CLINICAL MANIFESTATIONS AND DIAGNOSTIC APPROACHES IN INTERVERTEBRAL DISC HERNIATION

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Abstract: This article provides an overview of the clinical presentation of intervertebral disc herniation and outlines contemporary diagnostic modalities. Emphasis is placed on neurological assessment, imaging strategies, and differential diagnosis to support accurate clinical decision-making.

Keywords: disc herniation; MRI; radiculopathy; neurological deficit; cervical myelopathy; diagnostic imaging.

Introduction

Clinical manifestations of intervertebral disc herniation vary depending on the location and extent of neural compression. Early recognition of symptoms and appropriate diagnostic evaluation are critical to preventing long-term disability. Advances in magnetic resonance imaging (MRI) have significantly improved diagnostic accuracy.

Clinical Manifestations

1. Lumbar Disc Herniation

Common symptoms include:

- Low back pain
- Radiculopathy (sciatica)
- Sensory deficits in dermatomal patterns
- Weakness of affected myotomes
- Positive straight leg raise test

Severe cases may present with cauda equina syndrome, characterized by saddle anesthesia, bowel/bladder dysfunction, and bilateral lower extremity weakness.

2. *Cervical Disc Herniation*

Typical findings include:

- Neck pain
- Cervical radiculopathy
- Upper limb numbness or paresthesia
- Decreased deep tendon reflexes
- Possible myelopathic signs in large herniations

Diagnostic Approaches

Physical Examination

- Neurological assessment (strength, reflexes, sensation)
- Provocative tests (SLR, Spurling test)

Imaging Modalities

1. MRI — Gold standard for soft tissue visualization, nerve root compression, and disc hydration.
2. CT — Useful for bony structures and foraminal stenosis.
3. X-ray — Limited value; assesses alignment and degenerative changes.
4. Electrodiagnostic studies (EMG/NCS) — Helpful in complex or ambiguous cases.

Differential Diagnosis

- Spinal stenosis
- Peripheral neuropathies
- Hip pathology
- Vertebral fractures
- Tumors and infections

Conclusion

Comprehensive clinical evaluation combined with appropriate imaging ensures accurate diagnosis and guides optimal management of intervertebral disc herniation.

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