IMAGES IN HOSPITAL MEDICINE

A Rash That Cannot Be Missed: Disseminated Herpes Zoster as a Result of Immunomodulation by Adalimumab

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CASE PRESENTATION

The patient is a 75-year-old Caucasian male who was admitted in May for management of a penile ulceration and a generalized rash. He has a medical history of Type II Diabetes Mellitus, tobacco abuse, and Rheumatoid Arthritis (RA) on adalimumab. One week prior to his presentation, the patient noted an ulcer proximal to the glans penis (Figure 1). Upon further questioning, he reported noticing a small tick attached to his thigh one week prior. He has no history of sexually transmitted illnesses, incarceration, animal exposures, or meningeal signs.

Two days prior to admission, the patient developed a large, dark, vesicular lesion on the anterior scalp, followed by smaller lesions over the rest of his body including the hard palate (Figures 2-6). Laboratory studies demonstrated a mildly elevated Erythrocyte Sedimentary Rate, C-Reactive Protein, and transaminitis. The patient was started on empiric doxycycline and intravenous acyclovir. Infectious work-up was negative for gonorrhea, chlamydia, syphilis, HIV, Ehrlichia, and Rocky Mountain Spotted Fever. Shave biopsies were obtained of the penile lesion and a lesion from the patient's upper back. Dermatopathology evaluation demonstrated herpetic dermatitis in both sites, and a penile swab polymerase chain reaction for Varicella Zoster Virus was positive. Treatment for disseminated Herpes Zoster was initiated with marked improvement of the lesions noted at follow-up.

CASE DISCUSSION

A 2008 Centers for Disease Control and Prevention Report on Herpes Zoster provided a summary of risk factors. The risk factors identified included age over 50, female gender, Caucasian race, and altered immunocompetence (1). Tumor Necrosis Factor α (TNF-α) inhibitors have become a mainstay of therapy for patients with moderate to severe RA. There is an association with TNF-α inhibitors, specifically adalimumab, and Herpes Zoster. In 2009, a retrospective cohort study examined 20,816 patients with RA. The study concluded that patients with RA who were taking TNF-α inhibitors were at a significantly higher risk of developing Herpes Zoster as compared to those who were prescribed sulfasalazine and hydroxychloroquine (2). These findings were also confirmed in a 2009 prospective cohort study which evaluated 5,040 patients with moderate to severe RA. It concluded that the

use of TNF-α inhibitors, specifically adalimumab and infliximab, were associated with a statistically significant increased incidence of Herpes Zoster when compared to other TNF-α inhibitors (3).

In patients that present with a disseminated vesicular rash on immunomodulating therapies, disseminated Herpes Zoster should be considered and treatment with IV acyclovir should be started promptly if appropriate.

Notes

Ethics Approval: Care was taken to ensure that the patient identifiers were removed in the process of creating this manuscript.

Competing Interests: The authors declare that they have no competing interests.

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Authors' Contributions: TP and EK worked to format and create the manuscript that was prepared for submission and performed a literature review for this project. TN worked to assist with editing of the manuscript and worked to perform a literature review for this manuscript. DD worked to assist in editing of this manuscript as well as with the formatting of this manuscript. All authors were involved in the care of the patient being discussed.

References

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2. McDonald, J.R., et al., *Herpes zoster risk factors in a national cohort of veterans with rheumatoid arthritis.* Clinical Infectious Diseases, 2009. 48(10): p. 1364-1371.
3. Strangfeld, A., et al., *Risk of herpes zoster in patients with rheumatoid arthritis treated with anti TNF-α agents.* Jama, 2009. 301(7): p. 737-744.

