

Treatment Strategies in Late Recurrent Giant Lumbar Disc Hernia: Two Case Reports

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Abstract

For recurrent disc hernia, the aim is to eliminate factors, which lead to pain, achieve decompression with injuring underlying neural tissue, and to stabilize the site, if instability is observed, and finally, to early mobilize the patient.

For cases with recurrent disc hernia, patients can tolerate the condition, since enlargement of disc hernia is slow. Total laminectomy and bilateral discectomy will ensure neurological deficit-free postoperative course, if recurrent disc hernia is located at central zone and the size is giant. Moreover, one should carefully avoid tear of dura, when fibrotic tissue is debrided and giant disc hernia is excised.

Keywords: Recurrence; Lumbar disc hernia; Magnetic resonance imaging; Fibrosis

Introduction

Lumbar disc hernia (LDH) implies annulus fibrosus torn by lumbar intervertebral disc, resulting with bulge of nucleus pulposus into spinal canal and compression of cauda fibers and radices. Recurrent lumbar disc hernia implies recurrence of disc hernia at same level, after patient has no complaint of pain for minimum 6 months, after patient undergoes discectomy [1]. Incidence of recurrent LDH is varying among different studies, and the incidence ranges from 2% to 18% in the literature; recurrence rate is 7-16% for patients, who had surgical treatment >2 years ago [2,3].

For recurrent disc hernia, the aim is to decompress the neural tissue, which is compressed, eliminate factors, which lead to pain, and to mobilize patient within possible shortest time. For cases with recurrent disc hernia, disc should be excised with total laminectomy, depending on size of hernia at level of recurrence, before instability and tear of dura occur at level of surgery. In this study, we explained the way to manage giant recurrent disc hernia, which is found on contrast-enhanced MRI of lumbar spine that is scanned since recent-onset complaints are specified by patients, who were operated on for disc hernia at level L4-5 5 years ago and at level right L5-S1 9 years ago, respectively, and the study also explains proper surgical approach for such cases.

Case 1

Right leg pain and neurogenic claudication are specified by a 61-year old male patient with a weight of 80 kg and height of 175 cm, who underwent L4-5 left hemipartial laminectomy and discectomy 5 years ago and had no complaint in postoperative course. A substantially large recurrent disc hernia is found at level L4-5 on contrast-enhanced MRI of lumbar spine (Figure 1A and 1B). L4 total laminectomy, bilateral discectomy and fibrosectomy were carried out for the patient. Meanwhile, a small tear of dura occurred. Tear was primarily sutured.

No neurological deficit is noted in postoperative course, and all complaints disappeared. Patient is mobilized with corset.

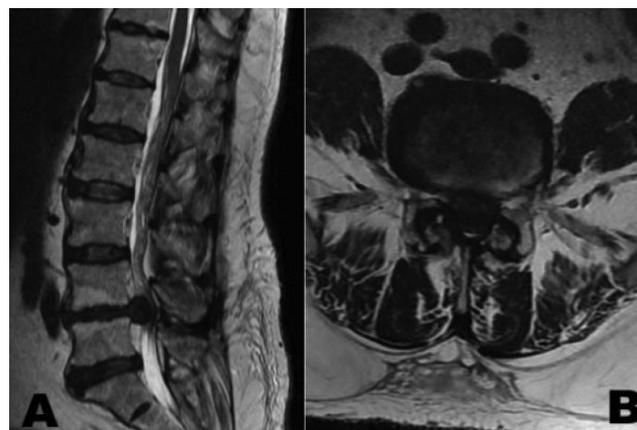


Figure 1A, B: Large recurrent disc hernia, level L4-5 on contrast-enhanced MRI of lumbar spine

Case 2

A 55-year old man with a weight of 85 kg and height of 1.75 m who has underwent right L5 hemipartial laminectomy and discectomy for L5-S1 right discopathy 9 years ago, has no serious complaint thereafter. Recently, right leg pain and neurogenic claudication developed, as specified by the patient, and surgery is planned for the patient, after a giant central recurrent L5-S1 disc hernia (Figure 1C and 1D) is found on contrast-enhanced MRI of Lumbar Spine. L5 total laminectomy, bilateral discectomy and fibrosectomy were carried out, and a small tear of dura occurred. Tear was primarily sutured. All complaints disappeared in postoperative course, and no neurological deficit is observed.

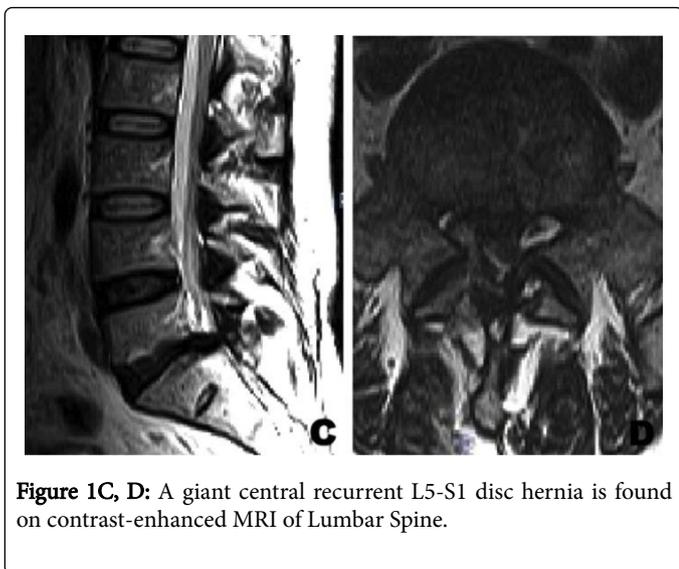


Figure 1C, D: A giant central recurrent L5-S1 disc hernia is found on contrast-enhanced MRI of Lumbar Spine.

