To Draw or Not to Draw:
Drawing Blood Cultures From a Potentially Infected Port Site

**Question:** Should blood cultures be drawn from an unaccessed implanted vascular access device if signs or symptoms of infection are apparent over the port site?

**Answer:** Evaluation of patients with cancer who are febrile should be conducted with particular attention directed to the most frequent sites of infection, including the mouth, lungs, soft tissues, and urinary and gastrointestinal tracts (Pizzo, 1999). Patients who are immunocompromised may present with fever and no localizing symptoms (e.g., erythema over a port site) and no evidence of a specific site of infection. A complete history and physical examination should be performed, as well as a complete blood cell count, cultures of blood and urine, and a radiographic chest film, with stool and oropharyngeal cultures when indicated (Pizzo). Further specific studies are necessary when patients’ presenting symptoms warrant additional examination. This may include lumbar puncture or additional radiographic films.

Because vascular access devices alter the skin defense barrier of patients who are immunocompromised, their presence increases the risk for infection (Pizzo, 1999). Although these devices can greatly improve vascular access for patients with cancer, they must be considered as a potential source of infection in patients who are febrile and immunocompromised. Totally implanted intravascular devices (IVADs) have the lowest reported rate of catheter-related bloodstream infections, possibly because they are located beneath the skin without entry points for microorganisms to enter the bloodstream, and a systemic infection may not result (Ramsey & Richardson, 1995). However, if port-pocket infections occur while the ports are cannulated already, then leaving the needle in place to obtain cultures and administer IV antibiotics is acceptable (Wickham et al.).

Treatment of uncomplicated port-pocket infections requires meticulous site care and either oral or IV antibiotics for 10–14 days (Mermel et al., 2001; Ramsey & Richardson, 1995). Common pathogenic organisms seen with port-pocket infections include Staphylococcus aureus, coagulase-negative staphylococci, and gram-negative bacilli (Mermel et al.). It may not be necessary to surgically remove the implanted device (Raad & Bodey, 1992). However, the device must be removed for all candida infections, port abscesses, and complicated infections, and a course of appropriate antibiotic therapy should be started (Mermel et al.).

Reinsertion of IVADs should not be attempted until systemic antibiotic therapy has begun and repeat blood cultures show negative results (Mermel et al., 2001). Although IVADs have helped to provide patients with cancer with needed infusion therapy, they are not without risks. Prompt assessment of patients who are febrile and immunocompromised is essential, with particular attention paid to likely sites of infection. Assessment of central venous catheter sites is crucial, and blood cultures should be obtained to determine the presence of infectious microorganisms and identify appropriate antibiotics for therapy. Patients with port-pocket infections require expert clinical assessment and should not have cultures drawn directly from the unaccessed port septum itself. Instead, clinicians should rely on peripheral cultures only. The possibility of seeding the bloodstream of patients who are immunocompromised with microorganisms by accessing a port with signs or symptoms of infection should be avoided.

**References**


