Acute hematogenous osteomyelitis results when a bloodborne bacterium causes an infection in the bone. Common foci include infected lesions, upper respiratory tract infections, otitis media, tonsillitis, abscessed teeth, pyelonephritis, and infected burns. **Exogenous osteomyelitis** is acquired from direct inoculation of the bone from a puncture wound, open fracture, surgical contamination, or adjacent tissue infection. **Subacute osteomyelitis** has a longer course and may be caused by less virulent microbes with a walled-off abscess or **Brodie abscess**, typically in the proximal or distal tibia. **Chronic osteomyelitis** is a progression of acute osteomyelitis and is characterized by dead bone, bone loss, and drainage and sinus tracts.

Generally, healthy bone is not likely to become infected. Factors that contribute to infection include inoculation with a large number of organisms, presence of a foreign body, bone injury, high virulence of an organism, immunosuppression, and malnutrition; certain types and locations of bone are also more vulnerable to infection.

Typically, children with acute hematogenous osteomyelitis are seen with a 2- to 7-day history of pain, warmth, tenderness, and decreased range of motion in the affected limb along with systemic symptoms of fever, irritability, and lethargy (Box 29-9). Infants may have an adjacent joint effusion as well. Symptoms often resemble those observed in other conditions involving bones, such as arthritis, leukemia, or sarcoma.

Box 29-9

Causative Microorganisms of Osteomyelitis According to Age

Newborns

Staphylococcus aureus

Group B streptococcus

Gram-negative enteric rods

Infants