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An Atypical Presentation of *Mycobacterium abscessus* Soft Tissue Infection Leading to a Protracted Disease Course

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INTRODUCTION

- *Mycobacterium abscessus* is the most pathogenic and clinically challenging of the rapid growing non-tuberculosis mycobacteria (NTM) and is responsible for a wide spectrum of infections including skin and soft tissue infections (SSTIs).
- Patients typically present with cutaneous, tender, non-healing, and nodular lesions that appear after exposure to a traditional risk factor.
- Delayed diagnosis results in a higher likelihood of pulmonary or disseminated infections as *M. abscessus* itself is responsible for 80% of pulmonary manifestations of rapid growing mycobacteria infections.
- Diagnosis is made with biopsy and acid fast cultures while treatment is complicated by multi-drug resistance and the need for surgical debridement.
- Nosocomial outbreaks have been noted worldwide and overall incidence is increasing.¹²

CASE PRESENTATION

- A 50-year-old female with ESRD presented with 4th right ring finger pain and swelling beginning after hemodialysis via her new right arteriovenous fistula.
- Vital signs were normal and there was no leukocytosis; however, inflammatory markers were elevated.
- The dorsal aspect of the digit was violaceous, cool, exquisitely tender with limited range of motion and without nodules or swollen joints.
- The clinical context favored vascular and rheumatologic differentials; yet, extensive work-up was unrevealing.
- Biopsy and acid-fast stains, obtained on hospital day-13, suggested atypical NTM SSTI, prompting empiric therapy with amikacin, imipenem and azithromycin. Abscesses developed requiring multiple surgical debridements and osteomyelitis and necrosis of the 4th digit necessitated amputation.
- On hospital day 39, cultures identified the causative organism as *M. abscessus*. Sensitivities suggested discontinuation of amikacin and imipenem in favor of trimethoprim-sulfamethoxazole and azithromycin.
- After a 52-day hospital course, symptoms stabilized allowing transfer to rehab with continued antibiotics.

CLINICAL CHALLENGES

- Presentations can be diverse and detailed history must be taken to identify common risk factors (spa exposure, cosmetic procedures, environmental exposure, recent surgery).
- Organisms are notoriously multidrug resistant w/ no guideline directed empiric treatment regimens in the setting of culture and sensitivity testing taking weeks to return.⁴
- Diagnosis is currently by biopsy and acid fast culture but some studies show promise of a rapid detection PCR test being developed.¹³
- Further delaying the diagnosis is that even when cellulitis is considered, biopsy is rarely utilized unless NTM infections are specifically suspected.

DISCUSSION

- In this case, the initial differential favored vascular and rheumatologic conditions, demonstrating that *M. abscessus* infections can mimic these etiologies.
- Hemodialysis is not considered a traditional risk factor and scarce case reports of associated *M. abscessus* infections exist. Nevertheless, the organism’s water-borne nature and propensity to cause nosocomial infections raises suspicion of a link.
- Overall, this cases illustrates that *M. abscessus* SSTIs warrant inclusion on the differential in similar cases as failure to quickly and correctly identify patients leads to prolonged courses of infection.⁴
- New effective treatment regimens, more rapid identification methods and improved measures to contain nosocomial transmission are urgently needed.

REFERENCES