Differentiating Lyme Disease from Septic Hip Arthritis: Can It Be Done with Hip Synovial Fluid Cell Counts?

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Making the diagnosis of monoarticular Lyme arthritis is important given treatments will differ for bacterial septic arthritis and Lyme disease arthritis, and the earlier we can recognize Lyme disease, the better the outcome. Can the hip synovial fluid help determine one infectious entity from the other? Dart et al. (10.1542/peds.2017-3810) attempted to answer that question by looking at a retrospective cohort of children and teenagers seen with monoarticular hip arthritis in three emergency departments located in a Lyme endemic area. Using a synovial fluid cell count greater than 50,000 cells/microliter to define a bacterial septic arthritis (or a positive culture), the authors did find much higher median synovial fluid cell counts in septic arthritis than Lyme disease (126,130 vs 53,955) but there was significant overlap in counts between the two infectious entities.

So what do we do? Clearly from this study hip synovial fluid cell counts are not enough - but perhaps when used in the context of a careful history and physical and improving rapid Lyme diagnostic serology, we will be closer to confirming that early diagnosis of Lyme disease or a septic arthritis due to other bacterial organisms. If you want to learn more about using hip synovial fluid cell counts to differentiate one infectious disease from another, so you can take a hard Lyme or we mean hard line in knowing when to appropriately treat for Lyme, check out this study and learn more.