

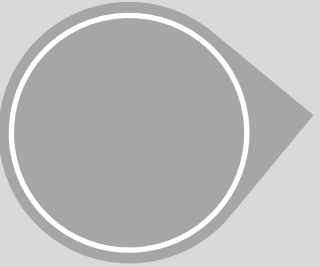


PERCUTANEOUS ENDOSCOPIC LUMBAR DISCECTOMY (PELD) IMPROVEMENT OF QUALITY IN PATIENT LIFE ON BASIS OF PATIENT SATISFACTION AND RECOVERY

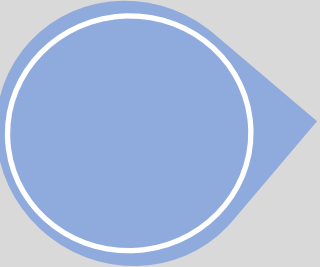
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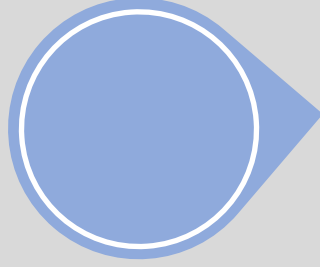
- INTRODUCTION
- PROBLEM DEFINITION
- PROBLEM DIAGNOSIS
- PROBLEM REMEDY
- LOCKING THE IMPROVEMENT
- CLONING THE IMPROVEMENT
- DATA ANALYSIS
- TANGIBLE RESULTS
- INTANGIBLE RESULTS
- ANNEXURE



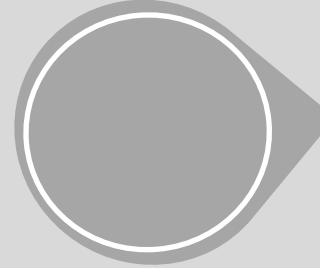
Low back pain is a **major clinical problem** that results in an important socioeconomic burden, which appears to be **increasing despite** technical and therapeutic advances in its diagnosis and treatment.



Percutaneous Endoscopic Lumbar Discectomy--**PELD, under Local Anaesthesia** is currently the **flagship** of minimally invasive transforaminal decompression.



Kambin and Gellman first introduced PELD in 1983 to remove affected disc material under local anesthesia for direct neural decompression.



PELD was further developed with the **Yeung endoscopic spine system (YESS)/ Gore's system** and transforaminal endoscopic spine system techniques became a feasible alternative for **open and mini open** surgeries.

PROBLEM DEFINITION

Patient's apprehension towards open surgery and **complexities** of anesthesia in patients with multiple comorbidities including diabetes, hypertension, chronic kidney disease, stroke, COPD etc.; in whom general anaesthesia has increased risk, has led us to conduct a review on how the Endoscopic technique differs from conventional open lumbar discectomy in terms of Patient satisfaction and Acceptance.

