

organisms, neutrophils (i.e., inflammation), and squamous epithelial cells (i.e., superficial contamination). If feasible, tissue biopsy or aspiration of the infected site can provide specimens for aerobic and anaerobic culture.

Traumatic Wounds

The optimal time to acquire specimens for cultures is immediately after débridement of the wound site. Analysis of initial cultures should focus on common pathogens, and additional testing should be reserved for uncommon or rare infections associated with unusual circumstances, such as *Vibrio* species after salt water exposure. Tissue biopsy and special stains may be required in certain situations, such as suspected infection with *M. marinum*.

Burn Wounds

Before sampling, the burn area must be clean and devoid of topical antimicrobial agents. Surface swabs or tissue biopsies are recommended for obtaining culture samples, and histopathologic examination can monitor for the presence and extent of infection. Quantitative evaluation of swab or culture specimens is recommended twice weekly to monitor colonization. Evidence of systemic infection related to the wound should prompt blood cultures.

Diabetic Foot Infections

Superficial swab cultures of ulcerations can be misleading and should be avoided. If surgical débridement is performed, deep tissue specimens should be sent to the microbiology laboratory for evaluation.

Radiographs should be obtained if bone involvement is suspected, and they may also be useful in demonstrating soft tissue gas before crepitus is detected (Fig. 94-6). Magnetic resonance imaging is the most sensitive modality. Chapter 87 discusses the laboratory diagnosis of infectious diseases in more detail.

Differential Diagnosis

Many noninfectious conditions can mimic SSTIs:

- Brown recluse spider bite
- Contact dermatitis
- Gout
- Psoriatic arthritis with distal dactylitis
- Reiter's syndrome

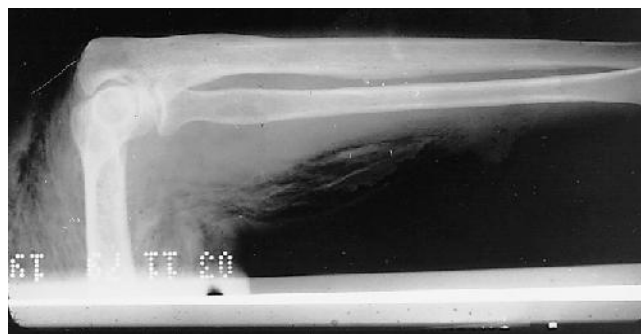


FIGURE 94-6 Radiograph of patient with clostridial myonecrosis shows gas in the tissues. (Courtesy J.W. Tomford, MD.)

- Relapsing polychondritis
- Ruptured Baker's cyst
- Mixed cryoglobulinemia due to immune complex disease from chronic hepatitis C or B infection (may have an erythematous rash)
- Pyoderma gangrenosum
- Sweet's syndrome (acute febrile neutrophilic dermatosis)
- Venous stasis

TREATMENT

Pharmacologic and Supportive Care

Mild cases of cellulitis may be managed on an outpatient basis with dicloxacillin, amoxicillin, or cephalexin. Clindamycin or levofloxacin may be used in patients allergic to penicillin. Severe cellulitis should be managed with parenteral cefazolin, nafcillin, or oxacillin. Clindamycin or vancomycin may be used in patients with allergies to penicillin. Concomitant tinea infection should be treated with a topical antifungal agent such as clotrimazole or terbinafine.

Mild cases of community-acquired MRSA may be managed with clindamycin, trimethoprim-sulfamethoxazole, or tetracycline if antibiotics are indicated. The latter two agents do not, however, provide adequate streptococcal coverage. Severe cases requiring parenteral antibiotics require vancomycin, daptomycin, telavancin, ceftaroline, clindamycin, or linezolid. A β -lactam antibiotic may be considered for hospitalized patients with nonpurulent cellulitis, with modification to MRSA-active treatment if there is no clinical response. Cellulitis associated with an abscess requires surgical drainage.

In addition to supportive care, urgent surgical consultation should be obtained in the event that crepitus, bullae, rapidly evolving cellulitis, or pain disproportional to physical examination findings suggests necrotizing fasciitis. Initial parenteral therapy with vancomycin, daptomycin, linezolid with piperacillin-tazobactam, cefepime plus metronidazole, or a carbapenem is appropriate. Type II necrotizing fasciitis due to *S. pyogenes* or clostridial myonecrosis should prompt combined therapy with parenteral penicillin and clindamycin. The use of intravenous immune globulin in cases of necrotizing fasciitis remains controversial.

Compartment syndrome requires emergent surgical decompression to prevent muscle necrosis and irreversible neuronal damage. Cellulitis or wound infections attributed to *A. hemolyticum* may be treated with clindamycin, erythromycin, vancomycin, or tetracycline. HSV and VZV infections are susceptible to acyclovir, famciclovir, or valacyclovir if treatment is indicated.

Special Treatment Considerations

Animal Bites

Mild cases of animal bites may be treated with amoxicillin-clavulanate. For patients with a penicillin allergy, a fluoroquinolone plus clindamycin or sulfamethoxazole-trimethoprim plus metronidazole are alternatives that may be used in oral or parenteral forms. Inpatient parenteral agents including ampicillin-sulbactam or piperacillin-tazobactam may be used for patients who are not allergic to penicillin.

