8.

DISCOGENIC PAIN

Irina L. Melnik, Richard Derby, Binit J. Shah, and Jason Eubanks

CASE PRESENTATION

A 30-year-old secretary presents with the complaint of low back and buttock pain for the past 6 months. There is no radiation of the pain to the lower extremities. The pain occurs mostly with sitting but is also worsened with standing and physical activity. Pain is relieved by lying down. There is no weakness or changes in bowel/bladder/sexual function observed. A course of physical therapy, nonsteroidal anti-inflammatories, and muscle relaxant did not result in noticeable improvement. The patient is referred to the Interdisciplinary Back Pain clinic for further evaluation and management.

Past Medical History is otherwise negative

Social History: History of one pack per day smoking for 11 years; social alcohol consumption is reported; no illicit drug use

Review of systems is otherwise negative

On examination, the patient weighs 74 kg and is 151 cm tall. She is sitting comfortably. Detailed neurologic examination reveals normal sensory and motor function, and reflexes are symmetric and 2+. The lower lumbar spine is tender to deep palpation over the midline. Flexion of the lumbar spine is limited by pain to 15 degrees; extension occurs to 15 degrees with minimal discomfort.

A magnetic resonance image (MRI) of the lumbar spine was obtained and was reported normal with the exception of a mild degeneration of the L4–L5 disc without evidence of disc protrusion. A high-intensity zone (HIZ)/annular fissure is also noted at that level.

QUESTIONS

1. What are potential pain generators in this case, and what is the likely diagnosis?
2. How is the diagnosis confirmed?
3. What is the incidence and prevalence of discogenic back pain?
4. What is the natural history of discogenic back pain?
5. What are the clinical manifestations of discogenic back pain?
6. How is discogenic back pain managed?
   a. Interventional procedures
   b. Psychiatric interventions
   c. Surgical options
7. What is the long-term prognosis for discogenic back pain?

WHAT ARE POTENTIAL PAIN GENERATORS IN THIS CASE, AND WHAT IS THE LIKELY DIAGNOSIS?

Low back pain (LBP) is a very common and complex disease of the spine, and it is one of the leading causes of chronic pain. It has profound effect on individual morbidity as well as on a society as a whole, given its substantial socioeconomic burden.

Many factors contribute to the complex nature of this condition. These include the complexity of the spine as an anatomic structure, with numerous potential pain generators within the spine that may cause symptoms similar in distribution and character. Additional factors may include confounding psychosocial issues, the subjective nature of pain itself, and the limitations of available diagnostic tools.

Targeting specific pain generators through precision diagnostic methods is the first step toward appropriate and effective treatments of spinal pain.[1]

Among common structures that are known to produce LBP are elements of anterior column (vertebral bodies, intervertebral disc [IVD]), middle column (nerve roots, ligaments of the spine, dura, and neural elements), and posterior column (facet joints, sacroiliac (SI) joints, soft tissue, etc.). Each one of those structures, if injured, could present with a specific complex of symptoms or could mimic symptoms similar to other painful structures within the spine.

Despite this complexity, specific tissue pain generators can be hypothesized based on history, physical examination, imaging studies, and response to directed treatment. Given the fact that these tests have been shown to have low specificity and sensitivity for diagnosing chronic benign spinal pain,