

## PROGNOSTIC RELEVANCE OF LUMBAR DISCOGRAPHY IN PLDD OF LUMBAR DISC PROTRUSION AND HERNIATION

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*Percutaneous Laser therapy of lumbar disc protrusion and herniation started to replace chemonucleolysis as a "minimally invasive method". Since summer 1993 we chose 32 patients (16 male, 16 female, aged 24-65 years) to perform PLDD-therapy; all of them suffered from lumbar disc protrusions/herniations. The follow up examination, shows that those patients never had long term-improvement; none of them however deteriorated. Only a small percentage of the group showed an improvement of pain (33%) or neurological symptoms (17%), the majority remained unchanged (67% persisting pain, 83% neurological symptoms). There are about 70% of PLDD-Patients with a good outcome/improved complaints and neurological findings during the first year after treatment (4; 2; 7) if discography is performed and its result is considered. It appears that clinical success after PLDD depends mainly on a critical selection of patients, including especially the results of preoperative discography; patients with ruptured annulus fibrosus should be treated by conventional surgery.*

**Key Words:** Lumbar discography, Laser therapy.

1986 the percutaneous Laser therapy of lumbar disc protrusion and herniation started to replace chemonucleolysis as a "minimally invasive method" (2; 1).

### METHOD

In summer 1993 we started to apply PLDD to patients with the clinical symptoms of Lumbago or radicular pain a selection which is common in literature, too (6, 7). We used a Nd: YAG-Laser, 1064 nm, bare fiber, 20 W/pulse with a duration of 1 second; 800 up to 2000 Jules were applied. We used continuous removal by suction to provide a "contact mode."

The selection of patient for PLDD was considered only after a period of nonoperative treatment for at least 6 weeks (Physical therapy, analgesic medication; we took care of their comorbidities (such as psychiatric disorders which might contribute to abnormally exaggerated pain or orthopedic diseases and degenerative changes of the spine to prevent a poor outcome after PLDD, not due to the method (5); this explains our small group of "PLDD-patients").

The clinical diagnosis was confirmed in all cases by CT-scan, MRI or Myelography and postmyelographic CT.

### RESULTS

Since summer 1993 we chose 32 patients (16 male, 16 female, aged 24-65 years) to perform PLDD-therapy; all of them suffered from lumbar disc protrusions/herniations (sensory disturbance, positive straight leg raising, no motor weakness).

In the beginning some patients with a rupture of the "annulus fibrosus" were also treated (5 out of 25 patients); 7 patients were treated by PLDD without preceding discography.

The follow up examination, shows that those patients never had long term-improvement; none of them however deteriorated.

Only a small percentage of the group showed an improvement of pain (33%) or neurological symptoms (17%), the majority remained unchanged (67% persisting pain, 83% neurological symptoms).

On the other hand there are much better results in the group with lumbar discography before PLDD which proved an unruptured "annulus fibrosus": 71% achieved an improvement of pain and neurological symptoms, only 29 percent had no benefit (4 patients). Only one of them was referred for surgical treatment. The others preferred another attempt at conservative treatment.

Ten patients had to undergo conventional surgery later: Nine of them belonged to the group without discography/with ruptured disc, only one patient to the second group (unruptured disc).

### DISCUSSION

Our results show a good correlation with those in other studies: There are about 70% of PLDD-Patients with a good outcome/improved complaints and neurological findings during the first year after treatment (4; 2; 7) if discography is performed and its result is considered. There was no complication or deterioration after PLDD in our patients; the rate of complications in the literature is very low, about 0.2% discitis (4).

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Although this study is limited by the small sample size and lacks statistical significance, it appears that clinical success after PLDD depends mainly on a critical selection of patients, including especially the results of preoperative discography; patients with ruptured annulus fibrosus should be treated by conventional surgery, for a sequestered disc-herniation is to be expected.

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