Stay Alert to Femoral Acetabular Impingement

BY DOUG BRUNK

SAN DIEGO — It's important to recognize femoral acetabular impingement in young athletes because increasing evidence suggests that children and adolescents with the condition may require total hip replacements later in life, according to Dr. Eric W. Edmonds.

Femoral acetabular impingement "may be related to slipped capital femoral epiphysis injuries, which usually occur in overweight children, but we think there is a more athletic body habitus in which the femoral head slowly creeps back because of athletic endeavors, he said at a meeting sponsored by Rady Children's Hospital and the American Academy of Pediatrics. The head and neck of the femur are offset from each other, so it becomes prominent on the front side and causes impingement as the child brings the hip up into flexion.

This can occur from a slight slip, known as a Cam impingement, or from a Pincer impingement, in which the acetabular cup is rotated back from where it should be. The majority of children with femoral acetabular impingement have a mix of these two types, said Dr. Edmonds, an orthopedic surgeon with the pediatric orthopedic and scoliosis center at Rady Children's Hospital, San Diego.

The first line of defense is conservative management with physical therapy such as Pilates and core training. If a femoral head doesn't look normal on x-ray, Dr. Edmonds said he orders an MRI with an arthrogram, because evaluation of the labrum inside the hip requires an intraarticular injection by the radiologist.

Another lower-extremity injury seen in young athletes is an avulsion fracture, which rarely requires surgical intervention. The best therapy is to protect from weight bearing and allow the athlete to return to sports as symptoms improve. Some athletes will develop hypertrophic ossifications at the fracture site.

Common problems that occur in young athletes who suffer avulsion fractures include avulsion of the sartorius muscle, the rectus femoris muscle, and the hamstrings.

Young athletes need to perform regular stretching exercises to maintain flexibility, he stressed. There are strong associations between quadriceps inflexibility and anterior knee pain, hamstring inflexibility and patellofemoral pain, and gastroc-soleus muscle inflexibility and calcaneal apophysitis, Dr. Edmonds said.

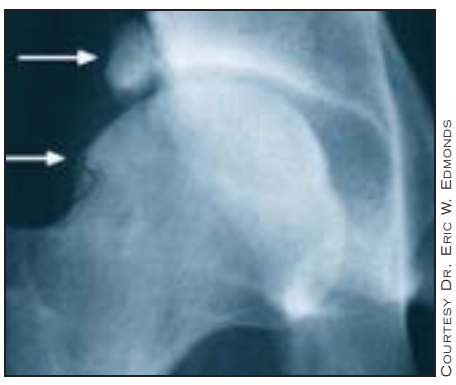
He estimated that 60% of young athletes referred to him have poor flexibility. He measures the flexibility of the hamstrings, the gastroc-soleus muscle, and the quadriceps with these three tests:

► **Popliteal angle test (hamstrings).** With the patient supine, the clinician measures the angle created at the knee using the thigh and the calf as the two vectors. The clinician maintains the hip flexion at 90 degrees while attempting to bring the knee straight. "In athletes younger than age 18, [the leg] should easily be raised up to 180 degrees with the knee extended, but I see a lot of kids with lower marks," Dr. Edmonds said.

► **Ankle dorsiflexion (gastroc-soleus).** With the patient supine, measure the dorsiflexion of the ankle while the knee is extended. The gastroc-soleus muscle "should go 15-20 degrees past neutral with the knee extended," he explained.

► **Prone knee flexion (quadriceps).** For this test the patient lies on his stomach and straightens his legs. The clinician then bends the knee and brings the heel as close as possible toward the buttock. "It should easily push down so that the heel touches their buttock, no matter how big their buttock is," he said.

Dr. Edmonds said he had no conflicts to disclose. ■



COURTESY DR. ERIC W. EDMONDS

Lack of offset between the femoral head and neck may indicate a Cam lesion.