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Letter

Isolation of Leclercia adecarboxylata from a patient with a subungual splinter

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Abstract

Leclercia adecarboxylata is a rarely described motile, aerobic, gram-negative bacillus reported to cause clinically significant solitary infections in immunocompromised patients and polymicrobial wound infections in immunocompetent patients [1-5]. We present a case of a polymicrobial infection including *L. adecarboxylata* in a healthy female patient with a subungual splinter, to increase awareness and aid in the diagnosis and treatment of cutaneous *L. adecarboxylata* infections. To our knowledge, this is the first reported case of trauma-related subungual *L. adecarboxylata* infection reported in the dermatology literature.

Case synopsis

A 26 year-old healthy woman presented to an academic dermatology office for evaluation of a painful, swollen left first fingernail. Two days prior she sustained a splinter under her nail while washing a bamboo bowl. Physical exam revealed a tender, erythematous and tan colored striation in the nail plate, a slender piece of tan wood at the level of the hyponychium; purulent discharge could be expressed on manipulation of the nail. An 8 mm splinter was dislodged from under the patient's nail using a #11 blade and forceps.

The patient was given a prescription for cephalexin and mupirocin ointment and instructed to soak the finger daily in a mixture of white vinegar and water. A bacterial culture demonstrated the presence of a polymicrobial infection with *L. adecarboxylata* and coagulase negative Staphylococcus species. The patient's medication was switched to doxycycline hyclate 100 mg twice daily for 7 days. Follow-up 2 weeks after initial presentation revealed a tan/yellow linear discoloration consistent with subungual hemorrhage without tenderness, swelling, warmth, or discharge.

L. adecarboxylata, a member of the Enterobacteriaceae family, has a broad sensitivity to aminoglycosides, tetracyclines, the majority of beta-lactams, quinolones, antifolate drugs, azithromycin, chloramphenicol, and nitrofurantoin [1,3]. *L. adecarboxylata* has been isolated from blood, sputum, urine, peritoneal and synovial fluid, feces, and environmental sources including oil-enriched soil contaminated with polyaromatic hydrocarbons and hurricane-related floodwater [1-3,5]. This organism has been isolated in cardiac valves, gall bladder, and cutaneous wounds following trauma and burn injuries [1,5]. Despite its universal

nature, only a few cases of pathogenicity have been reported [5]. *L. adecarboxylata* may function as an opportunistic infection; malignancy, chemotherapy, end-stage renal disease, diabetes mellitus, burns and transplants are co-morbid conditions documented in cutaneous and non-cutaneous *L. adecarboxylata* infections [5].

Based on 23 case reports, *L. adecarboxylata* has been reported to cause endocarditis, hemodialysis catheter-related bacteremia, neutropenic bacteremia, cholestasis, and peritonitis in 21 of 31 immunocompromised patients [1-3,5]. The remaining cases demonstrated the presence of *L. adecarboxylata* as a polymicrobial growth in wound infections primarily on lower extremities in immunocompetent patients [1,4]. The most common co-infecting organisms include *Enterococcus spp*. (*E. faecalis, E. cloacae*), *Staphylococcus aureus, E. coli,* and less frequently, *Streptococcus pneumonia, Haemophilus influenza,* and *Corynebacterium* [1-3,5]. Of 23 reported cases, 10 involved cutaneous infections, of which 1 case, regarding a pediatric lower extremity cellulitis with bullae, was reported in the dermatology literature [1].

In summary, this case highlights the variability of cutaneous infections caused by *L. adecarboxylata* and underscores the importance of increased awareness among dermatologists of this rarely isolated gram-negative pathogen in order to initiate timely and appropriate diagnosis and treatment.

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