PROBLEM DIAGNOSIS

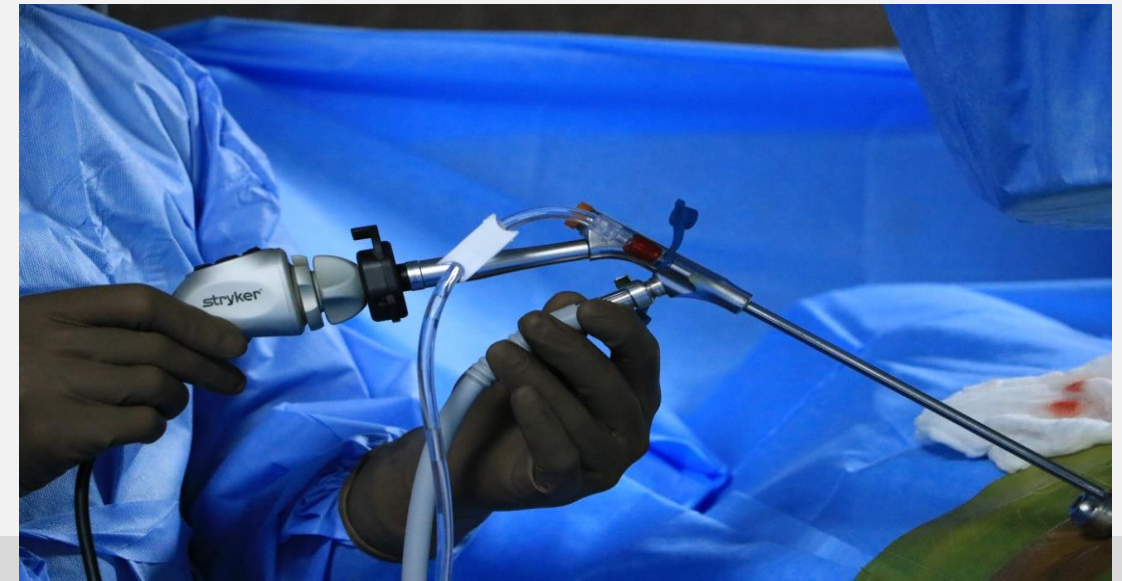
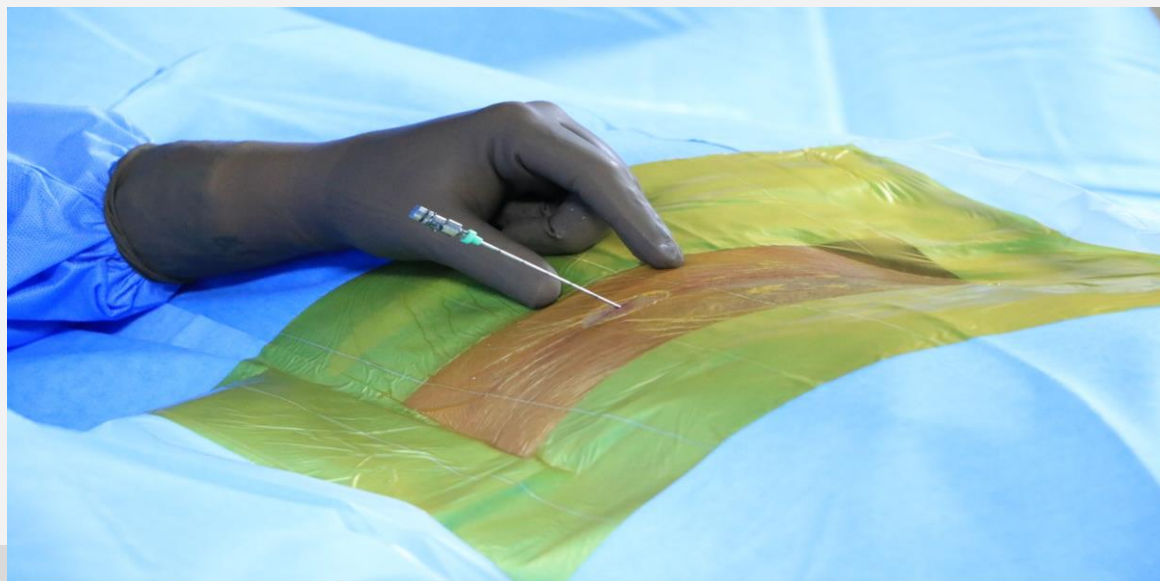
A prospective study was performed on 230 patients who had undergone PELD between September 2018 and July 2019 at Aster Mims, Kottakkal. This included patients who presented with Lumbar intervertebral disc prolapse, both central and paracentral disc herniation, or radiculopathy.

All **230 cases** underwent PELD on Lumbar vertebral levels, based on standard indications, with patients in the prone position. **Chart review** was carried out, and preoperative, intraoperative, and postoperative radiographic reviews were performed. **Patient satisfaction** was defined as a maintained reduction in pain and absence of recurrence within preceding months, with no further surgery being necessary

PELD has a number of advantages over open lumbar discectomy (Conventional). **Firstly**, it can be performed under **Local anesthesia**, which supports communication between patients and surgeons during the operation and is beneficial to the intraoperative protection of the nerve root and rapid mobilization postoperatively. **Secondly**, approach-related complications, such as Dural tear and cerebrospinal fluid fistulas are minimized in patients receiving PELD.

In contrast to traditional open surgical techniques, PELD involves a **lateral** rather than a midline approach, introducing an endoscope to the disc space through the foramen, thus avoiding damage to the vital lumbar structures. The annulus is cut and prolapsed disc material retrieved through the annular tear, keeping the dural tube free from compression, and therefore providing immediate relief to the patient.

PROBLEM DIAGNOSIS- SLRT, GORE'S SIGN, TECHNIQUE



Patients apprehension towards open surgery can be overcome.

Patient is more comfortable being conscious and more receptive to the procedure.

