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Bone Cultures

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Bone cultures are extremely important in the diagnosis and management of bone infections. The value of bone biopsies lies in obtaining accurate microbiological data and susceptibility profiles. Ideally, these cultures should be obtained before initiation of antimicrobials. In clinically stable patients without concerns for sepsis or other urgent indications for antimicrobial therapy, antimicrobials can be withheld until a good bone sample for culture is obtained.

1. **Vertebral osteomyelitis [1]:** Image-guided aspiration biopsy is recommended unless a pathogen has been identified by blood cultures (*Staphylococcus aureus*, *Staphylococcus lugdunensis*) or serology (*Brucella* species). In patients with sepsis or hemodynamic compromise, prompt initiation of antimicrobials is indicated and if there are focal neurological deficits, emergent surgical intervention is recommended. In patients without sepsis, hemodynamic or neurologic compromise, holding antibiotics for 1-2 weeks prior to obtaining bone culture is reasonable in order to increase the yield from cultures.

2. **Diabetic foot osteomyelitis [2]:** A deep tissue culture by biopsy or curettage after wound debridement is recommended. Avoid superficial swab for culture specimens. In patients without sepsis or hemodynamic compromise, holding antimicrobials for 2 weeks is again the best choice in order to increase microbiological yield.

3. **Pelvic osteomyelitis:** Clinicians often struggle with the management of osteomyelitis secondary to chronic sacral pressure ulcers [3]. A multidisciplinary approach should be pursued with a combination of medical and surgical modalities. A bone biopsy after debridement is needed to establish the diagnosis of osteomyelitis and to obtain cultures. In patients without sepsis or hemodynamic compromise, antibiotics should be held for 2 weeks prior to cultures. But we also need to keep in mind that antimicrobial therapy without a plan to prevent further wound contamination (i.e. diverting colostomy, flap reconstruction) may fail.

Notes

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References:

1. Berbari, E.F., et al., *2015 Infectious Diseases Society of America (IDSA) Clinical Practice Guidelines for the Diagnosis and Treatment of Native Vertebral Osteomyelitis in Adults.* Clin Infect Dis, 2015. **61**(6): p. e26-46.
2. Lipsky, B.A., et al., *2012 Infectious Diseases Society of America clinical practice guideline for the diagnosis and treatment of diabetic foot infections.* Clin Infect Dis, 2012. **54**(12): p. e132-73.
3. Wong, D., P. Holtom, and B. Spellberg, *Osteomyelitis Complicating Sacral Pressure Ulcers: Whether or Not to Treat With Antibiotic Therapy.* Clin Infect Dis, 2019. **68**(2): p. 338-342.