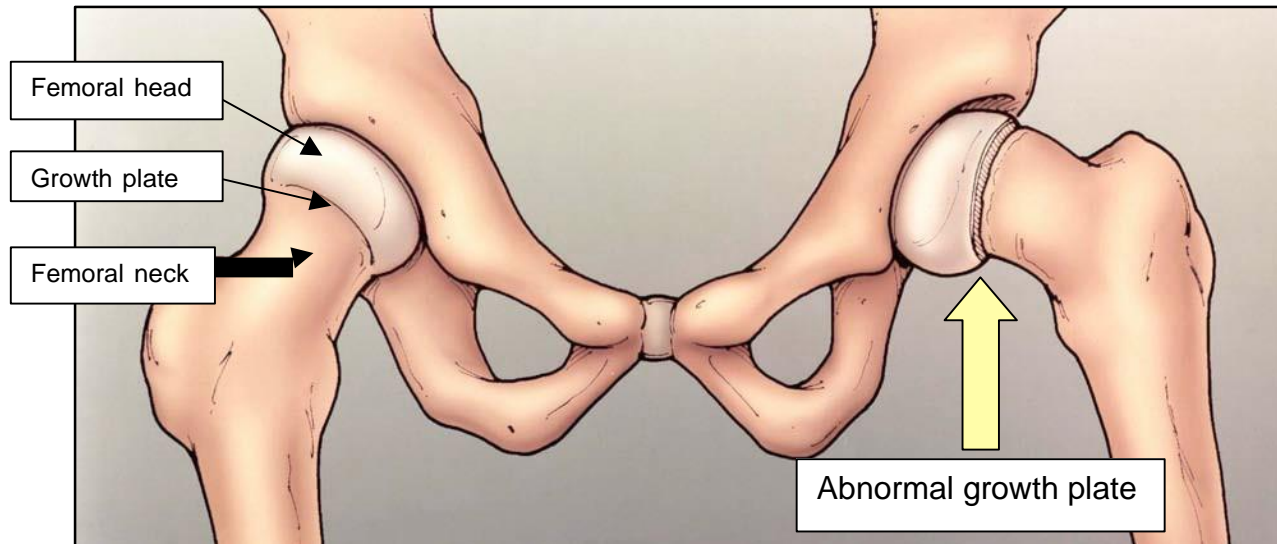


SLIPPED CAPITAL FEMORAL EPIPHYSIS (SCFE)

Slipped capital femoral epiphysis (SCFE) is an unusual but not rare disorder of the adolescent hip. For reasons that are not well understood, the ball at the upper end of the femur (thigh bone) slips off in a backward direction due to weakness of the growth plate. It develops most frequently shortly after the onset of puberty during periods of accelerated growth.



The cause of SCFE is unknown. It occurs two to three times more often in males than females and a large number of the patients are overweight for their height. In most cases slipping of the epiphysis is a slow and gradual process, although it may occur suddenly and may be associated with a minor fall or trauma. Symptomatic SCFE, treated early and well, allows for good long-term hip function.

History and Physical Findings

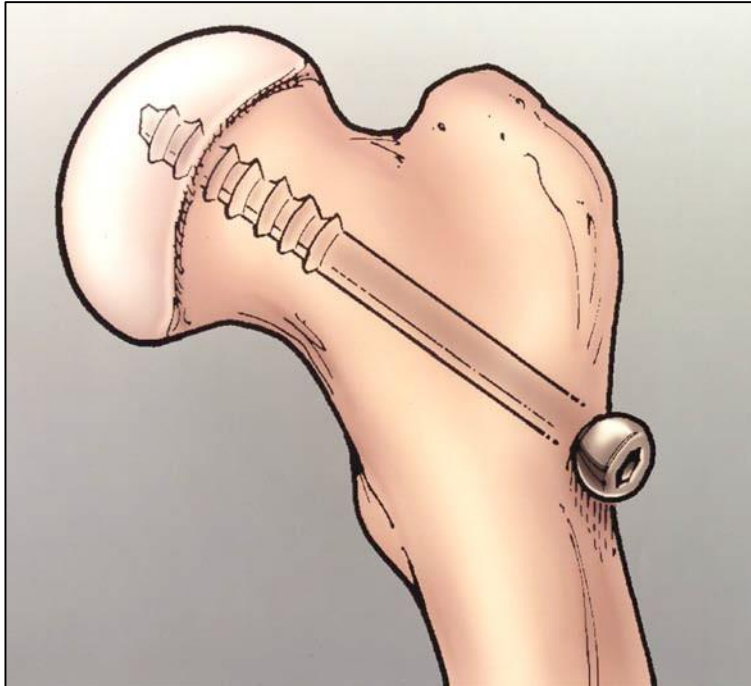
The typical patient presents to the office with a history of several weeks/months of hip or knee pain and an intermittent limp. The appearance of the adolescent is characteristic. He or she walks with a limp. In certain severe cases, the adolescent will be unable to bear any weight on the affected leg. The affected leg is usually externally rotated (turned outward) in comparison to the opposite normal leg. The affected leg may also appear to be shortened.