Awake patient provides an excellent **Neuro-monitoring-**avoiding neural damage

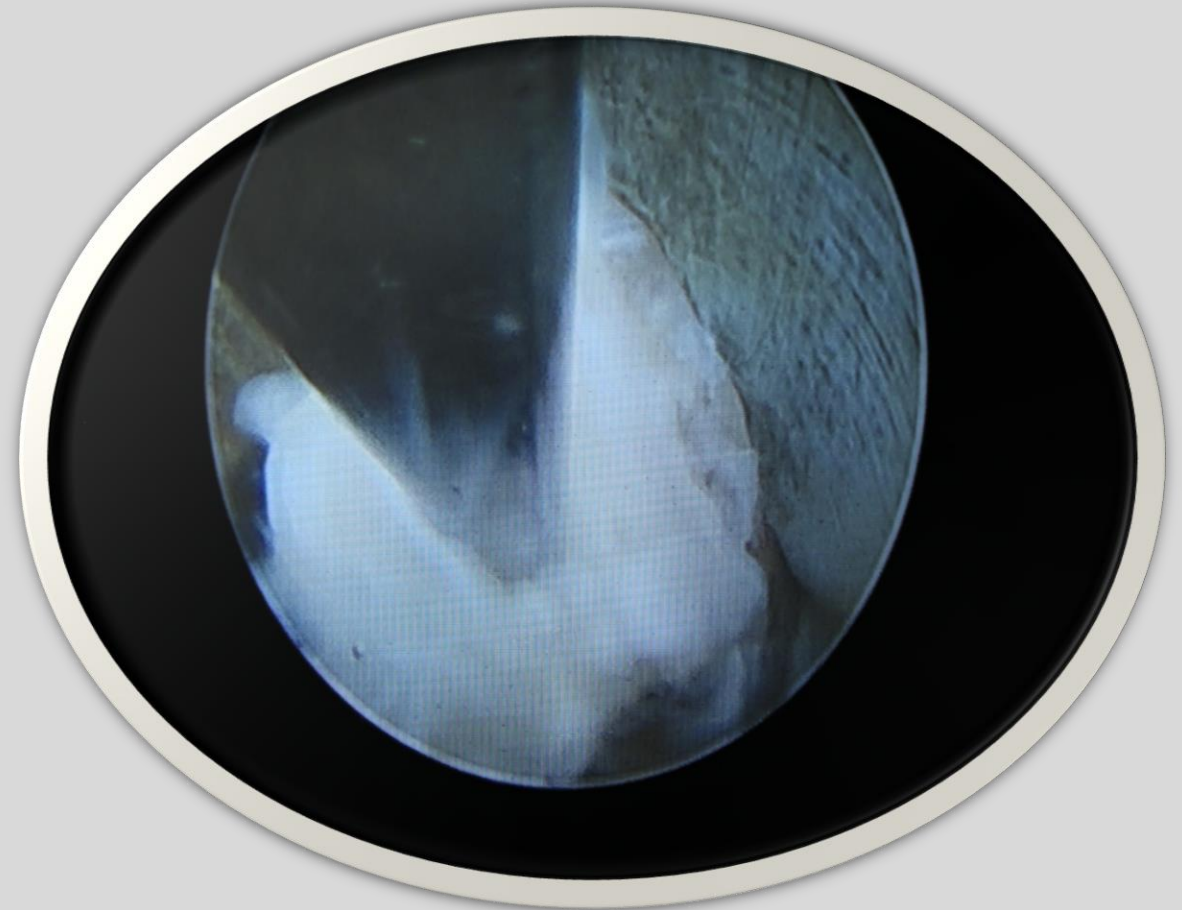
