Central Lumbar Stenosis

Diagnosis/Condition:
- Spinal stenosis, Lumbar region
- Central lumbar stenosis, Lumbar spinal stenosis (LSS)

Discipline:
- DC, ND

ICD-9 Codes:
- 724.02

ICD-10 Codes:
- M48.06

Origination Date:
- 09/2008

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Next Review Date:
- 01/2016

The focus of this clinical pathway is central lumbar spinal stenosis (LSS). The general term "spinal stenosis" can be applied to a variety of pathologic conditions that can constrict the central spinal canal, the lateral recess or the intervertebral foramen. Central stenosis is narrowing of the central spinal canal that may be due to a variety of conditions. In contrast, lateral stenosis typically involves an individual nerve root. Causes of central stenosis include congenital (e.g. achondroplasia, ossification of the posterior longitudinal ligament (OPLL) or idiopathic) and acquired (e.g. Paget’s, DISH, degenerative changes). Of these, degenerative change is the most common and can cause compression by one or more of three mechanisms: disc protrusion or herniation, osteophytic or ligamentous overgrowth into the spinal canal and spondylolisthesis or some combination of these. Central LSS is particularly common in the 5th and 6th decade of life although it occurs occasionally in younger patients. An estimated 1.2 million individuals in the United States (U.S.) experience back or leg pain from stenosis. LSS is the most common cause of lumbar spine surgery in patients >60 years old.

Symptoms of LSS can range from none to severely disabling and the natural history of the condition is variable. Johnson, et.al. followed 32 untreated lumbar stenosis patients over 4 years and found 75% did not change, 15% worsened and 15% improved. Treatments vary from “watchful waiting” to aggressive spinal surgery. Rates of surgery in the Medicare population are increasing and there is evidence of 12-fold geographic variation in rates of surgery across the U.S. While surgery appears to produce better results in the short term, long term results are similar among surgical and non-surgical patients. Conclusions from a recent 8-10 year follow up study “support a shared decision-making approach among physicians and patients when considering treatment options for lumbar spinal stenosis.” A Cochrane Collaboration review in 2005 concluded that “Surgical investigations and interventions account for large health care utilization and costs, but the scientific evidence for most procedures is still limited.”

Subjective Findings and History
- >60 years of age
- Symptoms can be classified as mild, moderate, marked or severe
- Pain may be felt in the low back or legs, or the legs may feel fatigued.
- Patients commonly walk with a broad-based “simian” gait, hunched over with the hips and knees bent, supported on a walker or shopping cart.
- Patients may experience frequent falling, clumsiness, numbness, tingling, and hot or cold feelings in the legs
- Nocturnal leg cramps are more common in LSS patients
One of the hallmarks of LSS is neurogenic claudication, which is low back or leg pain after a period of walking that progressively worsens, with improvement when the patient sits or flexes the lumbar spine. Neurogenic claudication has a predictive value of about 96% for central stenosis.

Objective Findings
- Diagnostic criteria include:
  - Loss of vibratory sensation in the lower extremities.
  - A sensory or motor deficit occurs in about half of patients with symptomatic lumbar stenosis; the specificity of this finding is about 80%. The deficit may occur bilaterally and in a polyradicular pattern.
  - Symptoms aggravated by standing and extension and often relieved with lumbar flexion.
  - Motor findings are typically mild, and functionally limiting weakness is uncommon.
  - The Romberg maneuver may reveal a wide-based gait and unsteadiness due to involvement of proprioceptive fibers in the posterior columns.
  - Patients may have muscle spasms and trigger points in the glutei and piriformis muscles.

Imaging
- Plain radiographs are not routinely needed. Radiographs may show spondylolisthesis, the extent of disk-space narrowing, end-plate sclerosis, and facet-joint hypertrophy. Foraminal osteophytes, suggesting foraminal stenosis.
- Magnetic resonance imaging (MRI) or computed tomography (CT) may confirm the presence of spinal stenosis but up to 20% of patients >60 years have imaging findings, but no symptoms or signs of central stenosis.
- Further, very little evidence exists correlating degree of narrowing of the lumbar spine with the presence or severity of the signs, symptoms, or conditions associated with stenosis.

Assessment
In many patients, the history and physical examination provide sufficient evidence to make a presumptive diagnosis of symptomatic lumbar spinal stenosis. Ruling out the “red flags” of cauda equine syndrome is crucial. In extreme cases, lumbar stenosis can cause cauda equina syndrome, a syndrome characterized by neuromuscular dysfunction, and may result in permanent nerve damage. Cauda equina syndrome is a true surgical emergency.

Assess for intersegmental and SIJ (sacroiliac joint) dysfunction. Symptoms of LSS overlap with a number of other conditions and the differential for LSS includes vascular claudication, mechanical and neurological causes of low back and lower extremity pain, peripheral neuropathies, osteoarthritis of the spine or hip and trochanteric bursitis. Assess relative and absolute contraindications to spinal manipulation (e.g. advanced degenerative joint/disc disease (DJD/DDD), spondylosis).
Plan
Most guidelines and treatment recommendations suggest a trial of non-surgical treatment before consideration of surgery.

Passive Care
- Distraction mobilization
- Neural mobilization
- Spinal manipulation

Active Care
- Exercises Spinal stabilization and/or mobilization exercises, as necessary
- Medications including gabapentin (Neurontin) and pregabalin (Lyrica), Cortisone (steroid) injections in the lumbar spine (epidural), to decrease inflammation and swelling.

Length of Treatment
Duration and frequency of treatment depend on patient response. Murphy suggests ~13 treatments as an adequate trial.

Referral Criteria
- Failure to respond
- Worsening neurological signs and symptoms, including loss of bowel and bladder control and loss of sexual function.
- Cauda equine syndrome
- Surgical consult

Resources for Patients
Medline Plus

Evidence

http://www.ahrq.gov/clinic/tp/stenotp.htm


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