

Modern minimally invasive neurosurgery methods in lumbar spinal pain syndromes

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Background: Patients with lower back pain and lumbar disc herniations, currently are proposed various minimally invasive percutaneous surgical methods. The first clinical applications of percutaneous laser nucleotomy in lumbar spinal ??? were conducted by Ascher and Choy in Graz (1986). Adaptation of the holmium laser increases the possibility of the percutaneous methods to the laser foraminoplasty also in cervical spine. Among other modifications, such as endoscopic lumbar discectomy and laser foraminoplasty, endoscopic intradiscal nucleotomy has recently been introduced to percutaneous spine surgery as an exact and minimally invasive method.

Methods: We have been using the holmium laser for treatment of lumbar spinal disc herniations since 2006. First we used the PLDD method. Later we started conducting endoscopic intradiscal nucleotomy (according to the YESS method) with the holmium laser as an assisting tool. The late outcome was assessed using modified McNabb criteria.

Results: We used the percutaneous laser and endoscopic disc nucleotomy adequate to patient's indication. Of 100 patients treated by the PLDD method, 72 (72%) had good or excellent results according to the McNabb criteria, while 21 (21%) had fair, and 7 (7%) unsatisfactory results. We performed endoscopic intradiscal nucleotomy in 53 patients with an intact posterior ligament and predominance of low back pain and lumbar disc herniations. Of the 53 patients, 43 (81.1%) had good or excellent results according to the McNabb criteria, while 10 (18.9%) had fair or unsatisfactory results. There were no postsurgical complications.

Conclusion: We consider the percutaneous laser and endoscopic intradiscal nucleotomy a gentle way of treating lumbar disc herniations with good results. If classic open microsurgery is needed, this initial minimally invasive percutaneous method does not interfere.

Key words: Minimally Invasive Methods, Surgical Treatment, Low Back Pain