

Sickle cell dactylitis	Avascular necrosis
Joint effusions in sickle cell crises	Bone changes secondary to marrow hyperplasia
Osteomyelitis	Septic arthritis
Infarction of bone	Gouty arthritis
Infarction of bone marrow	Synovial infarction

Sickle cell crisis is associated with periarticular pain and occasionally with joint effusions. The joint and periarticular area are warm and tender. Knees and elbows are most often affected, but other joints can be involved. Joint effusions are usually noninflammatory. Acute synovial infarction can cause a sterile effusion with high neutrophil counts in synovial fluid. Synovial biopsies have shown mild lining-cell proliferation and microvascular thrombosis with infarctions. Scintigraphic studies have shown decreased marrow uptake adjacent to the involved joint. The treatment for sickle cell crisis is detailed in [Chap. 98](#).

Patients with sickle cell disease are predisposed to osteomyelitis, which commonly involves the long tubular bones ([Chap. 131](#)); *Salmonella* is a particularly common cause ([Chap. 165](#)). Radiographs of the involved site initially show periosteal elevation, with subsequent disruption of the cortex. Treatment of the infection results in healing of the bone lesion. In addition, bone infarction resulting from vasoocclusion secondary to the sickling of red cells can occur and is the cause of the bone pain in sickle cell crisis. Bone infarction also occurs in hemoglobin sickle cell disease and sickle cell thalassemia ([Chap. 98](#)). In children, infarction of the epiphyseal growth plate interferes with normal growth of the affected extremity. Radiographically, infarction of the bone cortex results in periosteal elevation and irregular thickening of the bone cortex. Infarction in the bone marrow leads to lysis, fibrosis, and new bone formation. Clinical distinction between osteomyelitis and bone infarctions can be difficult; imaging can be helpful.

Avascular necrosis of the head of the femur occurs in ~5% of patients. It also occurs in the humeral head and less commonly in the distal femur, tibial condyles, distal radius, vertebral bodies, and