

Percutaneous Endoscopic Lumbar Discectomy (PELD)

—Transforaminal approach and indications—

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Objective: Percutaneous Endoscopic Lumbar Discectomy (PELD) is an overnight-stay operation done through a 7 mm incision under local anesthesia. We discuss the transforaminal (TF) method, its indications and results.

Materials and methods: The TF approach was used in 142 cases for L2/3 ~ L5/S1 levels. Of these, 95 were males and 47 were females, with average age of 45.6 years. Patients with both upward and downward migrations of 10 mm and more, with instability, any lateral recess of 3 mm or smaller or osseous proliferation of spondylolysis were excluded from the study.

Results: JOA (Japanese Orthopedic Association) scores before operation and 1, 3, and 6 months later were 11.0 (N=142), 20.8 (N=139), 22.1 (N=118), and 23.0 (N=90), respectively. The VAS (visual analogue scale) for buttock and lower limb were 7.2, 2.3, 1.9, and 1.7, respectively. Open surgery was performed in two cases complicated by canal stenosis. Revision surgery was performed in five recurrent cases. One case of furcal nerve damage occurred. PLIF was performed in one case with remaining instability. Remaining pain in ten cases was tolerable.

Conclusion: PELD has indications for the large majority of lumbar disc herniations not complicated by bone lesions and is a minimally invasive.

Keywords: percutaneous endoscopic lumbar discectomy, transforaminal, thermal ablation

INTRODUCTION

Although the mainstream of MISS [Minimally Invasive Spine Surgery] for lumbar disc herniation is micro-endoscopic discectomy or microscopic discectomy in Japan, PELD requiring smaller dissections, an overnight stay, and little resection of lamina, yellow ligament, muscles, etc. was introduced one year ago.^[1] PELD is a new type of MISS done under local anesthesia and was developed from percutaneous nucleotomy.^{[2] [3]} We discuss mainly the practice and indications, points to keep in mind, and pitfalls of these surgical procedures.

MATERIALS

Subjects: Between April 2007 and May 2008, 142 cases underwent surgery. They consisted of 95 males and 47 females and their average age was 45.6. The TF approach was used in 142 cases in L2/3 - L5/S1 (L2/3: 12 cases, L3/4: 10 cases, L4/5: 92 cases, L5/S1: 28 cases). The selected subjects were those cases with severe pain even after conservative treatment for 6 weeks or more and acute cases immobilized by the intolerable pain. The MRI identified moderate or huge herniation, L4/5 or higher, without upward or downward migration of more than 10 mm. Those cases where instability from dynamic X-rays, narrow (less than 3 mm) lateral recesses from CT scan were apparent or