IMAGES AND FIGURES

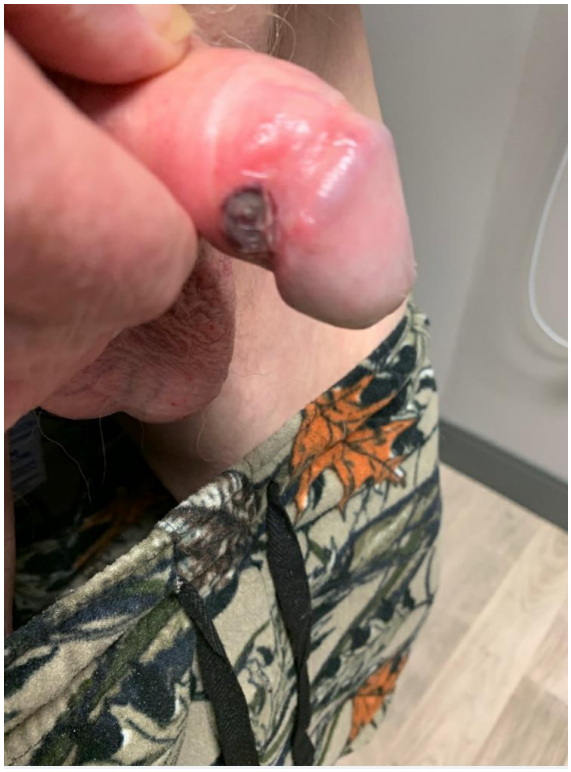

Figure 1: Gray-based penile ulcer with surrounding secondary bacterial cellulitis.

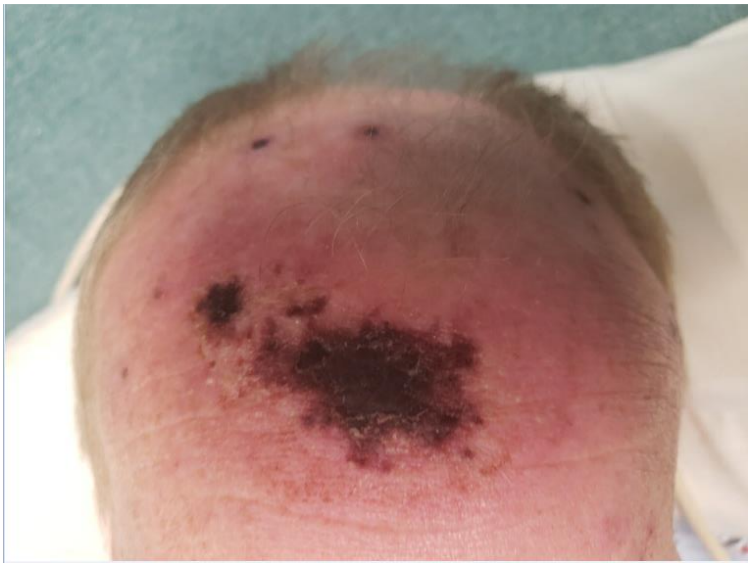

Figure 2: Anterior scalp lesion with eschar and peripheral vesicular lesions.

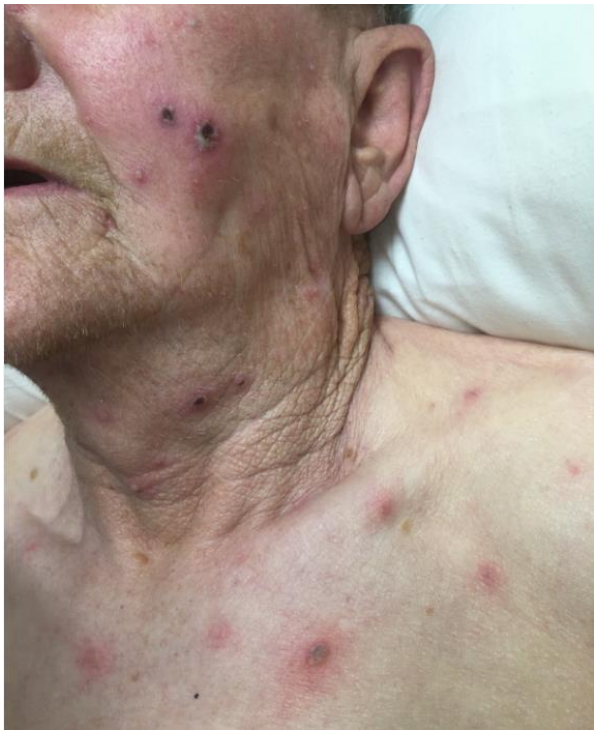

Figure 3: Scattered lesions with central eschar over the anterior chest, neck, and face.

