Disseminated Mycobacterium Tuberculosis with Ulceronecrotic Cutaneous Disease Presenting as Cellulitis

Kelly L. Reed DO
Lehigh Valley Health Network, Kelly_L.Reed@lvhn.org

Nektarios I. Lountzis MD
Lehigh Valley Health Network, Nektarios_I.Lountzis@lvhn.org

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Disseminated *Mycobacterium Tuberculosis* with Ulceronecrotic Cutaneous Disease Presenting as Cellulitis

**Kelly L. Reed, DO and Nektarios Lountzis, MD**
**Lehigh Valley Health Network, Allentown, Pennsylvania**

**Case Presentation:**

**Patient:** 83 year-old Hispanic female

**History of Present Illness:** The patient presented to the hospital for chest pain and shortness of breath and was treated for an NSTEMI. She was noted to have redness and swelling involving the right lower extremity she admitted to having for 5 months, which had not responded to multiple courses of antibiotics. She resided in Puerto Rico but recently moved to the area to be closer to her children. Our dermatology service was consulted for evaluation of the lesions. Her medical history was pertinent for chronic low dose systemic corticosteroids for polymyalgia rheumatica. She denied fever, cough, night sweats, fatigue or other systemic symptoms.

**Medical History/Surgical History:** polymyalgia rheumatica, coronary artery disease, diabetes mellitus type 2, hypertension, atrial fibrillation, asthma, hyperlipidemia

**Social History:** >100 pack year smoking history

**Current Medications:** prednisone 5mg, quinapril, pravastatin, albuterol inhaler, fluicasone inhaler, aspirin, insulin glargine, diltiazem

**Physical Examination:** Aeolobite with multiple red to purple painful indurated plaques associated with pitting edema extending along the right lower extremity and foot in a geographic distribution. Over the course of two weeks, the lesions became progressively necrotic and ulcerated. The left leg and remainder of skin exam was unremarkable.

**Laboratory Data:** QuantiFERON TB Gold - positive

**Biopsy:** Health Network Labs (S14-32700, 09/25/14) Right lateral upper leg: “Neutrophilic and focally granulomatous dermatitis.” Acid fast stain- negative

**Tissue Culture:** (09/25/14) Left lateral upper leg: Mycobacterium tuberculosis complex (10/02/14) Bronchial lavage lung left upper lobe: Mycobacterium tuberculosis complex

**Imaging:** Chest x-ray (09/25/14) Well-circumscribed opaque nodules in bilateral lungs

**Diagnosis:** Disseminated Mycobacterium tuberculosis

**Treatment:** Topical wound care and quadruple antibiotic therapy with rifampin, isoniazid, ethambutol, pyrazinamide and the bacilli Calmette-Guérin (BCG) vaccine have been reported to cause cutaneous disease. Cutaneous tuberculosis infections account for <1-2% of all cases of TB and most often affects immunocompromised hosts due to HIV infection or medications, such as TNF-α inhibitors and corticosteroids.

Clinical presentation is extremely variable and is dependent upon the route of infection and the bacterial load in lesions. Exogenous inoculation often causes a tuberculid reaction to BCG versus cutaenaus, while endogenous spread causes scrubulderma, miliary TB or lupus vulgaris. Tuberculids are reactive conditions, which include papulonecrotic tuberculids, lupus vulgaris and erythema induratum. Tuberculous cellulitis, as our patient developed, is an uncommon presentation and does not fit neatly into the aforementioned categories.

**Discussion:**

Cutaneous tuberculosis (CTB) was first described in the literature in 1826 by Laennec and has since been reported to manifest in a variety of clinical presentations. The most common cause is infection with the acid-fast bacillus *Mycobacterium tuberculosis* via direct implantation of mycobacterium into the skin, secondary to endogenous spread (hematogenous or direct extension of mycobacterium to the skin from an internal source, typically lung), or as a cutaneous reaction known as a tuberculid (reactive eruption without the presence of mycobacaterium in the skin). Occasionally M.bovis and the bacilli Calmette-Guérin (BCG) vaccine have been reported to cause cutaneous disease. Cutaneous tuberculosis accounts for <1-2% of all cases of TB and most often affects immunocompromised hosts due to HIV infection or medications, such as TNF-α inhibitors and corticosteroids.

Clinical presentation is extremely variable and is dependent upon the route of infection and the bacterial load in lesions. Exogenous inoculation often causes a tuberculid reaction to BCG versus cutaenaus, while endogenous spread causes scrubulderma, miliary TB or lupus vulgaris. Tuberculids are reactive conditions, which include papulonecrotic tuberculids, lupus vulgaris and erythema induratum. Tuberculous cellulitis, as our patient developed, is an uncommon presentation and does not fit neatly into the aforementioned categories.

**References:**