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Case Presentation

Mycobacterium chelonae infection presenting as recurrent cutaneous and subcutaneous nodules – a presentation previously diagnosed as Weber Christian disease

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Abstract

Although the dermatologic community rarely uses "Weber-Christian Disease" as a diagnosis, it still appears in the internal medicine literature. Herein we present a patient with recurrent cutaneous and subcutaneous nodules who was initially treated with aggressive immunosupression for a presumptive diagnosis of Weber-Christian Disease. After more than a decade the patient was diagnosed with cutaneous *Mycobacterium chelonea*. This case is an excellent example of the difficulty in diagnosing mycobacterial infections and underscores the importance of having a high suspicion for infectious etiologies for unresponsive cutaneous eruptions in patients on immunosuppressive medications.

Key Words: Weber-Christian, immunosuppression, iatrogenic, panniculitis, Mycobacterium chelonae

Case synopsis

A woman in her 50's was referred to UC Davis dermatology with the diagnosis of Weber-Christian Disease (WCD) based on a lower extremity biopsy by an outside facility demonstrating inflammatory infiltrates with lipophagia in the subcutaneous fat. Her disease initially responded well to an immunosuppressive regimen of methotrexate and prednisone but later relapsed. Even with aggressive immunosuppression with a new regimen of mycophenolate mofetil, azathioprine, and high dose prednisone, she continued to develop new nodules in her axilla, arms (Figure 1) and buttocks. On presentation to our clinic 15 years after her initial diagnosis, additional biopsies demonstrated a suppurative granulomatous dermatitis and panniculitis (Figure 2a). Standard gram stain and aerobic cultures were negative. Fite stain showed questionable acid-fast bacilli (Figure 2b). These bacilli were also weakly highlighted by the Grocott-Gomori's methenamine silver stains (GMS) and periodic acid-schiff diastase stains (PASD), suggesting the possibility of *Nocardia*. A microbial culture was not done at that time. A repeat punch biopsy two weeks later revealed acid-fast bacilli and the patient was subsequently started on bactrim, minocycline, and dapsone and immunosuppressive

medications were tapered. Mycobacterial cultures later returned positive for *Mycobacterium chelonae*. At that time, dapsone was discontinued and clarithromycin was added, while continuing the patient on bactrim and minocycline. Susceptibility studies confirmed vulnerability to all three agents. Two months following the initiation of treatment, the patient's lesions had resolved.

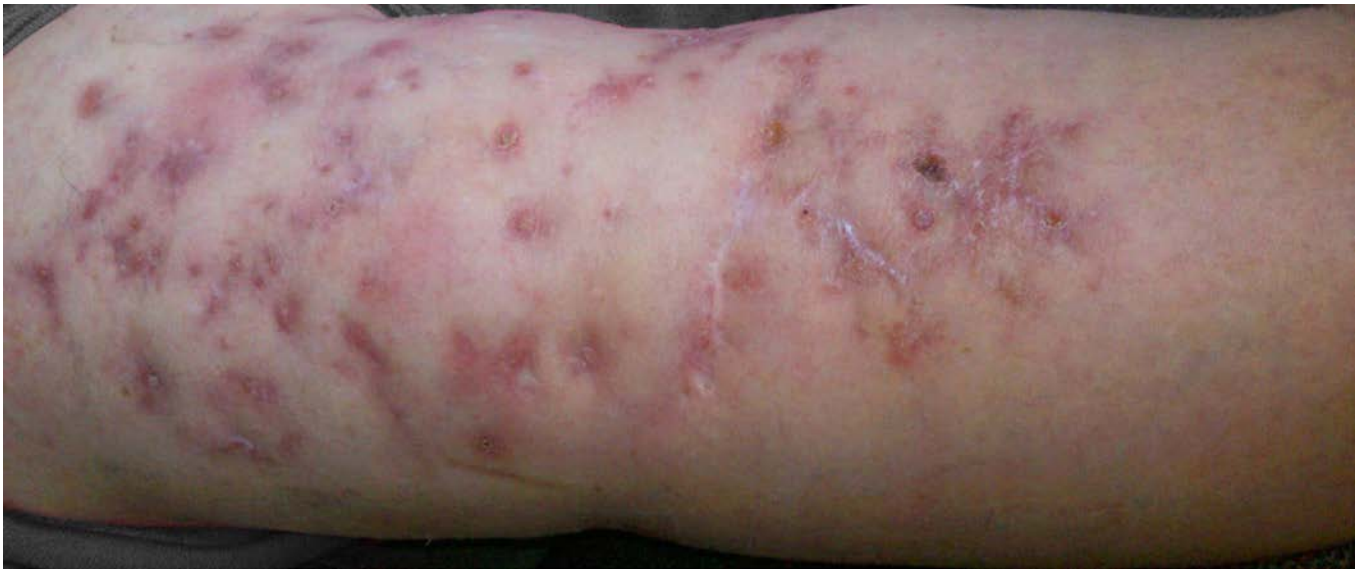

Figure 1. Right arm with deep-seated erythematous nodules, some hemorrhagic crust. Multiple pustules and atrophic depressions are also present.