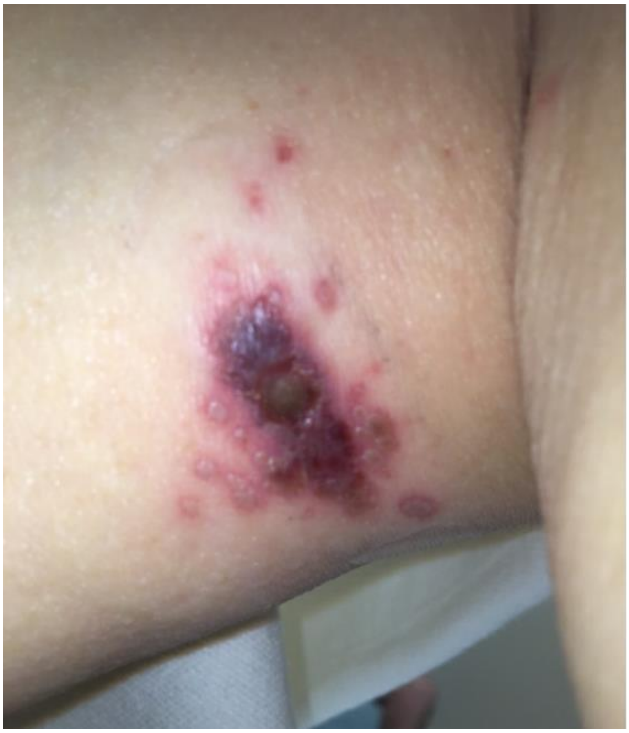

Figure 4: Hemorrhagic vesicular lesion of the posterior thigh.

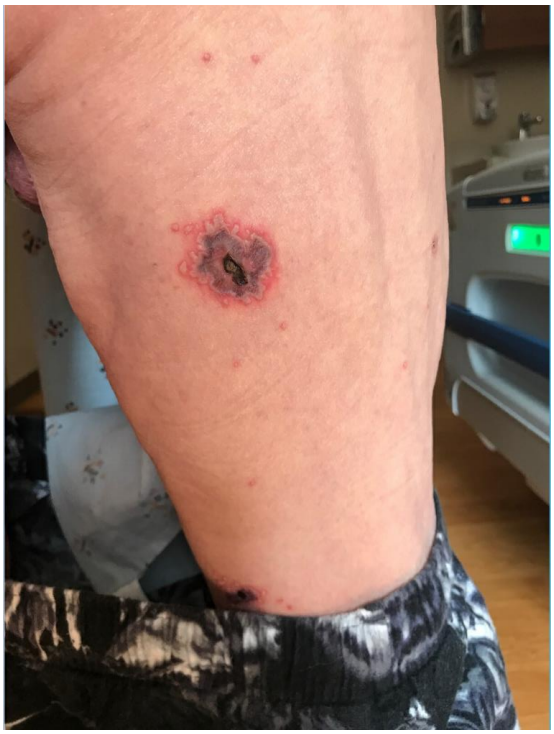

Figure 5: Unusual lesion on the left leg, with peripheral vesicles and central eschar.

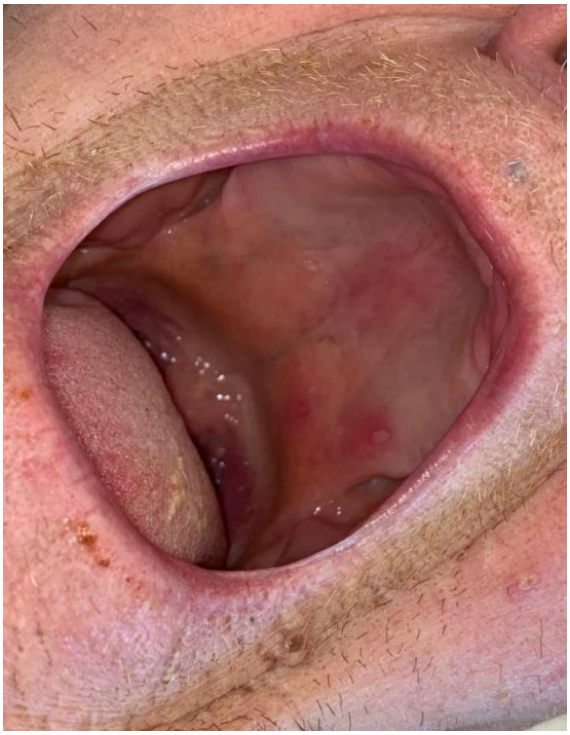

Figure 6: Two ulcers on hard palate.