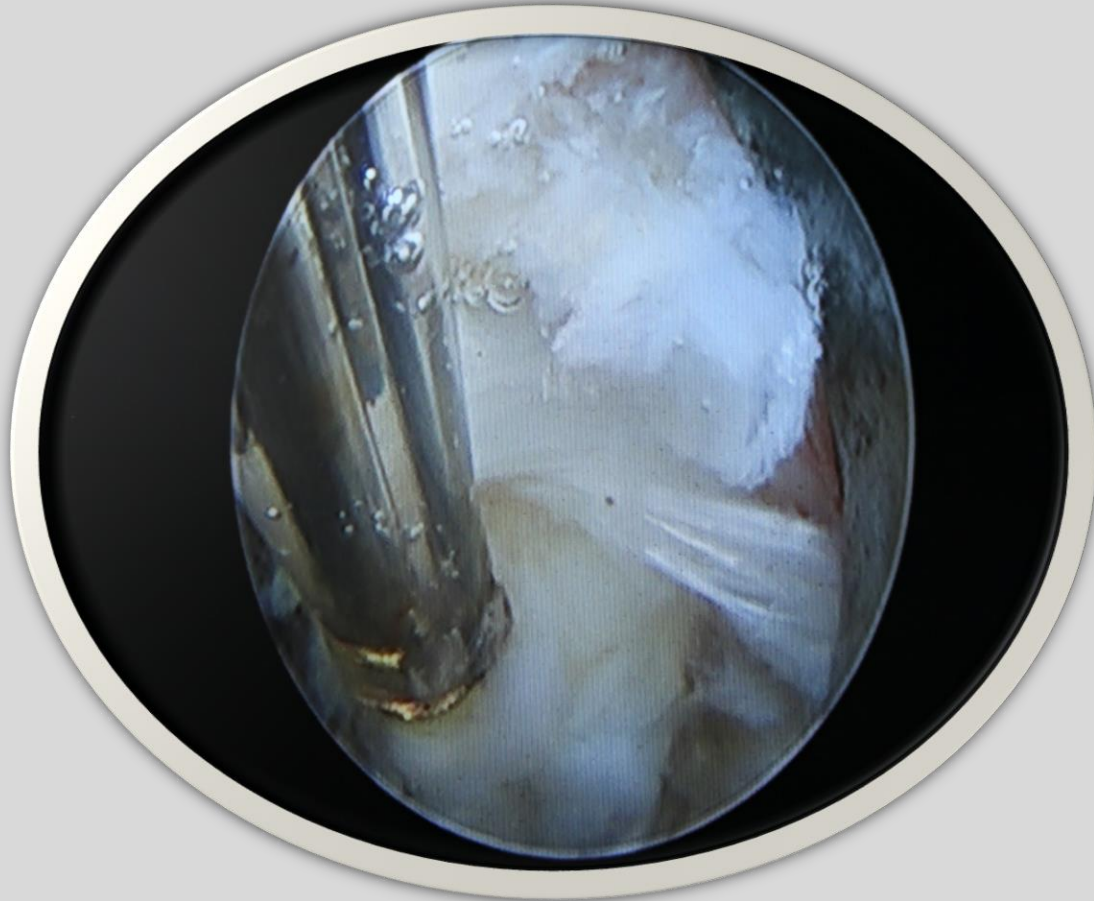
The complexities of general or regional anesthesia in patients with multiple comorbidities are reduced.

