Evaluation of lumbar fusion in recurrent disc prolapse

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LIST OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF ABBREVIATION

RLDP	Recurrent Lumbar Disc Prolapse
DM	Diabetes Mellitus
HTN	Hypertension
PLF	Posterolateral Fusion
PLIF	Posterior Lumbar Interbody Fusion
TLIF	Transforaminal Lumbar Interbody Fusion
MRI	Magnitic Resonanse Imaging
CT	Computerized Tomography
PL X–Ray	Plain X–Ray
LSS	Lumbosacral Spine
L	Lumbar Spine

Abstract

Background: Recurrent disc herniation is the most common cause of reoperation after the primary disc surgery, The management of recurrent disc herniation remains somewhat controversial. Surgical treatment for recurrent disk herniation can be broadly categorized as revision discectomy alone or revision discectomy and fusion or percutaneous endoscopic interlaminar discectomy.

Aim of the work: to evaluate and compare the therapeutic effect between different modalities of treatment of the recurrent lumbar disc protrusion (RLDP) through 3 groups: **(1)** First group treated by conventional discectomy. **(2)** Second group treated by discectomy and lumbar fusion either by PLF, PLIF or TLIF**. (3)** Third group treated by percutaneous endoscopic interlaminar discectomy.

Patients and methods: It is a prospective cohort study performed between January 2012 and April 2017 on 150 patients complained of recurrent lumbar disc herniation. They were surgically treated at the Department of Neurosurgery, Ain Shams University Hospitals. All patients are evaluated clinically by VAS, JOA and Oswestry disability index (ODI) through follow up period of 2 years (one month, 6 months, 1 yr, 2 yrs). They were divided into 3 groups (I&II and III) each group was a fifty patients

Results: the mean overall recovery rate is 89%, comparison between the three groups showed significant improvement of the endoscopic group and fixation group than simple discectomy group in term of VAS LBP, leg pain , JOA and ODI. Intraoperative blood loss, length of operation and hospital stay were significant less in endoscopic group than fixation and simple discectomy group

CONCLUSION: Recurrent lumbar disc prolapse management is a controversial issue, there are different surgical modalities (either by open discectomy, discectomy and fixation or Percutaneous interlaminar lumbar discectomy PEILD) although those surgical modalities are successful the PEILD is the optional choice that offers less tissue trauma, rapid recovery, less cost effect and early return to work

INTRODUCTION

The strict definition of recurrent disc herniation is the presence of herniated disc material at the same level, ipsi- or contralateral, in a patient who has experienced a pain-free interval of at least 6 months since surgery. The clinically more appropriate definition, however, is disc herniation at the previously operative site and side. The pain-free interval should not be restricted to the minimum of 6 months. It has been suggested that the mean interval for recurrent pain associated with recurrent herniated discs is 18 months, longer than that for de novo herniated discs or symptomatic epidural fibrosis. **(Erbayraktar et al., 2002)**

Mixter and Barr first discovered the link between sciatica and the lumbar disc herniation in 1934. Since then different surgical procedures for lumbar disc prolapse has been are in practice. Primary discectomy gives good results but re-operation carries higher rate of complications and psychological factors should be taken in lower rate of success. (**Mixter WJ, Barr)**

However, although relief of sciatica after operation is satisfactory, this procedure still suffers from some difficulties, especially recurrent sciatica, low back pain (LBP) and the problems of repeat surgery.

Although, various factors contribute to the failure of disc surgery, recurrent disc herniation remains the major source of disability. **(Llmo et al., 2001)**

Recurrent lumbar disc herniation (RLDH) is a major cause of surgical failure, the incidence of which is reported from 5 to 11%, with an increased incidence as the follow-up period is extended. (**Cinotti et al., 1998)**

Revision spinal surgery is more challenging than primary surgery, owing to the indistinct anatomical planes and perineural scarring. **Ebeling et al., (1989)** reported a complication rate of 13% after repeated discectomy, and dural tears and infections were the most common problems. However, TLIF provides an approach through facetectomy to enter unscarred virgin tissue. Therefore, the surgeon can approach the target site safely without demanding dissection of the fibrotic scar tissues, and excessive retraction of scarred nerve root and dura, the potential risk of dural tear and nerve injury may also be decreased. **(Kim and Michelsen, 1992; Lehmann and La Rocca, 1981)**

The optimal technique for treating RLDH is controversial. Some authors believe that repeat discectomy is the treatment of choice, with similar clinical results compared to the primary procedure, (**Cinotti et al., 1999; Papadopoulos et al., 2006)** but approach-related complications can be considerable. Scar tissue