus were negative; however, the rapid plasma reagin test was positive (titer, 1:128), and the *Treponema pallidum* hemagglutination assay was reactive. Furthermore, immunohistochemistry with anti-*Treponema* antibody showed marked invasion of *Treponema* into the epidermis, indicating that the skin lesions were caused by syphilis and confirming the diagnosis of secondary syphilis (Appendix 1, Supplementary Figure 2). With orally administered amoxicillin (6 g/d) and probenecid (1 g/d) for 4 weeks, the skin lesions resolved. This effective combination of drugs is used in Japan, as intramuscular benzathine penicillin is not available.<sup>1</sup>

Syphilis is still prevalent, with increasing incidence worldwide.<sup>2</sup> Typical dermatologic findings of secondary syphilis are nonpruritic diffuse macules or papules with palmoplantar involvement; however, the rash can be quite variable.<sup>2</sup> Syphilis imitates various skin diseases, such as drug eruptions, psoriasis, pityriasis rosea and many others, making diagnosis challenging.<sup>3</sup> This case highlights the importance of considering serologic testing for syphilis when patients present with skin lesions that may be atypical for syphilis. Furthermore, skin biopsy and immunohistochemistry with anti-*Treponema* antibody are useful for diagnosing cutaneous lesions of secondary syphilis,<sup>4</sup> which may otherwise be misdiagnosed as a nonspecific rash.



**Figure 1:** Raised pruritic erythematous plaques resembling urticaria in a 27-year-old woman with secondary syphilis.

## References

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