The post-operative period is uneventful with the patient ambulatory post-surgery itself.



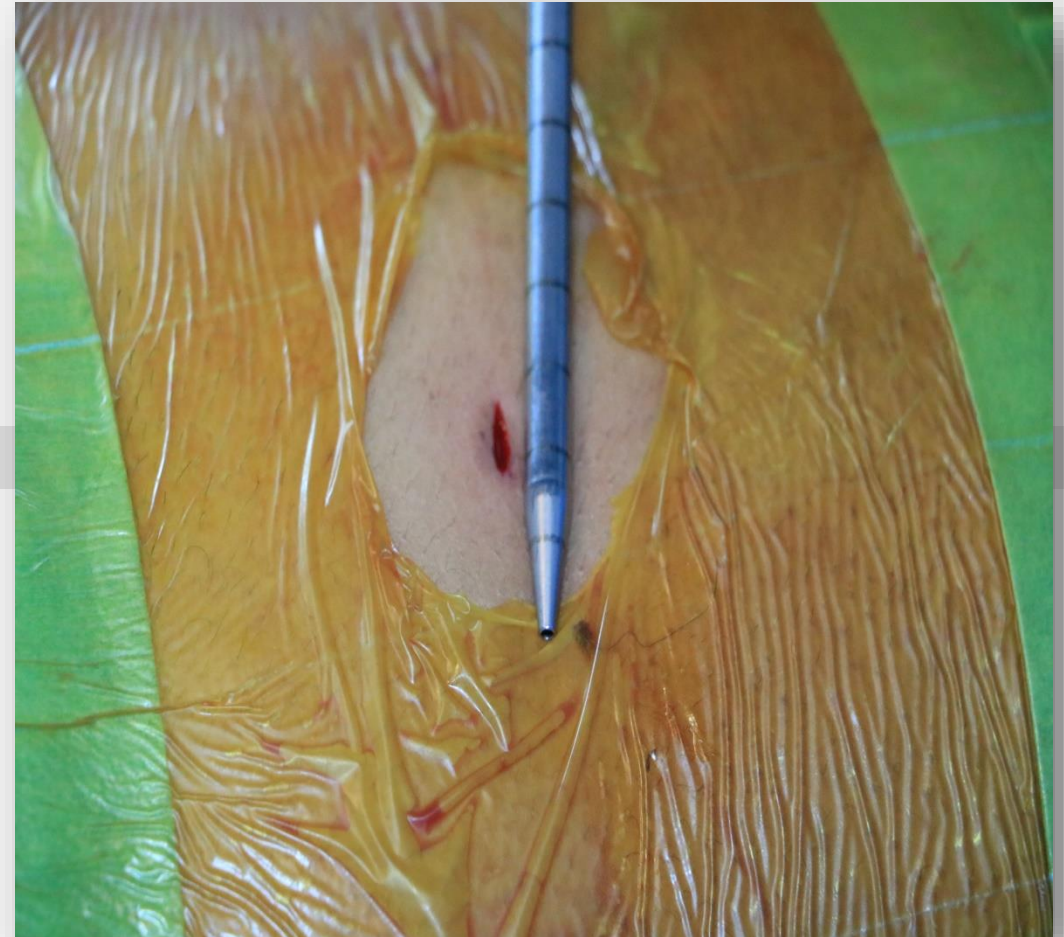
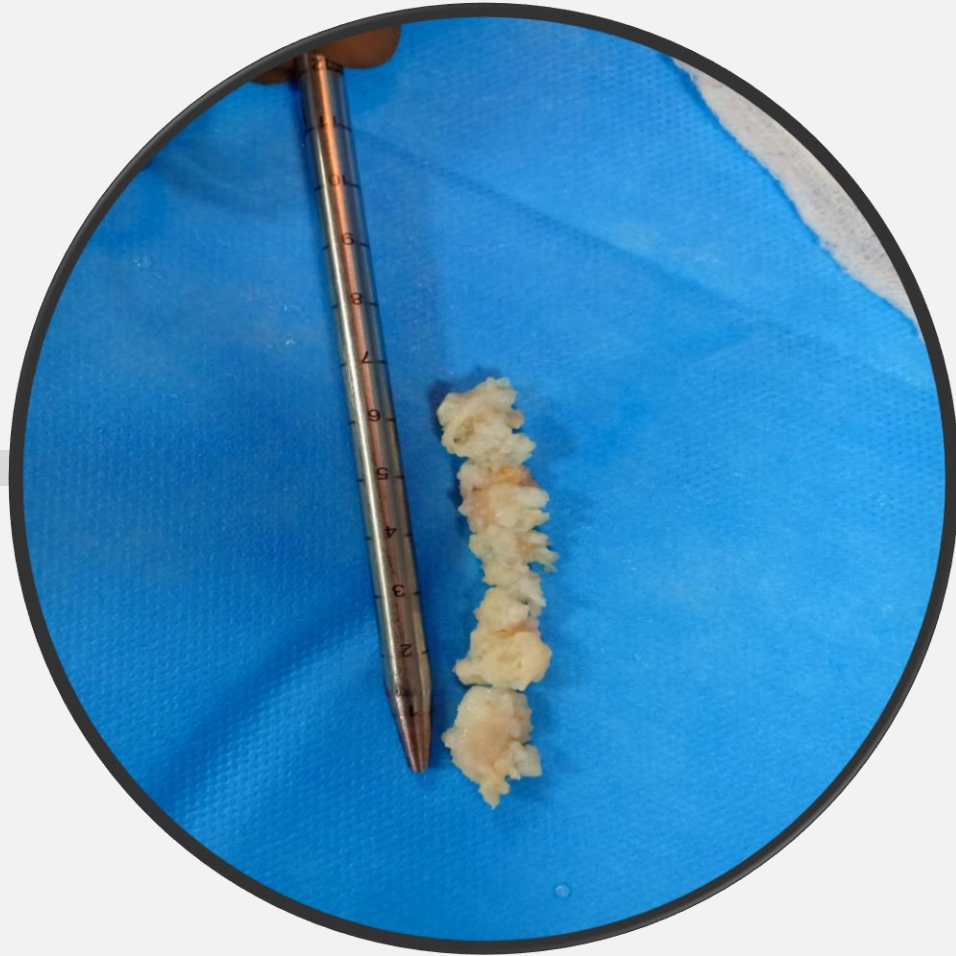
PELD.....**FRAGMENT-ECTOMY**

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PROBLEM REMEDY

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LOCKING THE IMPROVEMENT

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Considering the clinical outcome, **we at our centre** have largely replaced open Lumbar discectomy with PELD, leading to a better clinical outcome and reducing the involved morbidity of an open surgery.



