

MULTICENTER ASSESSMENT OF ATRAUMATIC KNEE SWELLING AND MENISCAL PATHOLOGY IN THE SETTING OF LYME ARTHRITIS: DEVELOPMENT OF DIAGNOSTIC AND TREATMENT GUIDELINES

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BACKGROUND

- Atraumatic, unilateral knee swelling may be a presenting sign of Lyme Disease in the pediatric and adolescent population, and should be differentiated from septic arthritis for appropriate management
- Lyme arthritis may also predispose affected knees to lower energy meniscal tears, for which the utility of arthroscopic treatment has not been well explored

OBJECTIVES

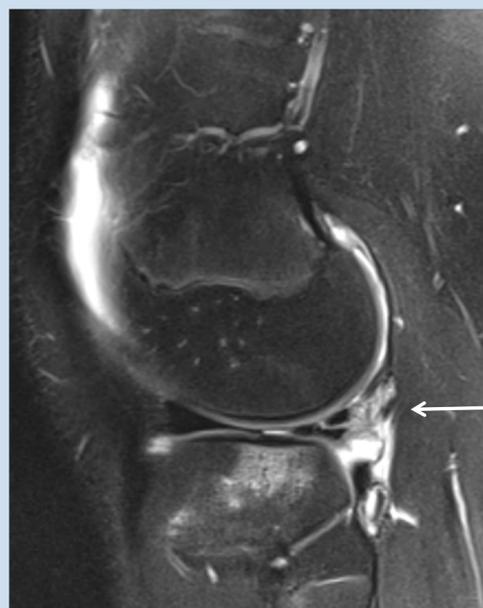
- To investigate the clinical course of a series of patients with both Lyme arthritis and meniscal pathology to develop a diagnostic and treatment algorithm for this presentation.

METHODS

- A retrospective medical record review at two pediatric centers identified patients who presented with atraumatic knee swelling, positive Lyme serology, and MRI demonstrating ≥ 1 signs of meniscus tear.
- Patient demographics, laboratory data, radiologic and operative findings, treatment plan, and clinical outcomes were recorded.
- An algorithm was developed for diagnostic steps and treatment recommendations amongst patient sub-groups

