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Letter to Editor

Acute Tenosynovitis Due to Group A *Streptococcus*

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Tenosynovitis (TS) is an acute closed space obstruction of the tendon sheath that usually affects the fingers of the hand [1]. *Staphylococcus aureus* accounts for 70- 80% of all cases, and trauma is often mentioned. Occasionally, group A *Streptococcus* (GAS) infections have been implicated [2].

We report the case of a 2-year-old boy who was admitted with high unremitting fever (maximum axillary temperature of 41.5 °C, every 3h) for 2 days, left-hand tumefaction, and severe pain. On admission, he presented with fever and appeared unwell, with a blood pressure of 114/70 mmHg, heart rate of 149 bpm, and respiratory rate of 39cpm. Tenderness along the extensor tendon sheath, pain with passive flexion of the fingers, and fusiform digital swealing were noted. No hepatomegaly, enanthema, tonsillitis, or rash was observed. He had no history of trauma or bite.

At admission, he presented leukocytosis with neutrophilia (25.84 x 109 leukocytes/L with 16.2 x 109 neutrophiles/L), high C-reactive protein (249.33 mg/L) and prolonged sedimentation rate (50 mm/h) with no further alterations to his blood analysis. Oropharyngeal *Kingella kingae* polymerase chain reaction and GAS antigen test results were negative. Ultrasonography revealed fluid collection within the synovial sheath of the extensor digitorum tendons, with edema of the subcutaneous cellular tissue. He was administered cefuroxime and clindamycin. On day 2 of hospitalization, clindamycin-susceptible GAS was isolated from the blood culture. The antibiotic was switched to intravenous penicillin and clindamycin was continued.

Magnetic resonance imaging (MRI) on day 8 confirmed extensor digitorum TS, along with distal radial epiphysis osteomyelitis (Figure 1), without subcutaneous purulence or necrotic tissues. He was evaluated daily by the surgical team; however, given the improvement, surgery was delayed. Apyrexia was achieved on day 2, and inflammatory signs improved on day 5.

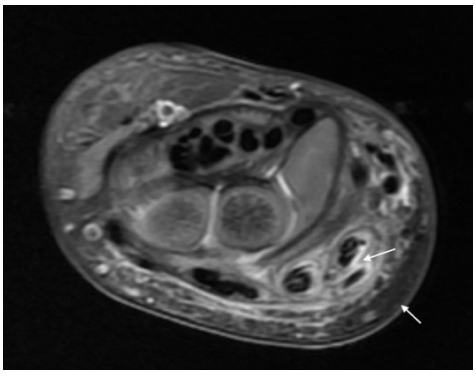

Figure 1: MRI axial proton-density–weighted fat-suppressed image shows extensive fluid around the II and III extensor wrist compartment tendons with tendon sheath thickening (arrow), related to acute tenosynovitis. Diffuse edema is seen in the adjacent soft tissue of the dorsal wrist (arrow).

He was discharged after 10 days of intravenous antibiotics with oral amoxicillin for 4 weeks. At 12 months, follow-up, complete recovery was noted without movement limitation or edema.

GAS causes a broad range of invasive infections, including toxic shock syndrome and necrotizing fasciitis [2]. It is a common cause of osteoarticular infections; however, TS has been rarely implicated [3]. Pyogenic TS requires timely diagnosis and a high index of suspicion, particularly in the absence of trauma. Kanavel signs are the cardinal signs of flexor TS [3], but not all of them are present in the beginning, and, although they have high sensitivity, the specificity is low [4]. Ultrasonography is helpful for diagnosis but requires experienced radiologists. MRI confirms the diagnosis and evaluates for complications [5]. Traditionally, urgent incision and drainage were considered the standard of care to prevent tendon necrosis and spread of infection, however, data from pediatric population is lacking [6]. Risk factors for worst outcome include major trauma, purulence, skin necrosis, MRSA or polymicrobial infection [7]. In our patient, the absence of those factors and the good evolution made him eligible for nonsurgical management. GAS is universally susceptible to penicillin. In severe cases, clindamycin, which reduces protein synthesis and toxin production, is generally added [2].

In this case, a multidisciplinary approach, timely diagnosis, and antimicrobial treatment resulted in a good clinical evolution without sequelae.

Conflicts of Interest

The authors declare that they have no conflicts of interest. All authors have read the document and agreed with the submission version. Our study has not been previously published in its current or similar forms. None of the companies or financing interfered with the decision to publish.

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Ethical Approval

This study was approved by the hospital's ethics committee.

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