Considering the significant benefits of PELD we have extended:

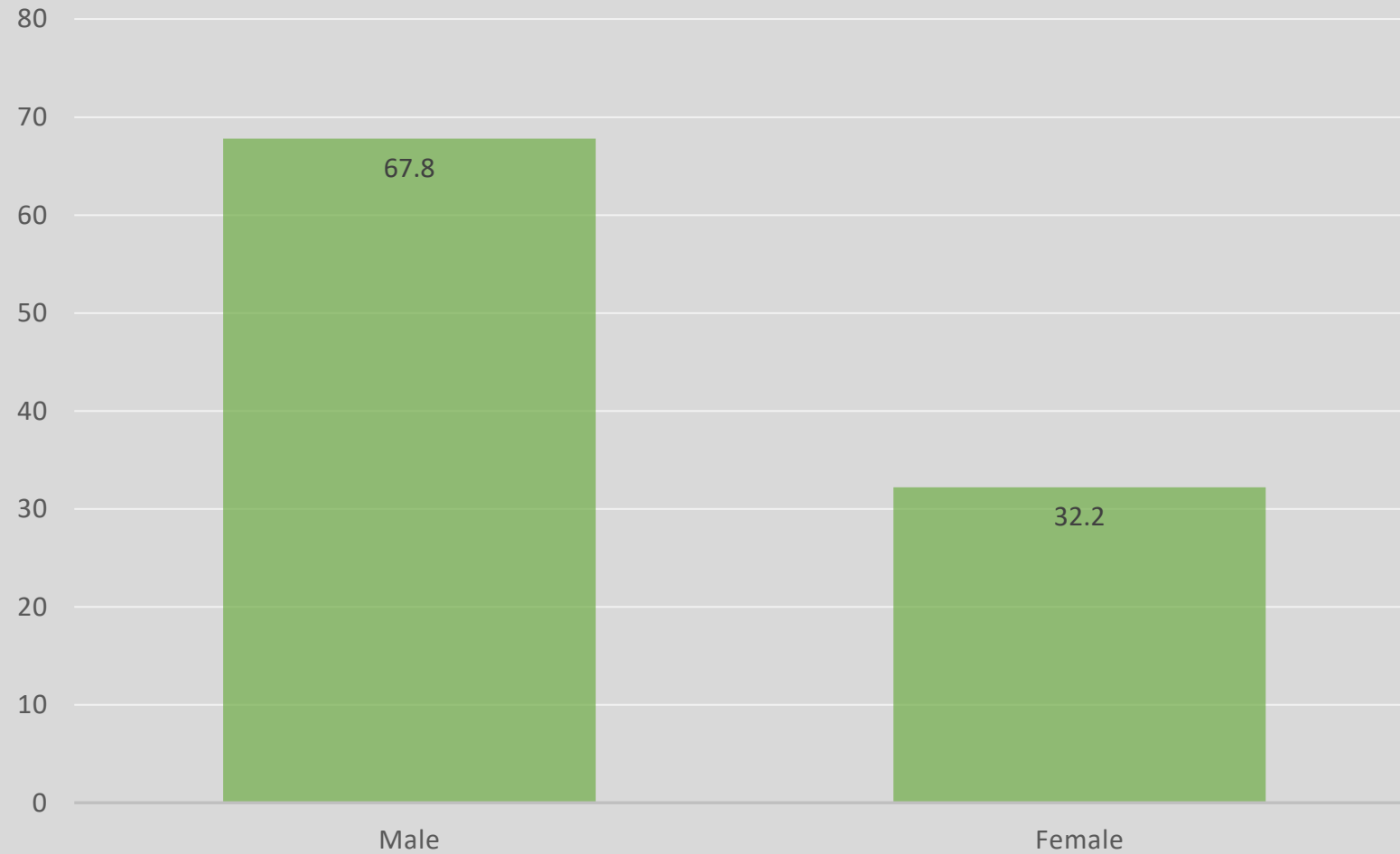
- @ similar procedure for multi-level lumbar discs T12-L1, L1-L2, L2-L3 levels
- @ For Biopsies and Cultures - TB discitis, Pyogenic discitis
- @ As an adjuvant in **spinal stabilization**-for disc preparation and Cage insertion
- @ and intend to extend to **cervical disc prolapse**.

