

Dr. Lance D. Dworkin Department of Medicine Research Symposium

# Persistent Skin Eruption in a Renal Transplant Patient

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**Introduction:** Renal transplants are the most common transplant surgery performed in the United States and pose a significant challenge in post-operative care due to the need for strict immunosuppression management. These immunosuppressive medications increase the risk of opportunistic infections, including nocardial infections. Nocardia are Gram-positive, partially acid-fast, aerobic, catalase-positive, non-motile branching rod-shaped bacteria. They are considered ubiquitous and are isolated from multiple environmental sources such as soil, decomposing vegetation, and water. Due to its ability to mimic other diseases, nocardial infections pose a diagnostic challenge and often result in a delay in diagnosis and therapy.

**Case Presentation:** A 72-year-old man with a past medical history for renal transplantation done in 2020 for end stage renal disease secondary to focal segmental glomerulosclerosis (FSGS) presented to the Infectious Diseases clinic with a non-healing left forearm lesion. Three months prior to evaluation, the patient reported that he had cut his forearm while working on a golf cart. Over weeks, the patient developed an ulcerative and crusting wound on his forearm. After topical management with antibacterial and antifungal ointments, and brief courses of cephalexin for common skin and tissue infection he underwent skin biopsy. On physical examination, vital signs were normal as were pulmonary and neurological examination. Skin examination was remarkable for an approximately 5 x 7 cm ulcerated and crusted lesion without surrounding erythema, and slight tenderness. He had no lymphadenopathy. His laboratory studies showed slight lymphopenia and normal renal function with serum creatinine of 1.2 mg/DL. Skin biopsy culture yielded Nocardia abscessus complex. Antibiotic susceptibilities performed at an academic reference lab demonstrated susceptibility to amikacin, doxycycline, tobramycin, imipenem, ceftriaxone, and TMP-MX. To exclude pulmonary or central nervous system involvement, the patient underwent computed tomography (CT) of his chest and magnetic resonance imaging (MRI) of his brain, both of which showed no evidence of infection.

**Outcomes:** The patient was treated with ceftriaxone during admission along with reduction in mycophenolate sodium. He was discharged on TMP-SMX DS twice daily with a plan for 6 months duration. During follow-up, he was noted to have asymptomatic hyperkalemia and his regimen was changed to doxycycline 100 mg twice daily for a 6-month duration. Within one month of treatment, his arm lesion began to improve.

**Conclusion:** Cutaneous Nocardiosis usually occurs in immunocompromised individuals who experience bacterial infiltration of the skin via abrasions. Treatment for cutaneous nocardiosis typically involves a single drug regimen based on susceptibilities. This case highlights that opportunistic infections like Nocardia pose a significant challenge to those undergoing immunosuppressive therapy for organ transplantation and that early detection is vital to avoid dissemination.