**Introduction**

*Mycobacterium kansasi* is America's second leading cause of nontuberculous mycobacterial (NTM) disease [1]. The mycobacterial species grows slowly in aquatic environments, such as tap water and soil [2], and is classified as a photochromogen [3], meaning it only becomes pigmented upon exposure to light. Like other mycobacterial species, M. kansasi can be cultured on Lowenstein-Jensen medium and visualized using Ziel-Neelsen stain [4]. However, *M. kansasi* can more specifically and rapidly be identified using Gen Probe, which works with both solid and liquid cultures and whose target is the mycobacterium's 16S rDNA. Results of 100% specificity and 85-100% sensitivity can be procured in under two hours [5].

In most cases, *M. kansasi* infects immunocompromised hosts [2] and causes pulmonary and systemic symptoms typically associated with M. tuberculosis [6]. Conversely, musculoskeletal presentations of *M. kansasi* are rare. Infection can occur intrinsically (e.g., via catheter placement), hematogenously (e.g., following skin breakdowns) [5]. Collidis, osteomyelitis, subcutaneous abscesses, nodules, and ulcers can ensue [5]. However, *M. kansasi* causing granulomatous synovitis has sparsely been reported and usually occurs in those with chronic immunosuppression, e.g., due to organ transplant or autoimmune disease treatment [2]. The *Indian Journal of Plastic Surgery* published a case and systemic review detailing 26 cases of *M. kansasi* causing granulomatous synovitis in 2020 [7]. Diagnosis, on average, occurred seven months post-onset and was done via culture; MRI was used to measure the extent of disease [7]. Approximately half of the patients were immunosuppressed and/or had recurring systems [7]. Treatment results were most successful when surgical and chemotherapeutic approaches were combined; however, antibiotic regimen duration ranged between three and 18 months [7].

To date, the American Thoracic Society (ATS) does not recommend a treatment specifically for a skeletal *M. kansasi* infection. However, for a localized skeletal MAC infection, ATS does recommend combining excisional surgery and chemotherapy with the drug regimen recommended for MAC pulmonary disease, although the duration and adequacy of such a regimen is unknown [5]. The Infectious Disease Society of America recommends combining rifampicin and ethambutol with eitherisoniazid or a macrolide in cases of pulmonary disease due to *M. kansasi* [5].

**Patient Presentation**

A 50-year-old man initially presented to an orthopedic clinic in 2019 with complaints of a “bump” on the dorsal surface of his left wrist. The mass itself was not tender to palpation or erythema and there was no drainage from the site. It was associated with a “pressure-like” sensation, and repetitive hand motions would cause soreness. The soreness would improve with application of ice. The mass spontaneously resolved and so the patient did not follow up with surgery. The MRI from November 2019 can be seen in Figure 3.

The “bump” reappeared four months later, larger in size and accompanied by a second mass. The patient sought care because the aching pain and pressure made it difficult to work. He lacked systemic symptoms but had a chronic, non-productive cough. A chest X-ray was performed and was found to be unremarkable. The chest X-ray from March 2020 can be seen in Figure 4. In many past occasions, the patient had injected IV drugs into his left hand, but he could not recall any infection or trauma as a result.

**Patient History**

The patient had a history of chronic hepatitis C, which was treated in 2018 via Eclusa. Ultrasounds completed in 2019 showed heterogeneous, increased echogenicity of the liver, which raised concern for possible cirrhosis, though the elastography FibroScan test was F1. The patient had no history of documented compensated cirrhosis or gastrointestinal bleed. The patient did have a history of IV drug use and alcohol abuse, which ceased in 2017. His past IV drug use included heroin, cocaine, and methamphetamine; he frequently used dirty and shared needles. At the time of his presentation to the infectious disease clinic, he was taking suboxone 8 mg/2 mg three times a day and followed medically for smoking cessation. The patient was employed in construction. He had worked in construction and/or landscaping since high school. Jobs included renovation of old homes and rebuilding work following Hurricane Katrina. He typically rode his bike to work and had numerous falls with abrasions but no specific, significant trauma to his left wrist. The patient’s surgical history included a right knee arthroscopy in 2007. The patient’s family history included a father with cirrhosis.

**Tenosynovectomy**

In June 2020, a tenosynovectomy was performed. Post-surgery, the organism was cultured on Lowenstein-Jensen medium and stained acid-fast. Gen Probe technology specifically identified the organism as *Mycobacterium kansasi*.

**Discussion**

The drug regimen recommended by the ATS for a skeletal MAC infection was adapted for this patient's skeletal *M. kansasi* infection. Rifampicin, ethambutol, and azithromycin were empirically prescribed. Azithromycin, a macrolide, was chosen over isoniazid due to the patient’s history of chronic hepatitis C. The rifampicin may decrease the efficacy of his prescribed suboxone. The patient’s liver enzymes will be monitored monthly and HIV testing will be repeated. Susceptibilities of the infective organism may lead to a changed drug regimen.

**References**