Syphilis Presenting in the Axillary Lymph Node

Kevin Benny, DO[1], Pooja Agrawal, MD[1], Suimin Qui, MD, PhD[2], Angelica Robinson, MD[3]
HCA Houston Healthcare Kingwood, University of Texas Medical Branch (UTMB) Department of Pathology, UTMB Department of Radiology

Introduction

- Syphilis, a sexually transmitted infection caused by the bacterium *Treponema pallidum*, progresses through primary, secondary, and tertiary stages.
- In the primary stage, it typically manifests as a solitary or multiple painless genital chancres, with tender/painless lymph node swelling.
- If untreated, it can advance to secondary syphilis, characterized by a skin rash, muscle pain, hepato/splenomegaly, and lymphadenopathy.
- Tertiary syphilis, occurring months or years after the initial infection, can include cardiovascular syphilis, neurosyphilis, or gummatous cutaneous syphilis.
- This case illustrates a presentation of syphilis with a rash and generalized lymphadenopathy, confirmed through laboratory testing and a US-guided core needle biopsy of an abnormal appearing level 1 axillary lymph node.

Objective

- A 39-year-old woman presented with a pruritic, erythematous rash on her upper trunk and bilateral lower extremity edema, persisting for six weeks despite the use of cetirizine and furosemide.
- Follow-up in one week revealed a worsening rash spreading to her lower extremities, ophthalmalgia, painful lower extremity edema, and new-onset tender lymphadenopathy in the axillary, inguinal, post-auricular, and popliteal regions.
- Bilateral axillary lymphadenopathy was found on breast ultrasound, with a left level 1 axillary node biopsy revealing spirochete organisms, confirming secondary syphilis (FTA-ABS and Syphilis IgG/IgM reactive).
- Due to a penicillin allergy, she received doxycycline but had persistent syphilitic uveitis.
- Once desensitized to penicillin, she received IV penicillin for 3 weeks, leading to improved symptoms without recurrence.

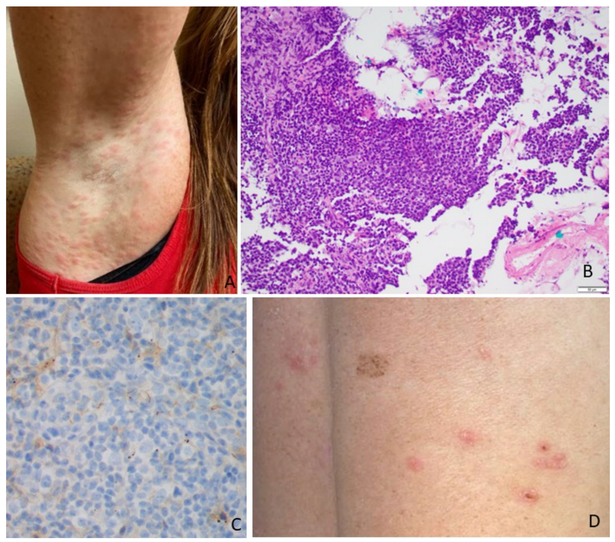

Fig. 1A: Axilla and portion of arm notable for diffuse polymorphic rash.
1B: Needle biopsy of reactive axillary lymph node with ill-formed granuloma.
1C: Immunohistochemistry with anti-Treponema pallidum antibody.
1D: Skin rash after treatment.

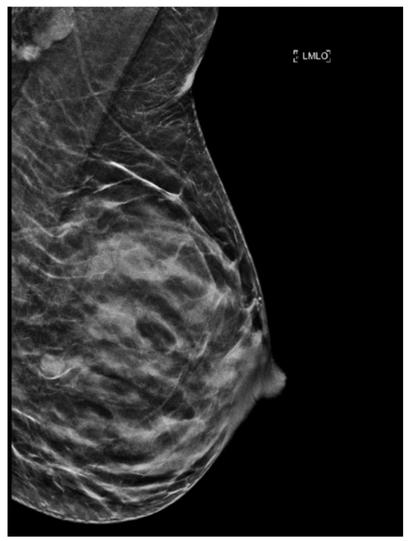

Fig. 2: Left MLO view reveals multiple lymph nodes with cortical thickening.

Fig. 3: Ultrasound of the left breast showing multiple level 1 axillary lymph nodes with cortical thickening measuring up to 7 mm.

Discussion

- The varied presentation of syphilis makes diagnosis challenging.
- Serologic testing, including nontreponemal (RPR, VDRL, TRUST) and treponemal tests (FTA-ABS, TP-EIA), along with darkfield microscopy to visualize spirochetes, is essential for diagnosis.
- Treatment depends on the disease stage, with intramuscular benzathine penicillin G being the primary choice for primary, secondary, and early latent syphilis. Neurosyphilis requires IV penicillin G, while tertiary syphilis is treated with weekly IM benzathine penicillin G. Alternatives exist for penicillin-allergic patients.
- This case is unique due to several reasons.
  - Firstly, it presented diagnostic difficulty since the patient did not disclose a history of primary syphilis and initially presented with vague, generalized symptoms.
  - Additionally, syphilitic lymphadenopathy often presents in the inguinal lymph nodes and is not commonly observed in the axillary lymph nodes as seen in this patient.
  - This case represents the importance of including secondary syphilis in the differential of a patient that presents with axillary lymphadenopathy.

This research was supported (in whole or in part) by HCA Healthcare and/or an HCA Healthcare affiliated entity. The views expressed in this publication represent those of the author(s) and do not necessarily represent the official views of HCA Healthcare or any of its affiliated entities.