



Comparative Study of Various Minimally Invasive Lumbar Discectomy Procedures Based on Clinical Outcome, Muscle Injury Markers and Postoperative Imaging Changes

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Introduction

Microdiscectomy has become the standard surgical procedure for discectomy. Newer techniques like endoscopic discectomy and microsurgical tubular discectomy are available but superiority over microdiscectomy not proven.

Methods

A prospective observational study of patients with lumbar prolapsed intervertebral disc treated by microdiscectomy (MD) and microsurgical tubular discectomy (MTD) through tubular retractors (metrx tube) was performed in the department of neurosurgery SVIMS Tirupati India. from march 2014 to march 2015. All the patients with single level lumbar disc were examined in detail and the clinical findings, visual analog scale scores (VAS), Oswestry disability index (ODI) was assessed preoperatively and postoperatively. All patients were subjected to evaluation of serum levels of creatine phosphokinase, C-reactive protein, pro inflammatory cytokines IL8 and IL6. The cross sectional area of the multifidus muscle was measured at the affected disc level before surgery, postoperative day 1 and at 6 months after surgery using standard sagittal and axial T1 and T2 images, STIR sagittal and axial images.

Results

A total of 60 patients were included in the study with 30 patients in each arm. There was statistically significant improvement in the VAS and ODI scores in all the groups postoperatively. All patients were equally satisfied in respect to pain relief irrespective of the procedure used. Muscle injury markers were similar in MD and MTD groups. Multifidus muscle injury and atrophy was more in MD but was not significant.

Conclusions

Microdiscectomy and microsurgical tubular discectomy gave similar clinical results. MTD was not more efficient than microdiscectomy.

Learning Objectives

Microdiscectomy is still the gold standard for lumbar discectomy.

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