

Pediatric lumbar disc herniation

Less than one percent of surgery for [lumbar disc herniation](#) is performed on patients between the ages of 10 and 20 yrs (one series at Mayo found 0.4% of operated HLD in patients < 17 yrs of age ¹⁾). These patients often have few neurologic findings except for a consistently positive [Lasègue's sign](#). ²⁾ Herniated disc material in youths tends to be firm, fibrous and strongly attached to the cartilaginous endplate unlike the degenerated material usually extruded in adult disc herniation. Plain radiographs disclosed an unusually high frequency of congenital spine anomalies ([transitional vertebra](#), [hyperlordosis](#), [spondylolisthesis](#), [spina bifida](#)...). 78% did well after their first operation ³⁾

[Lumbar disc herniation](#) (LDH) is a common disorder among [adults](#) with degenerated lumbar [intervertebral discs](#). However, its occurrence in [childhood](#) and [adolescence](#) is much less frequent mostly because children and adolescents tend to have a healthier [lumbar spine](#) as compared with adults. This difference indicates that children and adolescents are far from being just little adults. Over the years, there have constantly been published studies concerning this entity where the findings suggested that pediatric LDH is, in many ways, different from that in adults. To date, the prevalence, the etiological and the diagnostic features of pediatric LDH have been fully described in the [literature](#) whereas the characteristics regarding the treatment are yet to be reviewed in details. The aim of a review of Dang et al. was to provide a collective opinion on the treatment of pediatric LDH as well as its outcome. It reviewed the relevant information available in the literature and compared the results among and within various treatments. It was found that pediatric patients responded less favorably to [conservative treatment](#) as compared with adults. In addition, the outcome of surgery remained to be satisfactory for at least 10 years after the initial operation, even though it appeared to deteriorate slightly. This was the first literature review focusing on the treatment of pediatric LDH. ⁴⁾

The purpose of a [review](#) of Raghu et al. was to assess characteristics of pediatric LDH, evaluate current surgical [techniques](#) and their outcomes in recent [literature](#), and compare paediatric outcomes with adults. A literature search was carried out identifying articles published from 2008 to 2018 relating to surgical treatment of LDH in children and adolescents. Original articles were scrutinized for outcome data and [complications](#) then compared by surgical approach. Over the last decade 1094 surgical cases have been published, mostly L4/L5 (52%) and L5/S1 (41%) intervertebral discs. These were predominantly operated with [microdiscectomy](#) and minimally invasive techniques: [percutaneous endoscopic](#) and [minimally invasive tubular microdiscectomy](#). [Cystic fibrosis](#), trauma, extensive athletic activity, facet joint asymmetries and [lumbosacral transitional vertebrae](#) may be risk factors for LDH. 55% had total resolution of pain after surgery, complications are rare and unsatisfactory resolution of pain and re-operation uncommon. In the short and medium-term, overall, pediatric patients do not have worse surgical outcomes than adult patients; they may recover faster and improve more. Minimally invasive approaches for LDH in adolescents are safe and efficacious. No technique has yet demonstrated clear superiority. Delaying surgery for conservative treatment is warranted, but for how long remains unclear ⁵⁾.

Case reports

A 27-month-old child fell from his cradle and developed, in the following 2 weeks, irritability, low-back pain, and difficulty in walking. On physical examination a compensatory gait, paravertebral muscle spasm, and a restricted right straight-leg raising test were demonstrated. Plain x-ray films revealed a narrowed L4-5 intervertebral space. Magnetic resonance imaging of the lumbosacral spine demonstrated decreased signal in the L4-5 disc, with posterior disc protrusion. At surgery, blood infiltrating the subperiosteal plane was observed. Via a left hemilaminectomy and under microscopic magnification, the left L-5 nerve root was found to be intact, and on the right side significant nerve root compression was identified. During dissection an accidental dural tear occurred. A right L-4 hemilaminectomy was performed, and the disc fragments were removed until a complete nerve root decompression was obtained and the dura was repaired. The child recovered uneventfully and was asymptomatic 7 years postsurgery. This child is one of the youngest patients with a herniated disc reported in the world literature. The authors discuss the diagnostic difficulties and management of this entity in children ⁶⁾.

References

1) , 3)

Ebersold MJ, Quast LM, Bianco AJ. Results of Lumbar Discectomy in the Pediatric Patient. J Neurosurg. 1987; 67:643-647

2)

Epstein JA, Epstein NE, Marc J, et al. Lumbar Intervertebral Disk Herniation in Teenage Children: Recognition and Management of Associated Anomalies. Spine. 1984; 9:427-432

4)

Dang L, Liu Z. A review of current treatment for lumbar disc herniation in children and adolescents. Eur Spine J. 2010 Feb;19(2):205-14. doi: 10.1007/s00586-009-1202-7. Epub 2009 Nov 5. Review. PubMed PMID: 19890666; PubMed Central PMCID: PMC2899810.

5)

Raghu ALB, Wiggins A, Kandasamy J. Surgical management of lumbar disc herniation in children and adolescents. Clin Neurol Neurosurg. 2019 Aug 9;185:105486. doi: 10.1016/j.clineuro.2019.105486. [Epub ahead of print] Review. PubMed PMID: 31445324.

6)

Revuelta R, De Juambelz PP, Fernandez B, Flores JA. Lumbar disc herniation in a 27-month-old child. Case report. J Neurosurg. 2000 Jan;92(1 Suppl):98-100. PubMed PMID: 10616065.

From:

<https://neurosurgerywiki.com/wiki/> - **Neurosurgery Wiki**

Permanent link:

https://neurosurgerywiki.com/wiki/doku.php?id=pediatric_lumbar_disc_herniation

Last update: **2024/06/07 02:53**