The physical exam will show that the hip does not have a full, normal range of motion. There is often a loss of complete hip flexion and ability to fully rotate the hip inward. Because of inflammation present in the hip, there is often pain at the extremes of motion and involuntary muscle guarding and spasm.

The condition is diagnosed based on a careful history, physical examination, observation of the gait/walking pattern, and hip x-rays. The x-ray aids in confirming the diagnosis by demonstrating that the upper end of the femur does not line up with the portion called the femoral neck.

Treatment

The goal of treatment is to prevent any additional slipping of the femoral head until the growth plate closes. If the head is allowed to slip, further hip motion could be limited and premature osteoarthritis could develop. Treatment should be immediate, within 24-48 hours in most cases. Early diagnosis of SCFE provides the best chance to achieve the treatment goal of stabilizing the hip.



Fixing the femoral head with pins or screws has been the treatment of choice for decades. Depending on the severity of your child's condition, the surgeon will recommend one of three surgical options: (1) Placing a single screw into the thighbone and femoral epiphysis, (2) Reducing the displacement and placing one or two screws into the femoral head or (3) Removal of the abnormal growth plate and inserting screws to aid in preventing any further displacement.

Complications

There are several potential complications associated with a slipped capital femoral epiphysis. The most common are avascular necrosis (AVN) of the femoral head

and chondrolysis. AVN means that the blood supply to the femoral head has been permanently altered as a result of the femoral head slipping. There is no way to identify those children at risk for AVN or to prevent this complication. Evidence of AVN may not be seen on x-ray for as long as 6-24 months following surgery.

Chondrolysis or loss of articular cartilage of the hip joint is a devastating complication of SCFE. It may cause the hip to be stiff with a permanent loss of motion and pain. The loss of motion may be a result of an inflammatory process in the hip joint, which is still not fully understood by surgeons. Aggressive physical therapy and anti-inflammatory medications may be prescribed for this rare complication with some return of motion.

Post-operative Care

Your child will most likely be admitted to the hospital by the pediatric orthopedic surgeon. Surgery is usually performed within 24-48 hours of that admission. Post-operatively your child will be on crutches for weeks to months. A physical therapist will demonstrate the use of crutches. Specific instruction regarding your child's weight bearing status and activity restrictions will be given and must be followed closely. Additional Vitamin D intake daily for the next year is necessary.

It is important that your child be followed closely for 18-24 months following surgery. After the immediate postoperative period, x-rays every 3-4 months are needed to ensure that the abnormal growth plate has fused. Your child may be restricted in certain sports and activities during this time of recuperation to minimize the chance of further complications. The fusion must be mature enough to prevent further slippage before vigorous physical activities can begin.

Additional surgery

Some hips may present early or later with an abnormal alignment of the femoral head on the thigh bone that interferes with walking or range of motion such as flexing of the hip. Those hips may benefit from an osteotomy (cutting of the thigh bone) that places the hip into an improved position for walking. The plate that holds the two bony pieces in re-alignment will remain until the healing process is completed.

Other hips may benefit from removal of a bump of bone on the femoral neck that interferes with hip flexion or is beginning to damage the “O”-ring of the hip called the labrum. These hips will need to be followed into young adulthood as they are at greater risk for developing early degenerative osteoarthritis.

