

A Tale of Two Fungi

A 71 year old male patient presented to his primary care physician for persistent ankle swelling and pain. He first noticed increasing pain in the joint approximately 5 years prior, and the symptoms have slowly worsened over that time. He does not recall any trauma to the joint that could explain the symptoms.

Currently, the patient is retired, spending his time working in his yard and home and golfing often with friends. He does state that activity aggravates the pain, and he is provided some relief by NSAIDs and ice.

The primary care physician orders an MRI of the affected joint (see below) and the patient is referred to orthopedics.

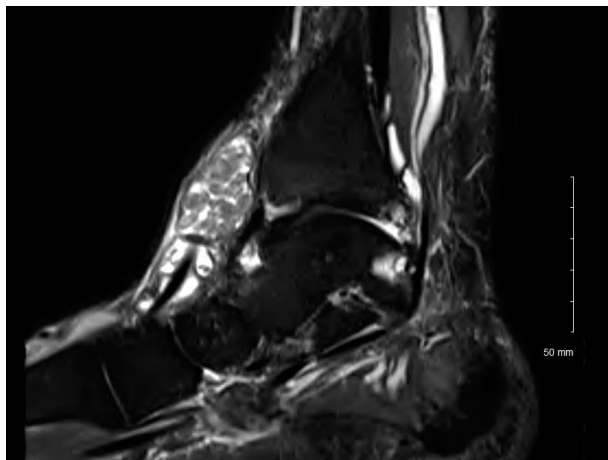


Figure 1: T2 image of the left ankle. The toes are to the top of the image, with the tibia to the left.

MRI imaging demonstrates a complex lesion on the dorsum of the foot, suspicious for a giant cell tumor of tendon sheath. A biopsy is performed. From the operative note: *“There was an efflux of the large amount of synovial fluid in addition with a fibrinous looking **rice body type reactive tissue** within the tenosynovium. This sent to Pathology for frozen section, permanent section, cytogenetics. Initial frozen section diagnosis was nondiagnostic, but no malignancy seen.”*



Figure 2: Example of Rice Body reactive tissue (<http://dx.doi.org/10.1093/qjmed/hct175>).

Cytogenetics demonstrated 45,X,-Y[17]/46,XY[2]. Histologically, the tissue was interpreted as “Chronic synovitis with focal acute inflammation and granuloma formation”. Special stain for fungal organisms (GMS) was also performed.

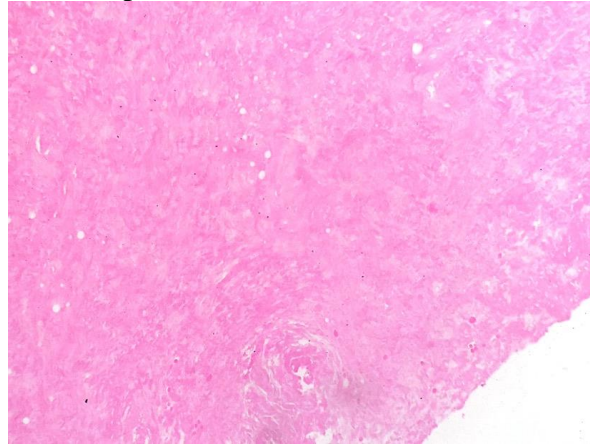


Figure 3: H&E micrograph of tissue.

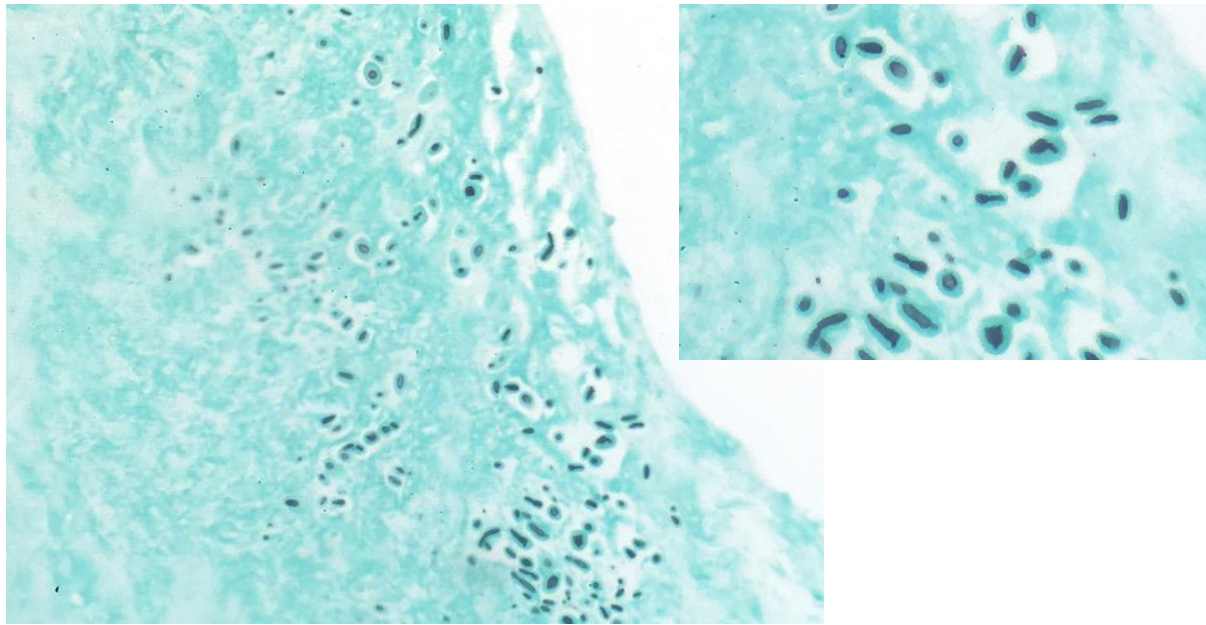


Figure 4: GMS Stain

Seven days after the procedure, Microbiology reported growth of fungal organisms (see wet mount below):



Figure 5: Wet mount of fungal organism (See link below)

This is an example of: *Sporothrix schenckii*

Sporothrix is a member of the thermally dimorphic fungi. These organisms are characterized by growth in a yeast form at 37°C and growth as a mould when cultured at 25°C. Clinically in the United States, the most relevant organisms include *Sporothrix schenckii*, *Histoplasma capsulatum*, *Blastomyces dermatitidis* and *Coccidioides immitis/posadasii*. The latter three organisms are generally geographically limited; whereas, *S. schenckii* is distributed worldwide and is commonly found in association with vegetation. Importantly, these organisms can cause endemic disease in healthy hosts, and the location of exposure can aid diagnosticians in ascribing a causative organism.

The geographically localized fungi typically infect patients through the respiratory tract, after spores located in the soil are inhaled. By contrast, *S. schenckii* is typically caused by traumatic implantation of spores into soft tissue. Coupled with its association with vegetation, *S. schenckii* has been ascribed as an affliction of the avid rose gardener.