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Ultrasonic characteristics of the protrusions of lumbar intervertebral discs in older children

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The aim of the study was to study the semiotics of the protrusions of Intervertebral Disks (IVD) of the lumbar spine in older children using ultrasonography (USG). The study included the results of ultrasound examination of 63 children with degenerative changes of the IVD without violating the integrity of the fibrous ring (FR) and involvement of the elements of the Vertebral Canal (VC) in the pathological process. In total, 315 IVD were examined, of which changes were detected in 72 (22.9%) disks. USG was conducted at the level of disks L2–L3, L3–L4, L4–L5, L5–S1. Diagnosis of protrusion of the disc was based on a change in the structure of the pulpous nucleus, thinning and protrusion of the fibrous ring toward the vertebral canal for more than 2 mm, reducing the anteroposterior size of the vertebral or radicular canals. Paramedian protrusions occurred in 31 (43.1%) cases, posterolateral protrusions in 18 (25.0%), median - in 15 (20.8%), and circular - in 8 (11.1%) cases, respectively. The protrusion of disks at the level L2–L3 was observed in 3 (4.2%) cases, L3–L4 in 19 (26.4%) cases, L4–L5 in 27 (37.5%), and L5-S1 - in 23 (31.9%) cases, respectively. The greatest decrease in the sagittal size of the VC was observed with the median size, and the cross-sectional area with the paramedian hernia. Ultrasound examination is an alternative method of diagnosing protrusions intervertebral lumbar discs in older children that allows determining the form and level of localization of the degenerative process.

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