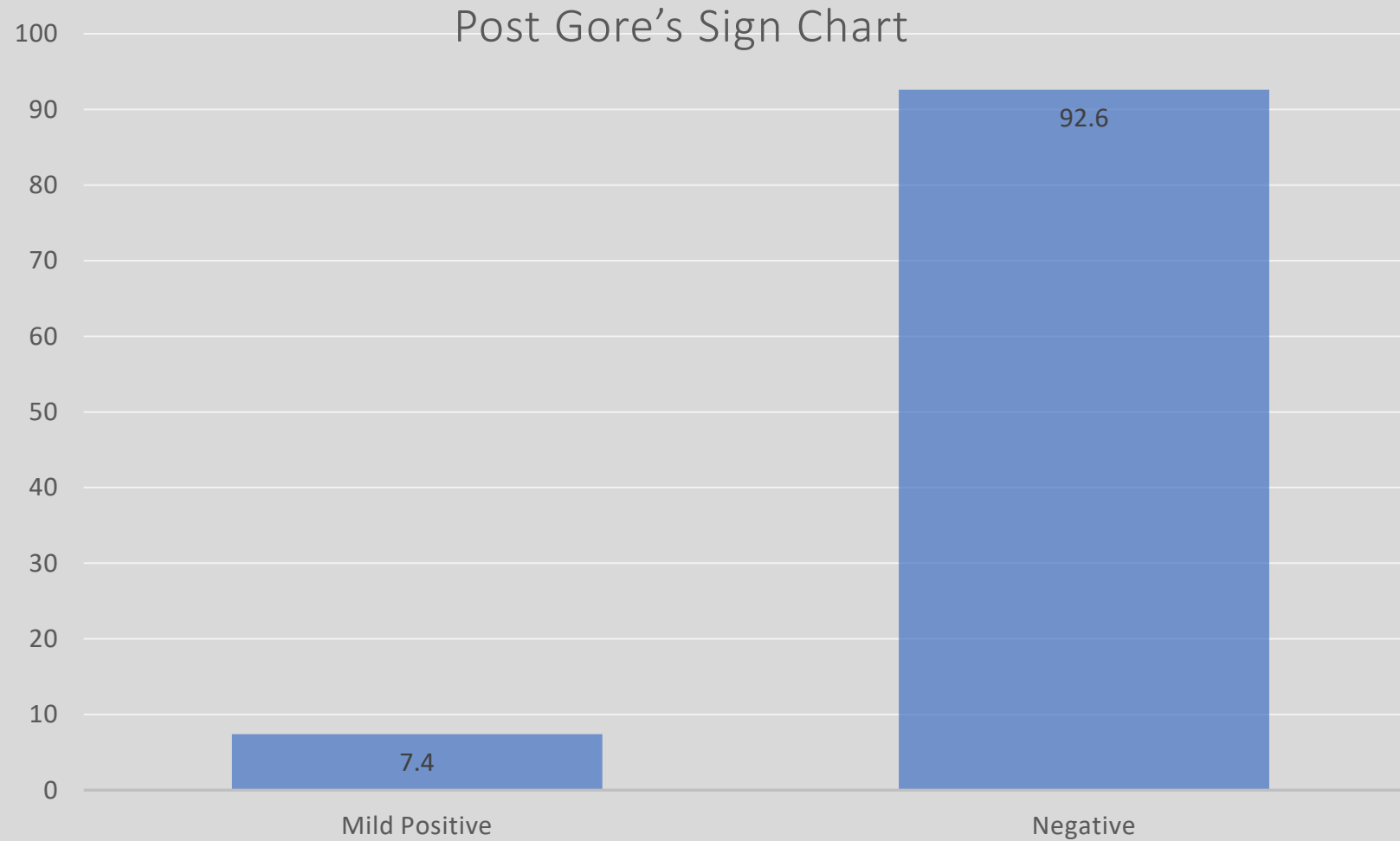


	Total patients (%)
All cases	230 (100)
Male	156 (67.8)
Female	74 (32.2)
Age, years (Mean ± SD)	(45.1±13.6)
Cauda-equina	2 (0.9)
Degenerative lumbar canal stenosis	10 (4.3)
Epidural + local anaesthesia	65 (28.3)
LOCAL ANAESTHESIA	165 (71.7)

PELD right side	116 (50.4)
PELD left side	108 (47.0)
PELD bilateral	6 (2.7)
PELD L3-L4	30 (13.1)
PELD L4-L5	127 (55.2)
PELD L5-S1	73 (31.7)
Pre Gore's Sign (Positive)	230 (100)
Post Gore's Sign	
Mild Positive	17 (7.4)
Negative	213 (92.6)

Male / Female Ratio





- A paired-samples t-test was used for comparing pre SLRT and post SLRT values.

Null Hypothesis : There is no significant difference between pre SLRT and post SLRT values in the PELD group

Alternative Hypothesis : There is significant difference between pre SLRT and post SLRT values in the PELD group

We found that there was a **significant difference** between pre SLRT (60.11 (16.5)) and post SLRT (87.39 (4.4)) conditions ($t(229)=31.43, p < 0.001$)

TANGIBLE RESULTS

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There are various tangible benefits noted of this procedure like inclusion of patients with co-morbidities, shorter operative time, reduced blood loss, short in hospital stay, reduced expenses of hospital stay and less post-operative morbidity.

