

# **PERCUTANEOUS ENDOSCOPIC TRANSFORAMINAL DISC ABRASION – A NEW MINIMALLY INVASIVE SURGICAL METHOD FOR THE REGENERATION OF PAINFUL DEGENERATIVE LUMBAR DISCS**

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## **Objective**

Managing chronic low back pain presents a relevant challenge to the spine specialist. The objective of this prospective clinical study was to determine the outcome in a group of patients with therapy resistant chronic function-limiting low back pain who met the criteria for artificial disc or interbody fusion, but were instead treated with a minimally invasive Percutaneous Transforaminal Disc Abrasion.

## **Method**

66 patients, with a discography proven one level painful disc who failed conservative treatment were treated by means of the Endoscopic Percutaneous Transforaminal Disc Abrasion. All treated discs were dehydrated and had no nucleus. The procedure was performed in local and intravenous anaesthesia. A percutaneous transforaminal approach to the posterior segment of the involved disc was performed using special reamers up to 7.5 mm. The disc was opened with a curette and cleaned with special forceps's. Then with a special reamer and an awl the lower endplate was perforated into the subchondral bone until abundant bleeding was visualised.

## **Results**

Cohort integrity at one year follow up was 94%.The overall satisfaction at one year was 74.3%. According to the Modic Scale Patients were subdivided into 4 Groups. Modic-1a (disk height >50%); Modic-1b (disk height <50%), as well as Modic-2a and Modic-2b. Best results were obtained in patients with pre operative Modic-1a and Modic-2a changes, with 82.14% and 81.25% re-hydrated neo-nucleus at 3 month and at one year a back-pain improvement of 6.17 and 6 points on the VAS scale. According to MacNab 89.29% of the patients with Modic-1a and 81.25 with Modic-2a showed excellent or good results.

75% of the patients with pre operative Modic-1b changes and 40% of the Modic-2b group, showed a re-hydrated neo nucleus at 3 month and at one year a back pain improvement of 1 and 2.3 points on the VAS scale. According to MacNab only 12.5% of the Modic-1b group and 30% of the Modic-2b group showed excellent or good results.

The recovery duration of patients with Modic 2 was nearly twice as long as for patients with Modic 1. Patients with a shorter anamnesis had a better outcome according to VAS and a better re-hydration than patients with longer pain duration. 2 Patients needed further surgery, one fusion and one ETA. There were no complications.

## **Conclusion**

The abrasion appears effective in painful degenerative disc disease, particularly when disc narrowing is not more than 50% and in the presence of Modic 1 changes.