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The Changes of Disc Height and Degeneration in Patients with Lumbar Disc Herniation

June-Kyu Lee, M.D., Jae Sung Ahn, M.D., Chang-Hwa Hong, M.D.[#] and Jung Bum Lee, M.D.

Department of Orthopedic Surgery, School of Medicine, Chungnam National University, Daejeon, Korea
Department of Orthopedic Surgery, Chungju St. Mary 's Hospital, The Catholic University of Korea, Chungju, Korea[#]

– Abstract –

Study Design: The changes of the disc height in patients diagnosed with lumbar disc herniation who underwent a discectomy were subjected to a retrospective study.

Objective: The goal of this study was to find the relationship between the disc height and degenerative disc changes in patients diagnosed with lumbar disc herniation who underwent a discectomy.

Summary of Literature Review: Disc height changes according to age, degenerative change and the amount of removed disc.

Materials and Methods: The patients in this study were those diagnosed with HNP who undergone a discectomy in our hospital. The fifty seven observed patients had a discectomy in our hospital between March, 2001 and March, 2003. Patients who had posterior fusion during surgery were excluded. There were 35 males and 22 females, with an average age of 35.9 yrs old (17- 55) and a mean follow-up period of 2.7 yrs. The degrees of HNP and degenerative disc were examined with MRI and measured through the T2 MRI, respectively, before the operation. The disc heights were measured before and after surgery, and the anterior, posterior and middle disc heights were measured with a simple lumbar lateral X-ray. There were 6, 20, 25 and 6 cases of degeneration grades II, III, IV and V, respectively. There were also 27, 25 and 5 cases of protruded, extruded and sequestered discs, respectively.

Results: When patients with a lumbar disc herniation underwent a discectomy, the changes of disc height in people of those with a postoperative degenerative disc change were notable, but there was no difference in disc height change with regard to the degree of HNP.

Conclusion: In lumbar disc herniation patients after a discectomy, the changes of disc height decrease significantly in severe degenerative discs in the short term; therefore, further long term periods of study will be required.

Key Words: HNP, Disc height, Disc degeneration

Address reprint requests to

Jae-Sung Ahn, M.D.

Department of Orthopaedic Surgery, School of Medicine, Chungnam National University

#640 Daesa-Dong, Jung-Gu, Daejeon, Korea

Tel: 82-42-220-7353, Fax: 82-42-252-7098, E-mail: jsahn@cnu.ac.kr

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1-4)
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1,4-6)
T2
, Thompson
5
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7)
. I
, II
III
, IV
V
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가
(protruded disc)

1.

(extruded disc)
(sequestrated disc)
square test(SPSS 10.0 version)
p
chi-
0.05
3~4
4~6
57
가 22
2.7
35.9(17~55)
가 35
1.
(
(
(
가
(p>0.05, Table 1).

2.

2.

T2
6 , III 20 , IV 25
II
V 6
Zeng-
V
wu Shao¹⁾가
(p<0.05, Table 2).

3. 가

27 , 25 , 가

5 가 25 35 가 40

(p>0.005, Table 3). 80%, 65%

5 - 1 , 4-5

3-4

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(Collagen), (proteoglycan)

90~95%

80%, 78%

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I II , . 가

II I ,

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Table 1. The change of disc height after discectomy(%).

	postop	6 mon	1 yr	2 yr	3 yr
anterior	+7.5	-4.5	-10.4	-14.6	-16.2
middle	+5.6	-5.0	-9.3	-10.2	-14.5
posterior	+7.2	-4.8	-11.2	-12.1	-15.0

Table 2. The relationship between disc degeneration and change of mean disc height after discectomy (mean disc height = anterior+middle+posterior disc height/3)(%).

	postop	6 mon	1 yr	2 yr	3 yr
GII	+6.2	-4.0	-7.7	-5.5	-5.0
GIII	+5.5	-7.5	-9.5	-10.3	-14.7
GIV	+7.0	-6.4	-10.6	-15.0	-17.5
GV	+7.1	-8.5	-13.7	-19.0	-24.3

Table 3. The relationship between herniated disc shape and change of mean disc height mean disc height(%)

	postop	6 mon	1 yr	2 yr	3 yr
Protrusion	+6.5	-4.5	-10.3	-14.3	-14.5
Extrusion	+7.6	-5.8	-11.7	-13.6	-15.5
Sequestration	+7.4	-6.6	-9.6	-14.6	-14.9

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8,9)

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1 g

0.8 mm

Takeshima¹³⁾

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10)

7,10)

3.5%

(1~5)

0.35 mm

11)

5

가

11)

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가

가

2)

가

3)

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60

(bulging)

4,5)

Berlemann⁶⁾

60

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3)

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Twomey^{5,12)}

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Twomey^{5,12)}

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