

# Foraminal lumbar disc herniation

Lumbar disc herniation at the [lumbar intervertebral foramen](#), considered for some authors a type of [extreme lateral lumbar disc herniation](#)

investigate the clinical application value of the modified Lee grading system (abbreviated as the modified system) in evaluating the degree of intervertebral foraminal stenosis (IFS) in patients with foraminal lumbar disc herniations (FLDH). Methods: MRI data of 83 patients with FLDH-IFS (34 patients in the operation group and 49 patients in the conservative group) in Yantai Affiliated Hospital of Binzhou Medical University and Yantai Yantaishan Hospital from March 2018 to February 2021 were retrospectively collected. There were 43 males and 40 females, ranged from 34 to 82 years old, with an average of  $(61 \pm 10)$  years. MRI images of selected patients were independently evaluated and recorded by two radiologists in a blind method, using both the Lee grading system (abbreviated as Lee system) and the modified system, respectively and each method was evaluated twice. The difference between the evaluation level of the two systems, and the agreement of observer assessments of the two systems were compared, and the correlation between the evaluation level of the two grading systems and the clinical treatment modalities was analyzed. Results: The percentage of nongrade 3 (grade 0-2) patients with effective conservative treatment according to the two grading systems was 94.6 % (139/147) and 64.2 % (170/265), respectively. The percentage of grade 3 patients requiring surgical treatment according to the two grading systems was 69.2 % (128/185) and 61.2 % (41/67), respectively. There was a statistically significant difference between the evaluation levels of the modified system and the Lee system ( $Z = -5.16$ ,  $P = 0.001$ ). In the Lee system, the intra-observer observation consistency Kappa values of the two radiologists were 0.735 and 0.542, respectively, which were highly and moderately consistent; and the inter-observer observation consistency Kappa values were 0.426-0.521, which were moderate consistency. In the modified system, the intra-observer consistency Kappa values of the two radiologists were 0.900 and 0.921, respectively, and the consistency was almost completely consistent; and the inter-observer consistency Kappa values were 0.783-0.861, which were highly consistent or almost completely consistent. Lee system and clinical treatment modalities was correlative ( $r_s = 0.39$ ,  $P < 0.001$ ), and modified system and clinical treatment modalities was correlative ( $r_s = 0.61$ ,  $P < 0.001$ ). Conclusion: According to FLDH-IFS, the modified system can comprehensively and accurately grade, with high reliability and reproducibility. The evaluation level has a more significant correlation with clinical treatment modalities <sup>1)</sup>.

<sup>1)</sup>

Li SL, Zhang GW, Qu DX, Li X, Zhu ZL, Tan JW, Qu ZW, Tang XF, Liu XL. [Clinical application value of modified Lee grading system to evaluate the degree of foraminal stenosis in patients with intervertebral foraminal lumbar disc herniation]. Zhonghua Yi Xue Za Zhi. 2023 Apr 18;103(15):1140-1147. Chinese. doi: 10.3760/cma.j.cn112137-20230105-00025. PMID: 37055232.

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