On table disappearance of Gore sign , LIVE DEMO OF VALSALVA MANOEUVRE – to quantify the disc decompression

Improvement in SLR immediate post op

Unsupported Walking and voiding urine within 1 hr after surgery

No need for catheterization & ICU weaning.

Patients can resume work within 2 weeks leading to an indirect financial benefit.

Less tissue damage – very minimal post-operative pain and morbidity.

Patient satisfaction and acceptance

Earlier recovery

**Cost benefit &
Discharge within 24hrs -DAYCARE PROCEDURE**

ANNEXURE

- **1-2year follow-up--- 90% reduction in pain**
- **3 patients had post -op DISCITIS**
- **Overall complication rate < 5%**
- **Most common post op complaint– Dysasthesia 5-15%(transient)**
- **Our rates of reoperation**, and combined reoperation and recurrence, are similar to those of other studies reporting results from earlier years of PELD implementation ($P>0.05$, Figure 1), and are congruent with the 95.7% of 10,228 patients considered to have had successful outcomes by Choi et al. at 6 weeks post-surgery ($P>0.05$), although this study includes all negative outcomes reported within 24 months.

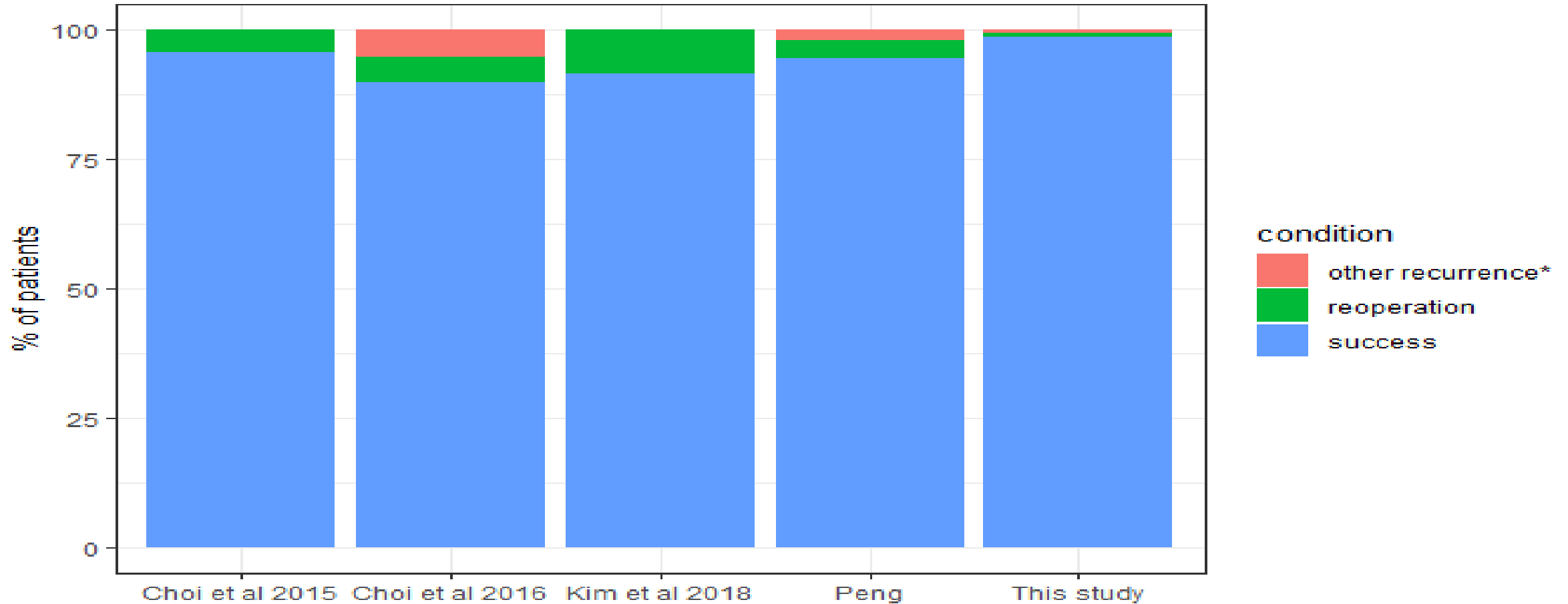


Figure 1. Summary of patient satisfaction outcomes reported in prior studies comparing PELD patient outcomes to other control groups. *recurrence without reoperation statistics not available across all studies.

THANK YOU

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