

LETTERS TO THE EDITOR

## Pyogenic extensor tenosynovitis of the ankle with associated synovial cyst caused by *Streptococcus pneumoniae* - a case report

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Dear Editor,

Pyogenic tenosynovitis is a bacterial infection of the synovial sheath that surrounds a tendon, occurring almost exclusively in flexor tendons of distal extremities, with only isolated cases reports in extensor compartments<sup>1-5</sup>. Its etiology is most commonly due to trauma with direct inoculation of a tendon sheath,

contiguous spread from an infection of adjacent soft tissues, or hematogenous spread<sup>5</sup>.

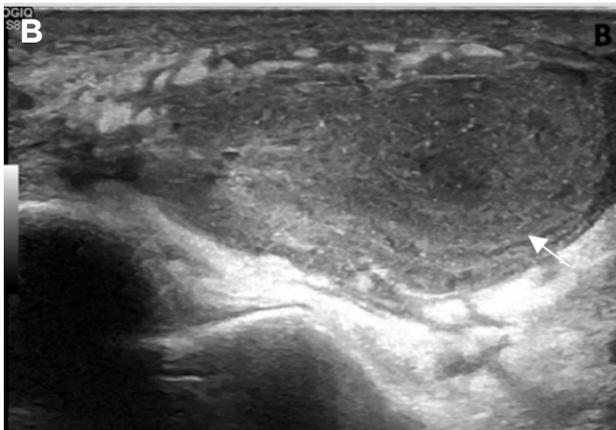
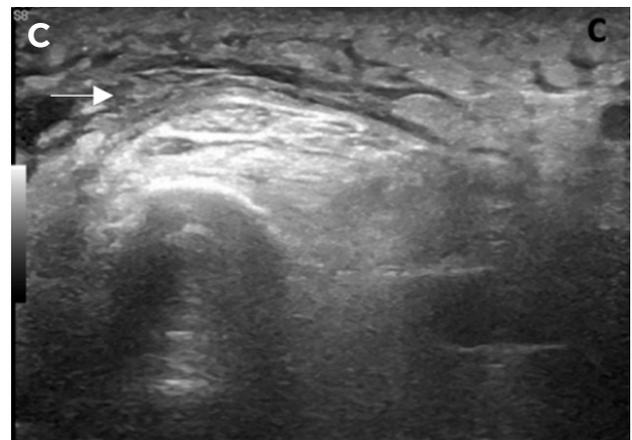
We report a case of an 81-year-old Caucasian male followed in our rheumatology department for the last 4 years with a diagnosis of calcium pyrophosphate deposition disease, currently treated with colchicine 0.5 mg/day and prednisolone 2.5 mg/day, who presented with painful swelling and erythema of the right ankle and dorsum of the right midfoot for 3 weeks. He had no history of fever or recent trauma. His past medical history was significant for arterial hypertension and atrial fibrillation. The physical examination revealed painful right ankle mobilization accompanied by unequivocal local signs of inflammation at the anterolateral aspect of the right ankle

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**Figure 1.** (A) Clinical photograph showing swelling and erythema over the lateral aspect of the right ankle. (B) Ultrasound of the right ankle showing synovial thickening of the extensor digitorum longus tendon and soft-tissue edema and a circumscribed hypoechoic lesion of 12.7 mm axial and 27.8 mm longitudinal length arising from tendon sheath. (C) Ultrasound reevaluation after treatment showing subcutaneous tissue edema and complete reabsorption of the synovial cyst.

and proximal foot, without any wounds or abrasions. His white blood cell count was elevated at  $11.1 \times 10^3/\mu\text{L}$ , erythrocyte sedimentation rate was elevated (115 mm/h) and C-reactive protein was normal (0.25 mg/dL). On ultrasonography (US), synovial thickening of extensor digitorum longus and peroneus tertius tendons was observed, as well as a circumscribed hypoechoic lesion (of 12.7 mm axial and 27.8 mm longitudinal length) arising from tendon sheath, correlating with a cystic nature. US-guided percutaneous aspiration of the synovial cyst was performed, draining purulent fluid, which was sent to cell count analysis and culture, and *empirical antibiotic treatment* was started until cultures could narrow the coverage. Examination of the fluid under polarized light microscopy revealed rhomboid, positively birefringent crystals of calcium pyrophosphate dihydrate and synovial fluid culture identified *Streptococcus pneumoniae*. He was diagnosed as pyogenic extensor tenosynovitis of the ankle due to *S. pneumoniae* and after discussion with the orthopedic team it was decided to perform ultrasound-guided percutaneous tendon sheath lavage and start treatment with cefuroxime 250 mg twice daily for 20 days. Outpatient clinical follow-up review at the end of medical treatment revealed total resolution of local inflammatory signs and ultrasound reevaluation showed absence of synovial thickening of extensor digitorum longus and peroneus tertius tendons as well as complete reabsorption of the synovial cyst.

To the best of our knowledge, no case of pyogenic tenosynovitis in extensor tendons of ankle due to *Streptococcus pneumoniae* has been reported yet. A case of acute flexor tenosynovitis of the hand caused by *Streptococcus pneumoniae* has been previously described in a healthy male patient<sup>6</sup>.

Isolated pyogenic tenosynovitis of extensors tendons without a predisposing cause is extremely rare and a

high index of suspicion is required. In our case, the local inflammatory signs around the ankle could mimic pseudogout arthritis based on his comorbidities. Fortunately, US was readily performed with findings that raised concern for extensor tenosynovitis, which resulted in prompt treatment, and the definite diagnosis was confirmed on bacteriology. Our patient was successfully treated with percutaneous lavage and antibiotic therapy.

We describe a rare case of idiopathic pyogenic extensor tenosynovitis in a distal lower extremity with no evidence of penetrating trauma. This case further highlights the utility of ultrasound in the diagnosis and prompt treatment of such pathology, which should be considered in patients presenting with isolated ankle and dorsal foot erythema, swelling and pain, even in the presence of comorbidities such as pseudogout.

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