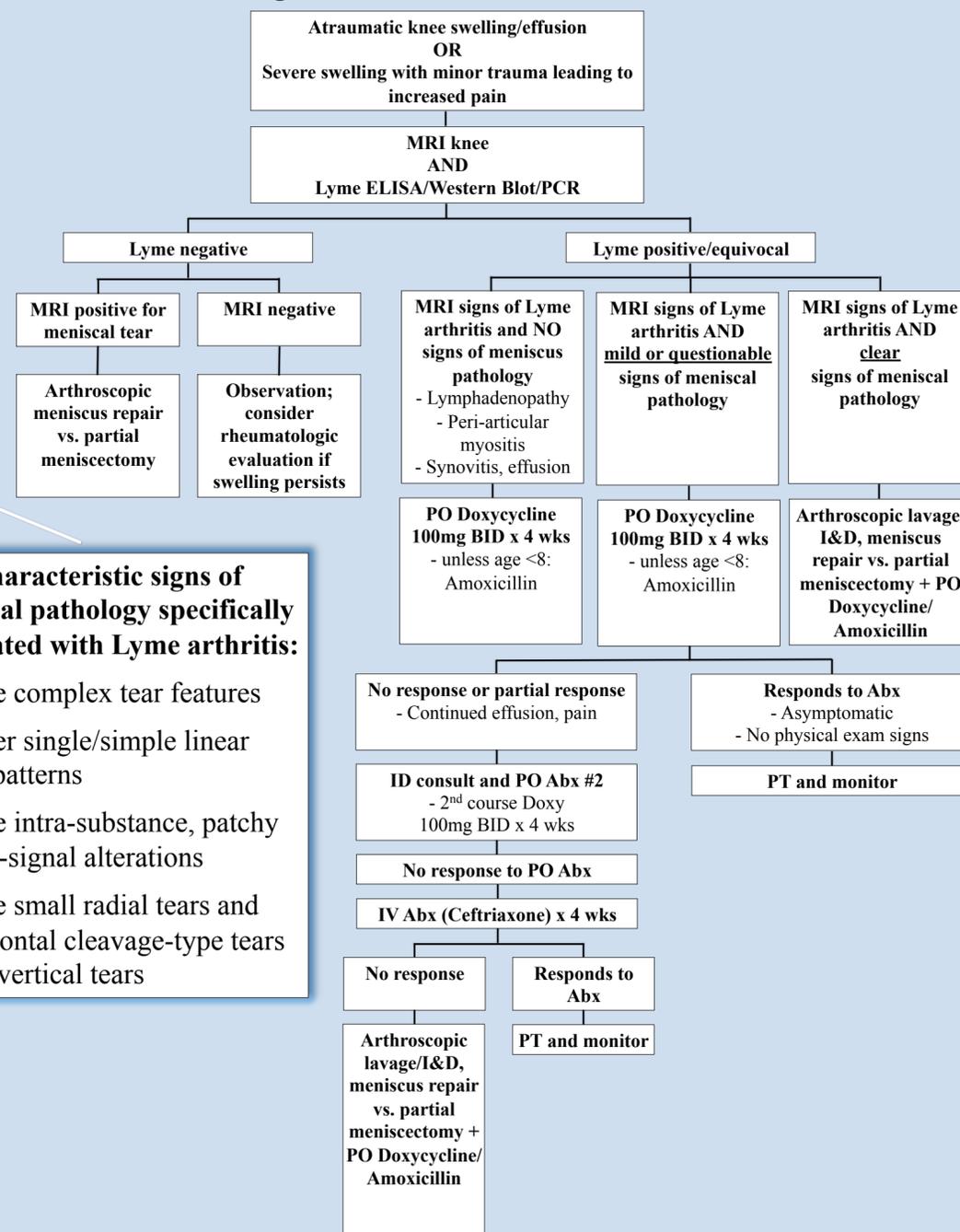


MRI demonstrating a medial meniscal tear in a patient who was treated conservatively with antibiotics alone



MRI demonstrating a medial meniscal tear in a patient who underwent meniscal repair

Atraumatic Knee Swelling and Meniscal Pathology in the Setting of Lyme Arthritis: Diagnostic and Treatment Guidelines



Characteristic signs of meniscal pathology specifically associated with Lyme arthritis:

- More complex tear features
- Fewer single/simple linear tear patterns
- More intra-substance, patchy high-signal alterations
- More small radial tears and horizontal cleavage-type tears than vertical tears

RESULTS

- 17 patients (13 males, 4 females; mean age 13.4 years) were followed for an average of 6 months
- All were diagnosed with Lyme through ELISA +/- Western Blot, +/- PCR Analysis
- 16 patients were treated with an initial course of oral Doxycycline. 9 patients (59%) underwent a second oral antibiotic course, and 2 of the 9 underwent a third course with IV Ceftriaxone.
- 6 patients were treated with antibiotics alone, all of which had symptom resolution after 1-2 courses.
- 11 patients (65%) underwent knee arthroscopy for meniscal pathology, of which 10 patients had a meniscal tear confirmed and underwent appropriate treatment (1 meniscal repair, 10 partial meniscectomies)
- 3 post-operative complications were seen: 2 cases of arthrofibrosis (1 requiring surgical lysis of adhesions) and 1 case of persistent knee swelling which underwent aspiration

CONCLUSIONS

- Given the minimal need for meniscal repair and the subset who underwent successful non-operative treatment in this series, medical treatment of Lyme arthritis and observation may be warranted in lieu of surgery for Lyme patients, even with MRI signs of meniscus pathology.