



POSNA

The Core Curriculum

Septic arthritis (other than hip)

Objectives

1. Describe diagnostic features of joint sepsis in children
2. Describe the natural history of joint sepsis in children
3. Describe the organisms most likely to result in joint sepsis in your location
4. Describe treatment for joint sepsis in children, excluding the hip joint

Discussion

Septic arthritis is a common childhood condition. Seeding of the joint occurs from one of the transient bacteremias that accompany everyday life, even from brushing teeth. The reason for seeding a particular joint at any particular time remains mysterious. Once seeded, the chain of reactions leading proteolytic enzymes from the leucocytes is begun, which prior to the antibiotic era could result in joint destruction or even death. The outlook today for most cases of septic arthritis promptly treated is for complete recovery. The hip joint, with its particularly vulnerable blood supply is a more emergent condition when septic than other joints, although the shoulder has similarities; the sequelae may be less obvious as the shoulder is not a weightbearing joint. The septic joint is painful, and the child will hold the joint in the most comfortable position, usually at the midrange of motion, and vigorously resist painful motion. Sequential measurements of active and passive range of motion is an excellent clinical measure of response to treatment. Most joints of the limbs are superficial and can thus be easily examined, and easily aspirated. The SI joint is an exception, and must be examined indirectly by maneuvers designed to place stress on the joint; aspiration of a painful SI joint requires anesthesia. If the patient is febrile, blood cultures may be helpful. It is not at all uncommon to have a negative culture of an obviously cloudy joint aspirate, in such cases blood cultures may identify an organism. If an organism is not identified, treatment is based on the prevalent organisms for the age of the patient in the local environment. In the United States, it is no longer considered necessary to provide antibiotic coverage for hemophilus influenza. Kingella is becoming much more prevalent in the young population.

Special imaging for most cases of septic arthritis should not be necessary. Ultrasonography of the adjacent bone may be helpful to determine if osteomyelitis is also present when swelling is severe. Scintigraphy is only helpful when one is unsure of the site of infection (SI joint). MRI and CT can be helpful for detecting abscesses about the pelvis.

The basic treatment plan for septic arthritis is to make the diagnosis, isolate the organism if possible, remove the purulent effusion, and deliver an appropriate antibiotic. There are published reports of treating septic arthritis by arthrotomy, arthroscopy, and early septic joints by aspiration and lavage alone (all with intravenous antibiotics). Whatever method is used, it is important that a

clinical response be noted within 24 hours, or another diagnosis (or inadequate drainage) is responsible. Sequential levels of C reactive protein (CRP) provide a more rapid indicator of clinical response than the ESR. After a clear clinical response is documented, antibiotics may be continued orally. There is no scientific endpoint for discontinuing coverage for uncomplicated joint sepsis, the trend is for lesser total durations of therapy. 3 weeks is a cookbook answer for most uncomplicated cases.

If diagnosis is delayed, or an immediate response to treatment is not attained, there is either another nidus of infection or osteomyelitis complicating the arthritis must be suspected, and a longer duration of therapy will be necessary. Indications for operative intervention are then the same as those for osteomyelitis.

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