



Clinical Protocol: Lumbar Spine MRI

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PROTOCOL OVERVIEW

This Clinical Protocol advises on indications and guidelines for Lumbar Spine MRI.

INDICATIONS

Urgent Indicators for MRI

1. Evidence of cauda equine or spinal cord compression (urinary retention, spasticity, significant sensory or motor deficits, saddle anesthesia, incontinence, significant or progressive neuromotor deficits)
2. Suspected malignancy (history of neoplasm, unexplained weight loss, concurrent diagnosis of neoplasm, progressive weakness, persistent symptoms in patient older than 50, positive bone scan)
3. Fever associated with back pain (after excluding viral syndrome, particularly in immune-compromised patients or suspected post-operative infection).
4. Suspected osteomyelitis (with positive bone scan, elevated ESR, pain exacerbated by motion and relieved by rest or localized segmental tenderness)
5. Recent significant trauma

Less Urgent Indicators for MRI

1. Chronic Radicular pain of 6-8 weeks duration plus all:
 - a. No improvement despite maximal active conservative treatment for 6 weeks
 - b. Significant interference with daily function
 - c. After consultation with musculoskeletal specialist (rheumatologist, orthopedist, neurosurgeon, etc.)
 - d. Invasive intervention being considered
2. Suspected spondylolisthesis causing either radicular symptoms or spinal claudication
3. Recurrent pain after previous lumbar surgery, to differentiate between scar and bulging disk, if significant new symptoms occur and surgical management is being considered.
4. Spinal claudication indicated by pain worse with prolonged standing or lumbar extension and relieved by sitting or flexion.
5. Suspected inflammatory process of nerve root not secondary to compression or transverse myelitis
6. Scoliosis or curvature along with:
 - a. Rapid progression, short segment, or absence of thoracic apical segment lordosis on plain x-ray
 - b. Infantile or juvenile onset
 - c. Neurofibromatosis
 - d. Abnormal neurologic examination including weakness, decreased rectal tone or urinary dysfunction, clonus or asymmetric DTR's, hyperflexion, left thoracic curve, etc.
7. Congenital spinal deformities such as tethered cord or tight filum terminale, myelocele or myelomeningocele, dorsal dermal sinus, hemangioma, etc.
8. Multiple sclerosis with findings involving a clear-cut sensory level, symptoms of myelopathy
9. Postoperative spinal complications
10. Scoliosis

NOTES

Low Back Pain is among the most common reasons for patients to seek medical attention, yet specific diagnosis cannot be made in about 85% of cases. Fortunately, the vast majority of patients have symptomatic improvement within the first month. Therefore, spinal imaging is not generally necessary during the first month of symptoms except when a 'red flag' symptom is noted on physical exam or history. 'Red flags' suggest a medically emergent condition and require prompt attention.

In the absence of significant pain or neurologic symptoms, routine screening radiographs for acute episodes are not indicated. They should be considered after 6 to 8 weeks for patients who fail to improve after conservative management, particularly for patients more than 50 years of age. Early imaging is indicated for diagnosis of fractures, spondyloisthesis, arthritis, infection, spondylitis and malignancy.

MRI is usually preferred to CT for more specialized imaging and is superior to myelography for most indications. 'Red flag' conditions indicating potential need for MRI include significant trauma, history of malignancy, saddle anesthesia, severe or progressive neurologic deficit and incontinence or urinary retention, among others.

MRI with contrast is useful for suspected infection or neoplasia. In post-op patients, contrast enhanced MRI allows distinction between scar and disk. CT provides superior bone detail, useful for depiction of spondylolysis, pseudoarthrosis, and post-surgical evaluation of bone graft integrity and fusion or instrumentation.

CITATION

1. MCG, 23rd Edition, "Lumbar Spine MRI", 2/26/2019
2. Bradley, WG, Seidenwurm, DJ, et al, National Guideline Clearinghouse, Expert Panel on Neurologic Imaging, American College of Radiology, "Low Back Pain", online publication, 2005, p 7
3. Milliman Care Guidelines, Ambulatory Care, 10th Edition, "Spine, Lumbar (MRI)"
4. Milliman Care Guidelines, Ambulatory Care, 8th Edition, "Low Back Pain, Sciatica, and Arthritis"
5. Apollo Managed Care Consultants, "Medical Review Criteria Guidelines for Managing Care", Eighth Edition, pp 896-7