Discussion

Selection of patient has significant influence on success rate of surgical management method in lumbar disc hernia, and success rate may rise above 95% [4]. For cases with anamnesis of lumbar surgery for disc hernia, recurrence of disc hernia is among factors, which determine long-term success. It is not possible to excise entire disc in order to avoid recurrence, and therefore, it is necessary to completely extirpate disc tissue beneath posterior longitudinal ligament, along with excision of degenerated disc fragment, which is responsible for clinical picture and tends to bulge [5].

When etiology of recurrent lumbar disc hernia is evaluated, primary factors include injury of annulus in previous surgery, migration of free fragment, which was missed in previous surgery, and incomplete excision of herniated disc.

It is known that various factors exert influence on prognosis of recurrent lumbar disc hernia. Frequency of recurrence is also depending on duration of follow-up. Davis advocates that follow-up period should be minimum 4 years for lumbar disc hernia [6]. Finnegan et al. reported that prognosis will be better, if clinical symptoms are manifested within 1 year or less than 6 months [7]. O'Sullivan et al. reported that shorter time elapsed for revision after first surgery; better clinical recovery will be in postoperative course [8]. However, postoperative findings of patient were notably good, although 5 and 9 years have elapsed since first surgery.

Diagnosis of recurrent lumbar disc hernia is based on recurrence of sciatica and contrast-enhanced MRI of lumbar spine. In other words, contrast-enhanced MRI of lumbar spine is the gold standard for diagnosis. It is a very useful technique for differentiating fibrotic tissue from recurrent disc hernia, since disc hernia shows no contrast uptake on contrast-enhanced MRI, while fibrotic tissue demonstrates contrast fixation. Preoperative determination of this condition will assist surgeon to determine best intra-operative approach.

There is no standard approach for management of recurrent lumbar disc hernia. Therapeutic approach will vary depending on case with recurrence and surgeon. However, conservative managements should be tried, before a surgical treatment is considered, similar to that of primary disc hernia.

Surgical treatment of cases with recurrent disc hernia is debated, including but not limited to hemipartial laminectomy + re-discectomy + fibrosectomy, total laminectomy + re-discectomy + fibrosectomy, total laminectomy + re-discectomy + fibrosectomy + stabilization with fusion [9]. Fusion can be considered for recurrent disc hernia, if instability, deformity or axial pain is noted [10]. Functional lumbar X-ray films should be obtained to determine whether there is instability, before surgery is considered for cases with recurrent disc hernia. Unnecessary stabilization will be obtained, if it is verified that there is no instability. Moreover, total laminectomy and bilateral discectomy should be carried out, if recurrent disc hernia causes central compression, if there is hard disc or if size of hernia is giant, similar to our cases. Surgeon should be extremely careful to avoid dura injury, while recurrent disc hernia is excised and fibrosis is extirpated. Some surgeons claim that excision of disc alone will be sufficient and fibrotic tissue should be extirpated without causing dural injury, and that it is not proper to excise fibrotic tissue completely [11].

Conclusion

In current study, we make efforts to emphasize that for cases with giant recurrent disc hernia, total laminectomy should be carried out and disc should be bilaterally emptied in order to avoid injury of neural structures, while the defect is decompressed. Moreover, functional X-rays should be preoperatively scanned to avoid unnecessary stabilization, and surgeon should be very careful to cause dura defect or instability, while laminectomy is performed and fibrotic tissue is excised.

References

1. Suk KS, Lee HM, Moon SH, Kim NH (2001) Recurrent lumbar disc herniation: results of operative management. *Spine (Phila Pa 1976)* 26: 672-676.
2. Park JS, Choi SE, Cho TK, Kim SH, Rhee W, et al. (2013) Recurrence Rate after Herniotomy only versus Discectomy in Lumbar Disc Herniation. *Korean J Spine* 10: 227-231.
3. McGirt MJ, Ambrossi GL, Dato G, Sciubba DM, Witham TF, et al. (2009) Recurrent disc herniation and long-term back pain after primary lumbar discectomy: review of outcomes reported for limited versus aggressive disc removal. *Neurosurgery* 64: 338-344.
4. Loupasis GA, Stamos K, Katonis PG, Sapkas G, Korres DS, et al. (1999) Seven- to 20-year outcome of lumbar discectomy. *Spine (Phila Pa 1976)* 24: 2313-2317.
5. Hirabayashi S, Kumano K, Ogawa Y, Aota Y, Maehiro S (1993) Microdiscectomy and second operation for lumbar disc herniation. *Spine (Phila Pa 1976)* 18: 2206-2211.
6. Davis RA (1994) A long-term outcome analysis of 984 surgically treated herniated lumbar discs. *J Neurosurg* 80: 415-421.
7. Finnegan WJ, Fenlin JM, Marvel JP, Nardini PJ, Rothman RH (1979) Results of surgical intervention in the symptomatic multiple-operated back patients: analysis of sixty seven cases followed three to seven years. *J Bone Joint Surg Am* 61: 1077-82.
8. O'Sullivan MG, Connolly AE, Buckley TF (1990) Recurrent lumbar disc protrusion. *Br J Neurosurg* 4: 319-325.
9. Niu CC, Chen LH, Lai PL, Fu TS, Chen WJ (2005) Single cylindrical threaded cage used in recurrent lumbar disc herniation. *J Spinal Disord Tech* 18 Suppl: S65-72.
10. Resnick DK, Choudhri TF, Dailey AT (2005) Guidelines for the performance of fusion procedures for degenerative disease of the lumbar spine. Part 8: lumbar fusion for disc herniation and radiculopathy. *J Neurosurg* 2: 673-678.

11. Zileli M, Özer AF (2014) Omurilik ve Omurga Cerrahisi kitabı 1: 685-692.