



REMARKS

1 Plain radiograph

- 1.1 Regional radiographs should be the initial examination to determine whether there is any underlying pathological condition.
- 1.2 Typical findings of bone destruction and periosteal reaction may not appear until 10-21 days after the onset of infection because 30-50% of bone density loss must occur before radiographs become abnormal.
- 1.3 Plain radiographs are unreliable to establish the diagnosis of osteomyelitis in patients with violated bone.
- 1.4 Plain radiographs of spine are not sensitive to detect vertebral osteomyelitis but findings of endplate destruction and progressive narrowing of adjacent disc space are highly suggestive of infection.

2 Nuclear medicine

- 2.1 Scans should be interpreted with contemporary radiographs.
- 2.2 Three-phase Technetium-99m methylene diphosphonate (Tc-99m-MDP) bone scan
 - 2.2.1 Bone scan is more sensitive than plain radiography (up to 90% sensitivity).
 - 2.2.2 Bone scan can be positive as early as 3 days after onset of disease (10-14 days earlier than plain radiograph).
- 2.3 Gallium scan
 - 2.3.1 Gallium scan is helpful as conjunction with a bone scan. Combined gallium and bone scan studies has sensitivity of 81-90% and specificity of 69-100%
- 2.4 White blood cells (WBC) scan
 - 2.4.1 This is sensitive and specific for bone infection and particularly useful in violated bone.
- 2.5 Flurodeoxyglucose (FDG) PET
 - 2.5.1 It has high accuracy (up to 96%) for confirming or excluding chronic osteomyelitis.
 - 2.5.2 It may be an alternative to MRI if suspecting chronic osteomyelitis.

3 CT

- 3.1 CT is useful to accurately define sequestra, soft tissue abscesses and bone destruction, and to guide biopsy.
- 3.2 Sequestra, cortical destruction, periosteal reaction and intraosseous gas undetected on MRI can be well seen on CT.

4 MRI

- 4.1 MRI is highly effective for detection of bone marrow edema in spine and long bones.
- 4.2 MRI can reveal the relationship between an infective process in spine, the adjacent spinal canal and soft tissue.
- 4.3 Contrast MRI is sensitive but should be correlated with other imaging studies.

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