

Lumbar Disc Herniation

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Editorial

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Lumbar disc herniation commonly known as prolapsed disc or slipped disc occurs in the lower back, between the fourth and fifth lumbar vertebra or between the fifth and the sacrum. Patients suffering from lumbar disc herniation show symptoms affecting the lower back, buttocks, thigh, anal/genital region, and may radiate into the foot and/or toe. A condition known as sciatica in which sciatic nerve is affected is most common. The femoral nerve can also be affected and cause the patient to experience a numb, tingling feeling throughout one or both legs and even a burning feeling in the hips and legs. Lumbar disc herniation is a commonly seen in young and middle-aged patients [3]. The majority of spinal disc herniation cases occur in lumbar region (95% in L4-L5 or L5-S1). The second most common site is the cervical region (C5-C6, C6-C7). The thoracic region accounts for only 0.15% to 4.0% of cases. The economic impact of various disc related disorders, back pain, and/or radiculopathy is in terms of days lost to work and reduced productivity. According to a recent estimate, US health care system spends over \$1 billion annually to tackle the disorders related to lumbar disc herniation [4].

The lumbar intervertebral disc is a complex structure composed of collagen, proteoglycans, and sparse fibrochondrocytic cells that serve to distribute forces exerted on the spine [4]. Herniation of the contents of the disc into the spinal canal often occurs when the anterior side of the disc is compressed while sitting or bending forward to lift weights, and the contents (nucleus pulposus) get pressed against the tightly stretched and thinned membrane (annulus fibrosis) on the posterior side (back side) of the disc. Continuous stretching of the membrane and increased internal pressure (200 to 300 psi) results in the tear and rupture of the confining membrane and eventual movement of the contents of the disc into the spinal canal, pressing against the spinal

nerves, thus producing intense and usually disabling pain and other symptoms. Mutation in genes coding for proteins involved in the regulation of the extracellular matrix, such as MMP2 and THBS2, has been shown to contribute to lumbar disc herniation [5]. More such studies are needed to dissect the genetic component of this growing problem.

In the last decade or so various randomized, controlled trials (RCTs) as well as prospective case-control studies were conducted to compare surgical vs nonsurgical treatment procedures for lumbar disc herniation. These include the Spine Patient Outcomes Research Trial (SPORT) [6] as well as the Maine Lumbar Spine Study (MLSS) [7]. In the MLSS study, patients who had undergone surgery for herniated lumbar disc had more complete relief of leg pain and improved function and satisfaction compared with nonsurgically treated patients over 10 years. But regardless of the kind of treatment received, improvement in the patient’s predominant symptom and work and disability outcomes were similar. Similar results were obtained in the SPORT study where patients with persistent sciatica from lumbar disc herniation improved in both operated and usual care groups. Those who chose surgical intervention reported greater improvements than patients who elected nonsurgical care. A recent study done in Netherlands concluded that early surgery achieved more rapid relief of sciatica than conservative care, but outcomes were similar by one year and these did not change during the second year [8]. More such studies are needed in future to confirm the benefits of surgical and nonsurgical procedures and also between early and late surgeries for lumbar disc herniation. I hope the journal of “Orthopedics & Muscular System” from OMICS Group will play a key role in this direction. The journal “Orthopedic & Muscular System” encompasses the theoretical and practical aspects of information processing and communication ensuring the analysis of scientific information and dissemination of medical data through the application of computers to various aspects of health care and medicine.

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