



REMARKS

1 General

- 1.1 Uncomplicated acute low back pain and/or radiculopathy is a benign, self-limited condition that does not warrant any imaging studies.²⁻⁶
- 1.2 “Red flags” are indications of a more complicated status of back pain/radiculopathy in the following settings:^{7,8}
 - 1.2.1 Trauma, cumulative trauma
 - 1.2.2 Insidious onset of unexplained weight loss
 - 1.2.3 Age > 50 years, especially women, and males with osteoporosis or compression fracture
 - 1.2.4 Unexplained fever, history of urinary or other infection
 - 1.2.5 Immunosuppression, diabetes mellitus
 - 1.2.6 History of cancer
 - 1.2.7 Intravenous drug abuse
 - 1.2.8 Prolonged use of corticosteroids or osteoporosis
 - 1.2.9 Age >70 years
 - 1.2.10 Focal neurologic deficits with progressive or disabling symptoms, cauda equina syndrome
 - 1.2.11 Duration > 6 weeks
 - 1.2.12 Prior surgery

2 Plain radiographs

- 2.1 They are recommended if any of the “red-flags” are present.⁹⁻¹⁰
- 2.2 Lumbar spine radiographs may be sufficient for the initial evaluation of:
 - 2.2.1 Recent significant trauma (any age)
 - 2.2.2 Prolonged use of steroid
 - 2.2.3 Osteoporosis
 - 2.2.4 Age > 70 years
- 2.3 Oblique views may be useful for specific conditions like spondylolysis and facet joint disease.¹¹
- 2.4 Radiographs have a role in evaluation of alignment, instability, and scoliosis and in postoperative evaluation of instrumentation and fusion.

3 Nuclear Medicine

- 3.1 Bone scan is moderately sensitive but nonspecific in diagnosing tumor, infection or occult vertebral fracture.^{9,10} Specificity of diagnosis of skeletal infection is improved when correlating with gallium scintigraphy.
- 3.2 Bone scan is also useful in surveying the entire skeleton.
- 3.3 Single Photon Emission Computed Tomography (SPECT)/CT improves localization of active sites in bone scan.

4 MRI

- 4.1 Low back pain complicated with the red flags may justify early use of CT or MRI even if radiographs are negative.⁹
- 4.2 MRI is the imaging modality of choice in diagnosing disc herniation.¹⁴⁻¹⁵ If MRI is not available or contraindicated, CT myelogram can be performed.
- 4.3 MRI with contrast is useful for suspected infection and neoplasia.
- 4.4 MRI with contrast allows distinction between disc and scar in post-operative patients.

5 CT

- 5.1 Provides superior bone detail but not as useful in depicting extradural soft tissue when compared with MRI.
- 5.2 Useful for depicting bone/structural lesions and alignment such as spondylolysis, pseudoarthrosis, fracture, scoliosis and stenosis and for post-surgical evaluation of bone graft integrity, surgical fusion and instrumentation.¹⁶

6 Myelography and CT myelography

- 6.1 Complementary to plain CT or MRI and occasionally more accurate in diagnosing disc herniation, but requires lumbar puncture and intrathecal contrast injection.¹⁷⁻²⁰

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