

MRI can help identify Lyme arthritis in children, avoid unnecessary surgery

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“Distinguishing Lyme arthritis (LA), the most common manifestation of the disease in children, from septic arthritis (SA) can be challenging because of overlap in clinical presentations,” the authors state.

[In this study, investigators “assessed the predictive value of MRI as an aid in identifying LA.”](#)

They examined the medical records and MRI scans of children who presented with acute knee effusion and were ultimately diagnosed with Lyme arthritis and septic arthritis. They identified 87 cases of LA and 9 cases of SA.

Out of the 87 Lyme arthritis cases, 14 (16%) of the patients were initially presumed to have septic arthritis and underwent operative irrigation and debridement.

All of the LA patients were treated with 1 month of antibiotics.

Patients with Lyme arthritis can exhibit fever, inability to bear weight, elevated CRP and ESR, and high synovial WBC count from an arthrocentesis, which can mimic a bacterial septic arthritis, the authors explain.

“The arthritis caused by the *B. burgdorferi* spirochete is distinct from bacterial [septic arthritis] in that it does not cause the rapid articular cartilage destruction and therefore does not typically require emergency surgical drainage.”

Testing with MRI can be costly and may require sedation for some young patients. However, it has been shown to be extremely effective in evaluating musculo-skeletal infections. For instance, MRI findings can indicate septic joints in as little as 24 hours after infection.

The authors state, “our study offers a useful prediction algorithm for [Lyme arthritis] that includes MRI for the evaluation of patients presenting with acute inflammation of the knee.”

Furthermore, they suggest, “Patients with lymphadenopathy, myositis, and CRP of <3 mg/L; without subcutaneous edema; and who are able to bear weight can be treated with oral antibiotics for LA while awaiting serologic results.”

“There were 14 patients with LA who underwent a surgical procedure, and, if these criteria had been applied, all 14 of these patients may have avoided a surgical procedure,” the authors suggest.

The authors concluded:

“LA should be strongly suspected in endemic areas of the United States when children present with a knee effusion.”

“The addition of MRI criteria to clinical and laboratory findings significantly improved the predictive value for identifying LA.”

Related Articles:

[Lyme arthritis symptoms in child years after tick bite](#)

[Diagnosing Lyme arthritis of the hip in children](#)

[High cost of treating Lyme arthritis in children with surgery](#)

References:

1. Yen YM, Sanborn RM, Donohue K, Miller PE, Milewski MD, Ecklund K. Lyme Arthritis in the Pediatric Knee: Clinical and Magnetic Resonance Imaging Differentiators. JB JS Open Access. 2022 Nov 23;7(4):e22.00067. doi: 10.2106/JBJS.OA.22.00067. PMID: 36447494; PMCID: PMC9699513.

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