

Septic Arthritis

INTRODUCTION

Septic arthritis in childhood represents a medical emergency. A delay in treatment can result in disastrous complications, including complete destruction of the joint. With prompt treatment, the condition can be cured and problems avoided. Pain with joint motion is the most consistent finding in septic arthritis, and the diagnosis must be considered in any joint with this presentation. Treatment is a combination of surgical drainage and antibiotics.



BACKGROUND

Septic arthritis is uncommon. It occurs in all age groups, but affects young children more frequently. Bacteria which live all around us and can get into the blood stream from a variety of sources. Almost always, our immune systems protect us. However, occasionally the bacteria will cause a bone or joint infection. Other causes for infection include a penetrating wound or spread from an adjacent area of infection. Whatever the source, once the bacteria are in the joint and start to grow and divide, the joint space becomes like a closed abscess. The bacteria and the immune system response release enzymes capable of degrading articular cartilage. Significant articular damage can occur very quickly.

CLINICAL FINDINGS

A developing septic arthritis is generally accompanied by the onset of fever, malaise, and pain at the affected joint. Most joints will show swelling, redness, and tenderness. However, the hip is deep and superficial changes are usually not seen. The most consistent sign is pain with passive motion. Typically the hip is held flexed and abducted and it is not unusual for a child to appear comfortable if the joint remains in the position of comfort.

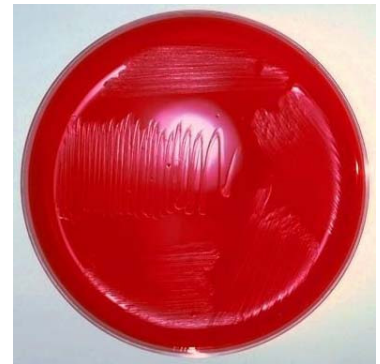


When a septic hip is suspected, additional tests are done to confirm the diagnosis. A blood test is done to look for signs of infection/inflammation. The white blood cell count is usually elevated, but it may be normal at first. ESR and CRP are elevated early. Blood cultures may be positive for the causative organism, but take 2-3 days to get results. If there is clear concern for septic arthritis of the hip, ultrasound imaging can

show extra fluid in the joint. If fluid is seen on ultrasound, aspiration of the hip is done under image-intensifier control with sedation or anesthesia. A sample of joint fluid will be sent for cultures and gram stain, but it too may not yield a viable culture. Xrays help to rule out other

conditions which cause hip pain, such as trauma or Perthes disease, but they are not helpful in confirming acute septic arthritis.

One study identified 4 independent predictors of septic arthritis, which are fever, inability to bear weight, ESR >40 mm/h, and WBC count >12,000/cc. The incidence of septic arthritis was 3% for one predictor, 40% for 2 predictors, 93% for 3 predictors, and 99% if all 4 predictors were present.



TREATMENT

Aggressive workup is indicated whenever signs and symptoms suggest septic arthritis. This evaluation must include blood cultures and joint aspiration. If the aspirate results are consistent with a septic joint, antibiotics must be begun on an empiric basis immediately after the cultures have been obtained. A septic joint should be considered an abscess, and surgical irrigation and drainage is indicated. The choice of antibiotic should be based on the gram stain and culture results as they become available. No consensus exists regarding the appropriate route and length of antibiotic treatment. Recommendations vary from 3 to 6 weeks of antibiotics. Blood tests following ESR and CRP levels are valuable indicators of clinical response. Usually, IV antibiotics continue until progress is made and then are switched to oral antibiotics until ESR/CRP levels and clinical symptoms normalize.

EXPECTED OUTCOMES AND POTENTIAL COMPLICATIONS

With early diagnosis and appropriate medical and operative treatment, the prognosis for septic arthritis is excellent. Effective treatment before enzymatic damage to the articular cartilage occurs is vitally important. Loss of blood supply to the epiphysis and irreversible growth-plate damage are consequences that might occur with further delay. The xray on the right shows a hip destroyed by infection 10 years after delayed treatment of septic arthritis. With prompt treatment, all complications might be avoided, and normal function and future growth may be preserved.



MORE INFORMATION

Further information can be obtained on the internet. Your local public library can help you explore these sources if you are interested. Two good sites for expert and peer reviewed information are the American Academy of Orthopedic Surgeons at www.aaos.org and the Pediatric Orthopedic Society of North America at www.orthokids.org.