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Title: Ceftaroline Induced Leukopenia in a Patient with Dermatopathic Lymphadenopathy Treated for Suspected Osteomyelitis

Case Presentation: The patient is a 23-year-old female with past medical history of mononucleosis, autoimmune hepatitis, and chronic migraines who presented to the emergency room with one week of progressive painful cervical adenopathy with associated sore throat, odynophagia, and fevers with a maximum temperature of 104°F . She had been receiving a prolonged course of oral ciprofloxacin and IV ceftaroline for presumed osteomyelitis of the right hallux based on supportive imaging (no biopsy or culture available) following ingrown toenail removal. Social history was remarkable only for work as a librarian and possession of a cat at home without any bites or scratches. She denied weight loss, rash, myalgias/arthralgias, or other areas of lymphadenopathy. Exam was significant for painful adenopathy in right anterior and posterior cervical chains, pharyngeal erythema and tonsillar hypertrophy, and a 1cm non-tender mass on the right hallux. Workup revealed leukopenia with WBC 2.3 cells/µl (16% bands, 49% neutrophils, 23% lymphocytes, 6% monocytes, ANC 1.13) without atypical cells on peripheral blood smear and a mildly elevated CRP of 5 mg/L. Rapid Group A Strep Antigen, respiratory viral panel, EBV heterophile antibody, *Bartonella henselae* serologies, and HIV tests were negative. Blood cultures had no growth. CT neck soft tissue noted prominence of bilateral pharyngeal tonsils and inflammation without abscess, numerous prominent cervical lymph nodes bilaterally, bilateral maxillary cyst/polyps. MRI of the right foot showed abnormal signal in the distal phalanx, proximal phalanx of the right great toe with fluid. Home ciprofloxacin and ceftaroline were held to improve diagnostics as she was hemodynamically stable. Excisional cervical lymph node biopsy revealed reactivity consistent with dermatopathic lymphadenopathy without features suggestive of lymphoma, metastatic malignancy, or granuloma. She underwent biopsy and excision of mass of right hallux, finding a bony exostosis without osteomyelitis and negative cultures. Fevers resolved, WBC improved to 9.0 cells/µl, and CRP to 2 mg/L after holding antibiotics. The patient was discharged to home without antibiotics with significant improvement in other symptoms.

Discussion: This case describes an unusual presentation of dermatopathic lymphadenopathy and highlights the importance of appropriate diagnostics and antibiotic stewardship. Dermatopathic lymphadenopathy is a rare benign lymph disorder caused by accumulation of Langerhans cells, histiocytes, and melanin-laden macrophages in the lymph nodes, and is commonly associated with inflammatory skin conditions such as psoriasis, eczema, dermatitis, and cutaneous T cell lymphoma [1]. It typically affects axillary (78%) and inguinal lymph nodes (50%), with exclusive cervical presentation in only 7% of patients [1]. As a young woman with cervical lymphadenopathy with no history of a dermatologic condition or acute skin findings on exam this presentation is unusual. Her concomitant leukopenia and fevers are best explained by her ceftaroline course as they quickly resolved upon antibiotic cessation. Literature describes an estimated 12% incidence of neutropenia for ceftaroline courses greater than 7 days [2]. In another case review of penicillin and cephalosporin homologues, 76% of leukopenia cases occurred in those receiving at least 150 mg/kg/day for at least 7 days [3]. This patient received 27 mg/kg/day of ceftaroline for 3 weeks before admission and was ultimately found not to have osteomyelitis. Ceftaroline is not a recommended therapy for empiric osteomyelitis treatment; thus, this patient’s management could have been improved by a more thorough initial evaluation with bone biopsy and culture with pathogen-guided antibiotic management if indicated [4].

References:

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