Hip Joint Effusion, Child

A joint effusion is an increased amount of synovial fluid within the joint. *Synovial fluid* is a yellow-to-clear material. It lubricates the joint, similar to oil lubricating a motor. The cause of joint effusion is often due to an abnormal condition in the joint.

CAUSES

- The most frequent cause is **idiopathic transient synovitis**. *Idiopathic* means the cause is unknown. *Transient* means the condition will pass. *Synovitis* means there is an inflammation of the joint. This is **also known as irritable hip syndrome**. It is one of the most common causes of a joint effusion in a young person. Transient synovitis of the hip is a self-limiting, mild inflammatory arthritis. It happens in children most often in the 3 to 8 year age range. Other than injury, transient synovitis is the most common cause of sudden hip or knee pain in children less than 10 years of age. The cause of the condition is unknown. But it may start following an upper respiratory tract infection. Transient synovitis typically starts out as a sudden onset of hip pain, limp, and restricted movement. Unlike septic arthritis, the child does not have a fever or appear sick. Examination usually shows pain when turning the toe inward on the side with the affected hip. Laboratory investigations are usually normal. They include:
  - White blood cell count.
  - Erythrocyte sedimentation rate.
  - C-reactive protein.
- Effusions are also seen in an infection of a joint (*septic arthritis*), and juvenile idiopathic arthritis.
- Effusion is also seen in some stages of Perthes disease.

DIAGNOSIS

- The age of your child, clinical history, and physical examination will generally suggest the diagnosis, with x-rays used as needed.
- A pelvic x-ray would be normal. But it may be needed to exclude other problems. X-rays are important if the presentation is abnormal. This is particularly true:
  - If there are signs of infection.
  - In children over the age of 8 years if a *slipped capital femoral epiphysis* is a strong consideration.
- On x-ray, a difference of more than 2 millimeters (less than 1/8 inch) between the joint space is abnormal. It may be a sign of fluid in the joint.
- An effusion within the hip joint, as seen on x-rays, may displace the fat planes. These fat planes, however, lie between the muscles and the joint capsule. They are only displaced by an effusion if it is large.
- Ultrasound is very sensitive for the detection of hip joint effusion. It is useful for supporting the diagnosis of transient synovitis and for follow up to ensure the effusion resolves (goes away). These ultrasound picture (*sonographic*) appearances of transient synovitis of the hip are similar to the changes seen with an infected joint (*septic arthritis*). If there is a suggestion of infection, fluid may be taken out with a needle under ultrasound or x-ray guidance. The fluid may then be sent to the lab for examination. A clinical suggestion of infection would be a generally ill appearing child who is running a fever and presenting with joint pain. Routine withdrawal (*aspiration*) of joint fluid in transient synovitis is usually not helpful for treatment or diagnosis.
- Occasionally, Perthes' disease may follow transient synovitis. The exact way this works is uncertain. But it may relate to increased joint pressure. Rest and reduced weight bearing usually ensure resolution of problems (*symptoms*) within 10 days. But the joint effusion may persist slightly longer.

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