

**Stage II: Fragmentation, or resorptive, stage:** Femoral head resorption and revascularization produces collapse of the femoral head and fragmentation that gives a mottled appearance on radiographs

**Stage III: Reossification stage:** New bone formation, which is represented on radiographs as calcification and ossification or increased density in the areas of radiolucency; this filling-in process appears to begin in the periphery of the femoral head and progress centrally

**Stage IV: Healing, or remodeling, stage:** Gradual reformation of the head of the femur without radiolucency; this occurs until skeletal maturity

## **Clinical Manifestations and Diagnostic Evaluation**

The onset of Legg-Calvé-Perthes disease is usually insidious, and the history may reveal only intermittent appearance of a limp on the affected side or a symptom complex, including hip soreness, ache, or stiffness, which can be constant or intermittent. The parents may report seeing the child limping, and the limp becomes more pronounced with increased activity. The pain may be experienced in the hip, along the entire thigh, or in the vicinity of the knee joint. The pain and limp are usually most evident on arising and at the end of a long day of activities. The pain is usually accompanied by joint dysfunction and limited range of motion at the hip. There may be a vague history of trauma but not necessarily. The diagnosis is established by characteristic radiographic findings including medial joint space widening, flattening of the femoral head with irregular ossification and possible subchondral fracture. A perfusion MRI of the hip may be obtained to assess the blood flow to the femoral head.

## **Therapeutic Management**

Because deformity occurs early in the disease process, the aims of treatment are to restore and maintain adequate hip range of hip motion; prevent femoral head collapse, extrusion, or subluxation; and preserve as well-rounded femoral head as possible at the time of healing. Treatment varies according to the child's age at the time