4–6 weeks. Death is rare. The clinical spectrum of *B. quintana* bacteremia in homeless people ranges from asymptomatic infection to a febrile illness with headache, severe leg pain, and thrombocytopenia. Endocarditis sometimes develops.

DIAGNOSIS

Definitive diagnosis requires isolation of *B. quintana* by blood culture. Some patients have positive blood cultures for several weeks. Patients with acute trench fever typically develop significant titers of antibody to *Bartonella*, whereas those with chronic *B. quintana* bacteremia may be seronegative. Patients with high titers of IgG antibodies should be evaluated for endocarditis. In epidemics, trench fever should be differentiated from epidemic louse-borne typhus and relapsing fever, which occur under similar conditions and share many features.

TREATMENT *B. QUINTANA* BACTEREMIA

(Table 197–2) In a small, randomized, placebo-controlled trial involving homeless people with *B. quintana* bacteremia, therapy with gentamicin and doxycycline was superior to administration of placebo in eradicating bacteremia. Treatment of bacteremia is important even in clinically mild cases to prevent endocarditis. Optimal therapy for trench fever without documented bacteremia is uncertain.

BARTONELLA ENDOCARDITIS

DEFINITION AND ETIOLOGY

Coxiella burnetii (Chap. 211) and *Bartonella* species are the most common pathogens in culture-negative endocarditis (Chap. 155). In France, for example, *Bartonella* species were identified as the etiologic agents in 28% of 348 cases of culture-negative endocarditis. Prevalence, however, varies by geographic location and epidemiologic setting. In addition to *B. quintana* and *B. henselae* (the most common *Bartonella* species implicated in endocarditis, the former more commonly than the latter), other *Bartonella* species have reportedly caused rare cases (Table 197-1).

EPIDEMIOLOGY

Bartonella endocarditis has been reported worldwide. Most patients are adults; more are male than female. Risk factors associated with *B. quintana* endocarditis include homelessness, alcoholism, and body louse infestation; however, individuals with no risk factors have had *Bartonella* endocarditis diagnosed as well. *B. henselae* endocarditis is associated with exposure to cats. Most cases involve native rather than prosthetic valves; the aortic valve accounts for ~60% of cases. Patients with *B. henselae* endocarditis usually have preexisting valvulopathy, whereas *B. quintana* often infects normal valves.

CLINICAL MANIFESTATIONS

Clinical manifestations are usually characteristic of subacute endocarditis of any etiology. However, a substantial number of patients have a prolonged, minimally febrile or even afebrile indolent illness, with mild nonspecific symptoms lasting weeks or months before the diagnosis is made. Initial echocardiography may not show vegetations. Acute, aggressive disease is rare.

DIAGNOSIS

Blood cultures, even with use of special techniques (lysis centrifugation or EDTA-containing tubes), are positive in only ~25% of cases—mostly those caused by *B. quintana* and only rarely those caused by *B. henselae*. Prolonged incubation of cultures (up to 6 weeks) is required. Serologic tests—either immunofluorescence or enzyme immunoassay—usually demonstrate high-titer IgG antibodies to *Bartonella*. Because of cross-antigenicity, serology does not distinguish between *B. quintana* and *B. henselae* and may also be low-titer cross-reactive with other pathogens, such as *C. burnetii* and *Chlamydia* species. Identification of *Bartonella* to the species level is usually accomplished by application of PCR-based methods to valve tissue.

TREATMENT *BARTONELLA* ENDOCARDITIS

(Table 197-2) For patients with culture-negative endocarditis suspected to be due to *Bartonella* species, empirical treatment consists of gentamicin, doxycycline, and ceftriaxone; the major role of ceftriaxone in this regimen is to adequately treat other potential causes of culture-negative endocarditis, including members of the HACEK group (Chap. 183e). Once a diagnosis of *Bartonella* endocarditis has been established, ceftriaxone is discontinued. Aminoglycosides, the only antibiotics known to be bactericidal against *Bartonella*, should be included in the regimen for ≥2 weeks. Indications for valvular surgery are the same as in subacute endocarditis due to other pathogens; however, the proportion of patients who undergo surgery (~60%) is high, probably as a consequence of delayed diagnosis.

BACILLARY ANGIOMATOSIS AND PELIOSIS

DEFINITION AND ETIOLOGY

Bacillary angiomatosis (sometimes called *bacillary epithelioid angiomatosis* or *epithelioid angiomatosis*) is a disease of severely immunocompromised patients, is caused by *B. henselae* or *B. quintana*, and is characterized by neovascular proliferative lesions involving the skin and other organs. Both species cause cutaneous lesions; hepatosplenic lesions are caused only by *B. henselae*, whereas subcutaneous and lytic bone lesions are more frequently associated with *B. quintana*. Bacillary peliosis is a closely related angioproliferative disorder caused by *B. henselae* and involving primarily the liver (peliosis hepatis) but also the spleen and lymph nodes. Bacillary peliosis is characterized by blood-filled cystic structures whose size ranges from microscopic to several millimeters.

EPIDEMIOLOGY

Bacillary angiomatosis and bacillary peliosis occur primarily in HIV-infected persons (Chap. 226) with CD4+ T cell counts <100/μL but also affect other immunosuppressed patients and, in rare instances, immunocompetent patients. The previously reported incidence of ~1 case per 1000 HIV-infected persons is now lower; the decrease is most likely attributable to effective antiretroviral therapy and the routine use of rifabutin and macrolides to prevent *Mycobacterium avium* complex infection in AIDS patients. Contact with cats or cat fleas increases the risk of *B. henselae* infection. Risk factors for *B. quintana* infection are low income, homelessness, and body louse infestation.

CLINICAL MANIFESTATIONS

Bacillary angiomatosis presents most commonly as one or more cutaneous lesions that are not painful and that may be tan, red, or purple in color. Subcutaneous masses or nodules, superficial ulcerated plaques (Fig. 197-2), and verrucous growths are also seen. Nodular forms resemble those seen in fungal or mycobacterial infections. Subcutaneous nodules are often tender. Painful osseous lesions, most often involving long bones, may underlie cutaneous lesions and occasionally develop in their absence. In rare cases, other organs are involved in bacillary angiomatosis. Patients usually have constitutional symptoms, including fever, chills, malaise, headache, anorexia, weight loss, and night sweats. In osseous disease, lytic lesions are generally seen on radiography, and technetium scan shows focal uptake. The differential diagnosis of cutaneous bacillary angiomatosis includes Kaposi's sarcoma, pyogenic granuloma, subcutaneous tumors, and verruga peruana. In bacillary peliosis, hypodense hepatic areas are usually evident on imaging. In patients with advanced immunodeficiency, *B. henselae* and *B. quintana* are important causes of fever of unknown origin. Intermittent bacteremia with positive blood cultures can occur with or without endocarditis.

PATHOLOGY

Bacillary angiomatosis consists of lobular proliferations of small blood vessels lined by enlarged endothelial cells interspersed with mixed infiltrates of neutrophils and lymphocytes, with predominance of the former. Histologic examination of organs with bacillary peliosis reveals small blood-filled cystic lesions partially lined by endothelial