

Keywords: low back pain, discal pain, discal protrusions, disc extrusion, chemonucleolysis, DiscoGel®

BACKGROUND:

Low back pain affects 60 – 80 % of population, at least once in life. Less invasive methods of treatment began to appear very early and they also allowed the reduction of discal protrusions in neural structure compression. They should have the same effect as microdiscectomy. The intervertebral disc is accessed through injection site on the skin. This is called percutaneous nucleotomy, where the therapeutic effect on a disc is achieved with the help of different methods (thermal, mechanical, chemical).

Only chemical nucleolysis with DiscoGel® was used in this study.

OBJECTIVES: Is chemonucleolysis safe alternative and effective method for degenerative discal disease treatment?

DESIGN and METHODS:

The study includes 140 patients that had chemonucleolysis done on their lumbar spine, 76 men and 64 women.

The procedure was done in local anesthesia and antibiologic prophylaxis with Garamycin under strict aseptic conditions. The intervertebral disc was accessed under the control of the X-ray. After the procedure patients rested for 2 hours and after that discharged in domestic care.

Indications for chemonucleolysis:

- unsuccessful conservative treatment of low back pain or/and ischialgic pain for 6 weeks,
- the operative treatment was not indicated on the MRI scan and
- no neurological deficits were observed in physical status.

Ethanol (DiscoGel®)

It is hard to control the injection of ethanol fluid into the discal space, therefore more viscous preparations were invented. For better visualization under fluoroscopy, radiopaque tungsten granules are added. This reduces the risk of leakage into surrounding tissues. In this study Visual Analog Scale (VAS) and Oswestry low back pain disability questionnaire was used (ODI) to evaluate patient's daily activities.

Out of 140 patients:

76 had chemonucleolysis on 1 intervertebral disc,

60 had chemonucleolysis on 2 discs and

4 had chemonucleolysis on 3 discs in one session.

This makes a total of 208 chemonucleolysis. 107 patients also had a facet blockage of one or two segments with anesthetic and corticosteroid mixture. 33 patients did not have facet blockage.

RESULTS:

All patients who underwent chemonucleolysis had the first checkup in our hospital within 3 months. 20 patients did not show up for the first checkup.

Out of 120 patients:

- 10 were necessarily hospitalized due to the deterioration of pain,
- 2 newly diagnosed avascular necrosis of femoral head were detected in 2 patients,
- 1 patient had severe post-puncture headache,
- 1 patient had a fresh injury, that wasn't connected to his previous visit to the hospital
- 54 patients needed further procedures, because they were not satisfied with the achieved result,
- 22 needed additional chemonucleolysis of 1 or 2 intervertebral discs,
- 23 needed additional facet blockage,
- 1 patient needed RTG assisted infiltration of neuroforamina,
- 5 patients needed a microdiscectomy,
- 2 patients were enrolled on the waiting list for lumbar fusion and
- 1 patient acquired one caudal blockage.

Since only 120 out of 140 patients gave the information about their treatment outcome satisfaction, the following percentages were calculated in the way where 100% means 120 patients. 43,4% (52) of patients reported improvement, while 41,66% (50) reported feeling the same and 15% (18) were feeling worse.

CONCLUSION:

There is a lot of controversy in studies about the actual effect of chemonucleolysis on degenerated discs with ethanol. It is very important that the disc height is preserved at least 50%, and this was always taken into account. The results of this study show that chemonucleolysis treatment was successful in only 43,3 %. Many patients reported a transient improvement in the first 2-3 weeks, after which the pain returned. This short lasting improvement is most likely attributed to the effect of facet blockage, which is also the reason, why some of the patients felt immediate improvement right after the procedure.

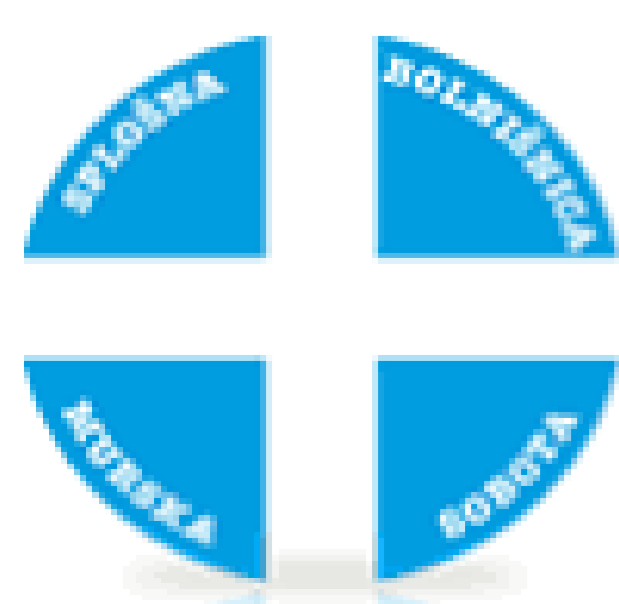
I personally believe, that chemonucleolysis is a good and effective method, if the indications are correct. Also we must exclude all the other differential diagnoses, which can mimic low back pain and leg pain. The pathomorphologic substrate must be correctly recognised.

LITERATURE

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