

Diagnostic Strategies of Spinal Diseases based on Pathophysiology

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조선의대

Spinal disease refers to a condition impairing the backbone. These include various diseases of the back or spine, such as disc degeneration, Lumbar Spinal Stenosis, kyphosis, scoliosis, Ankylosing Spondylitis, Some other spinal diseases include Spinal Muscular Atrophy, Spina Bifida, Spinal tumors, Osteoporosis and Cauda Equina Syndrome.

Spinal disease can be classified according to pathophysiology as follows.

I. Mechanical disorder

- 1) Discogenic pain with or without radicular symptoms
- 2) Discal and facet motion segment degeneration
- 3) Radiculopathy due to structural impingement
- 4) Spondylosis with or without central or lateral canal stenosis
- 5) Macroinstability or microinstability of the spine
- 6) Motion segment or vertebral osseous fractures
- 7) Axial or radicular pain due to a biochemical or inflammatory reaction to spinal injury
- 8) Muscular pain disorders (eg, myofascial pain syndrome)

II. Non-Mechanical disorder

1. Systemic disorders
 - 1) Osseous, discal, or epidural Infections
 - 2) Primary or metastatic Neoplasms
 - 3) Inflammatory spondyloarthropathy

- 4) Metabolic bone diseases, including osteoporosis
- 5) Vascular disorders (eg, AVF, AVM, infarction, atherosclerosis, vasculitis)

2. Neurologic syndromes

- 1) Myelopathy or myelitis from intrinsic/extrinsic structural or vascular processes
- 2) Lumbosacral plexopathy (eg, diabetes, vasculitis, malignancy)
- 3) Acute, subacute, or chronic polyneuropathy (eg, chronic inflammatory demyelinating polyneuropathy, Guillain–Barre syndrome, diabetes)
- 4) Mononeuropathy, including causalgia (eg, trauma, diabetes)
- 5) Myopathy, including myositis and various metabolic conditions
- 6) Spinal segmental, lumbopelvic, or generalized dystonia

3. Referred pain

- 1) Hip disorders
(eg, injury, inflammation, or end–stage degeneration of the joint and associated soft tissues)
- 2) Gastrointestinal, Cardiorespiratory, Genitourinary disorders.

The most common causes are age–related degenerative disc and facet processes and muscle– or ligament–related injuries, also spinal diseases can be divided into nerve root syndromes, musculoskeletal pain syndromes, and skeletal causes.

Through accurate understanding of pathophysiology of spinal diseases, we can make accurate diagnosis of the cause of symptoms and decide effective treatment.