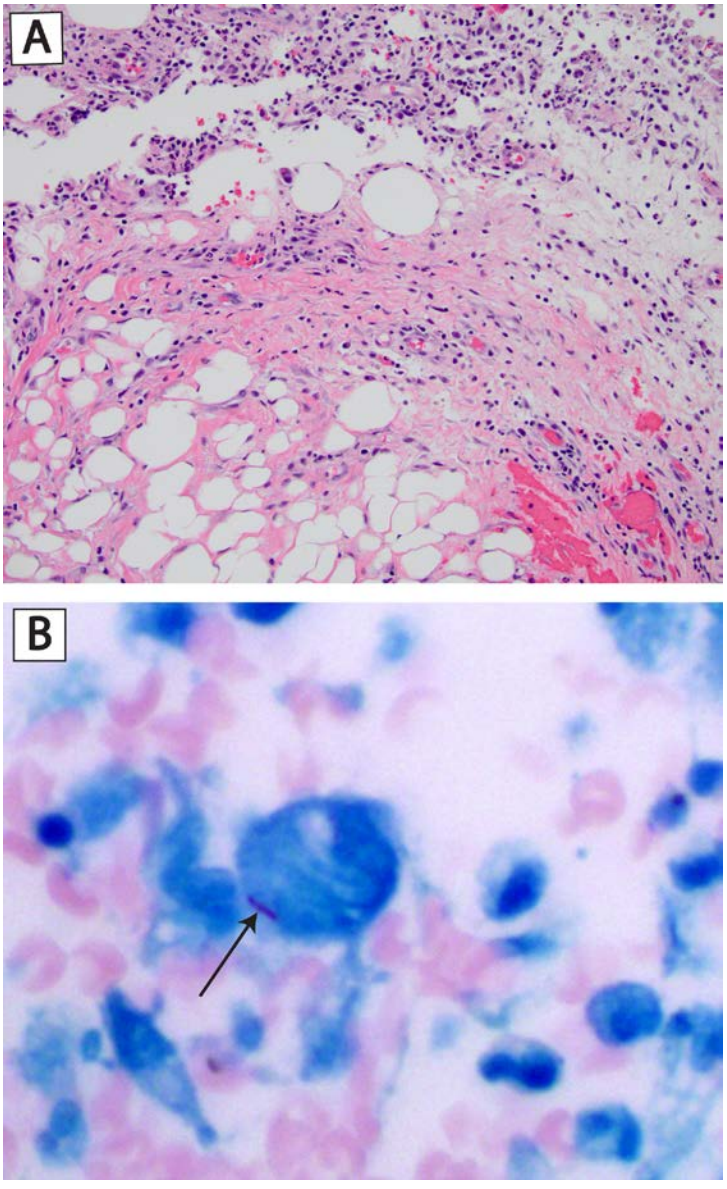

Figure 2a. H&E, 200x Magnification. Lobular panniculitis with neutrophilic granulomatous inflammation. Incisional biopsy from the right forearm.

Figure 2b. 600x Magnification. Arrow indicates acid-fast organisms highlighted with a Fite stain.

Diagnosis

Mycobacterium chelonae is a fast growing non-tuberculous mycobacterium that can cause infection in the setting of trauma or chronic immunosuppression. Herein, we report an interesting culture confirmed case of disseminated soft tissue *Mycobacterium chelonae* infection in a patient who had been receiving heavy immunosuppression for alleged WCD.

Discussion

Patients presenting with nodular relapsing panniculitis, lipoatrophy, and lipophagia were described independently by Christian and Bailey over 70 years ago [1, 2] and the use of "Weber-Christian" panniculitis or "Weber-Christian" disease as a primary diagnosis was common practice until the late 1990's. Eventually the use of the term was slowly phased out by the dermatologic community and in 1998 White and Winkelmann recommended abandoning the diagnosis completely [3]. They argued that the components of WCD are non-specific and known to exist in a wide range of pathologies. Their retrospective analysis of 30 WCD cases revealed that the majority could be given a more specific diagnosis of erythema nodosum, lupus panniculitis, pancreatic panniculitis, or alpha1-trypsin deficiency panniculitis [3]. Other causes of panniculitis with WCD-like histology include lipomembranous panniculitis, atypical erythema nodosum, calciphylactic panniculitis, factitial panniculitis syndromes, and cytophagic histiolytic panniculitis and infection. Despite their efforts, WCD is still reported in the medical literature.

Mycobacterium chelonae is a ubiquitous commensal organism that can be found in municipal tap water, soil, and dust. In the immunocompetent host, infections most often occur after trauma in the form of a localized cellulitis or subcutaneous abscesses. Patients on immunosuppressive therapy, however, may develop disseminated cutaneous and subcutaneous disease. A review of 100 *M. chelonae* infections over a 10-year period found disseminated cutaneous disease to be highly associated with prednisone and other immunosuppressant use [4]. Multiple cases of disseminated cutaneous *M. chelonae* infections have also been reported with use of the biologic, adalimumab [5]. We presented a case of an uncommon infection, most likely incited by heavy use of immunosuppressive agents to treat a disease of questionably validity. This case highlights the importance of ruling out atypical infections, such as *Mycobacterium chelonae*, in patients with inflammatory lesions in the setting of immunosupression and also supports the need to abandon Weber-Christian Disease as a diagnosis.

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