

- Surgery is required at varying rates depending on symptoms and morphological types of herniation.
- The proportion of patients who underwent conservative treatment and require surgical treatment later ranges widely from 20% to 50% and is related, to some extent, to the intensity of preoperative symptoms.
- No clear relationships between lumbar disc herniation and sports have been shown thus far, and we cannot determine whether sports induce or prevent the development of hernia.

Commentary

A meta-analysis has reported a spontaneous resorption of 66.6%⁷⁾. Meanwhile, a study in residents observing asymptomatic lumbar disc herniation, detected on images, in a longitudinal manner has shown that the majority of hernias remained unchanged in size⁸⁾.

Relationship between the type of lumbar disc herniation and resorption

In the sequestration-type herniation group, symptoms improved 1.3 months after the onset on average. On imaging, hernia regression was confirmed in 9.3 months on average⁹⁾.

A systematic review regarding resorption of lumbar disc herniation has shown that hernia regression was found in 96% of sequestration-type cases, 70% of extrusion-type cases, 41% of protrusion-type cases, and 13% of bulging-type cases¹⁰⁾. The complete resorption rate was 43% in sequestration-type cases, 15% in extrusion-type cases, 0% in protrusion-type cases, and 11% in bulging-type cases¹⁰⁾.

A study in Japan has reported that protrusion-type herniated discs are resistant to resorption, and sequestration-type herniated discs are prone to resorption. Particularly, marked resorption or disappearance of herniated discs was observed in 84% of cases in which lumbar disc herniation migrated more than 1/3 of lower vertebrae in sagittal sections. Moreover, hernia resorption was observed within 3 months in 46% of cases¹¹⁾. In a longitudinal study in South Korea, resorption has been reported to be facilitated when herniation is extrusion-type or sequestration-type or when the initial hernia is larger¹²⁾.

A study with contrast-enhanced MRI has shown that herniated discs imaged in a ring shape are prone to resorption¹³⁾. The thickness of the contrast-enhanced part of margin and the size of protrusion have also been reported to be associated with hernia resorption¹⁴⁾.

Therefore, symptomatic herniated discs are prone to resorption, and sequestration-type and extrusion-type herniated discs, craniocaudally extruded discs, and large herniation are more prone to resorption. Meanwhile, asymptomatic, accidentally discovered hernias often undergo no changes in size and may represent a different pathological condition.

Surgery rate

In several RCTs, the percentage of patients undergoing surgery for lumbar disc herniation varies from 28% to 54%

among patients who underwent conservative treatment for a certain period and depends on symptoms and morphological types¹⁵⁻¹⁸⁾. In the study that investigates the preoperative pain intensity in patients who underwent herniotomy, the mean preoperative ODI and VAS (cm) were 56.7 and 6.1, indicating moderate to severe pain¹⁵⁾. The data have shown that the surgery rate is high among patients with moderate to severe pain even during conservative treatment. Moreover, in morphological types, the decreased rate of undergoing surgery was attributed to noncontained-type herniation, in which the tip of the herniated disc is extruded into the epidural space.

Relationship with sports

Two studies comparing the effects of major sports (baseball, softball, golf, swimming, diving, aerobics, and racket sports) in LDH patients and healthy control showed no significant differences in the incidence of herniation between the two groups^{19,20)}.

No articles showing a clear relationship between lumbar disc herniation and sports activity were found also in the present literature search, and no conclusive statements can be made as to whether the sports activity induces or prevents herniation.

Conflicts of Interest: The author declares that there are no relevant conflicts of interest.

The original version of this clinical practice guideline appeared in Japanese as Yotsui Tsuikanban Hernia Shinryo Guidelines 2021, and its translated version in English was published in the Journal of Orthopaedic Science: Japanese Orthopaedic Association (JOA) clinical practice guidelines on the management of lumbar disc herniation, third edition. 2022;27(1): 31-78.

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