



# The preliminary results of Randomized Controlled Trials between Interlaminar Endoscopic lumbar discectomy and Microscopic lumbar discectomy at L5S1

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# BACKGROUND

- As an essential component of minimally invasive spine surgery, endoscopic spine surgery has continuously evolved
- Future applications of full endoscopic are expected to increase, which has potentially become a safer alternative option to conventional surgery in selected patients.
- Less high-quality evidence studies comparing Full Endoscopic spine surgery and Microscopic spine surgery for the treatment of lumbar disc herniation at the L5-S1.

# PURPOSE

- The study aimed to evaluate the clinical and radiologic outcomes of **interlaminar endoscopic and microscopic lumbar discectomy** at the **L5-S1 level**.

# METHODS

- Randomized controlled trial.
- April 2016 to December 2020.
- Single-center : The catholic university of Korea, Seoul St. Mary's hospital.
- Patients : back pain & radicular pain with corresponding imaging-confirmed lumbar disc herniation at the L5-S1 level.
- Surgery : Interlaminar Endoscopic Lumbar Discectomy (IELD); Microscopic Lumbar Discectomy (MLD).
- **Radiologic outcomes (Pre- and postoperative):**
  1. disc height;
  2. Cobb's angles of segmental lordosis;
  3. lumbar lordosis.
- **Clinical outcomes (Pre- and postoperative):**
  - Visual Analog Scale (VAS) scores for low back pain and leg pain.
  - Oswestry Disability Index (ODI).
  - Time spent walking at once and per day.
  - Satisfactory and recovery rate.

# RESULTS

- **Baseline Patient Data**

- The number of registered patients : 37.
- 30 patients were followed up  $\geq 6$  mos.
- 18 patients in the IELD group.
- 12 patients in the MLD group.

Baseline Patient Data	IELD (n=18)	MLD (n=12)
Age	49.30 $\pm$ 16.73	53.13 $\pm$ 16.01
Male/Female	9/9	5/7

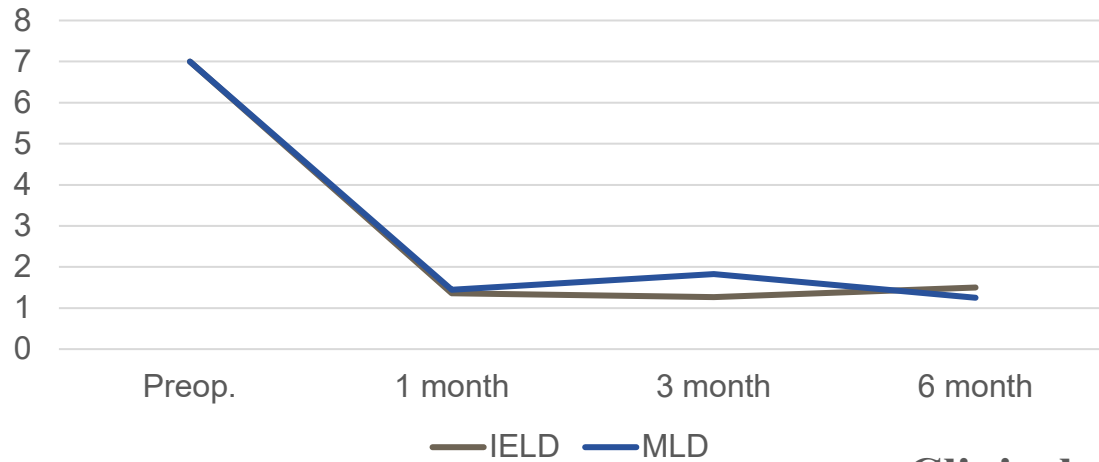
- **Complication Data**

- One patient each in the IDEL group and the MLD group were recurred at the same level.
- One patient had a dura tear while undergoing IDEL, so it was switched to MLD.

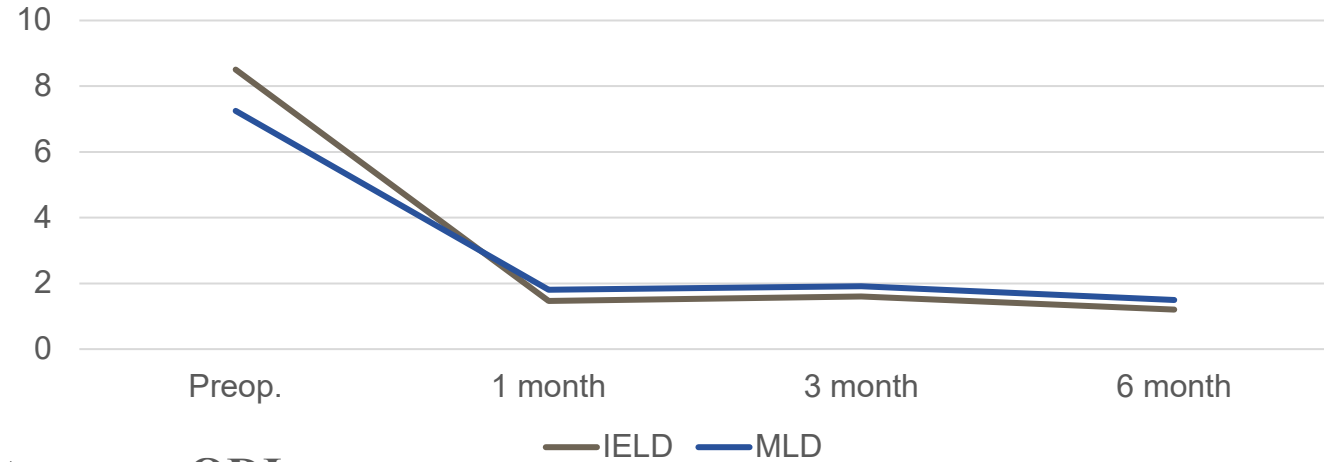
Complication Data	IELD group	MLD group
Recurred HNP L5-S1	1	1
Dura tear	1	0

# RESULTS

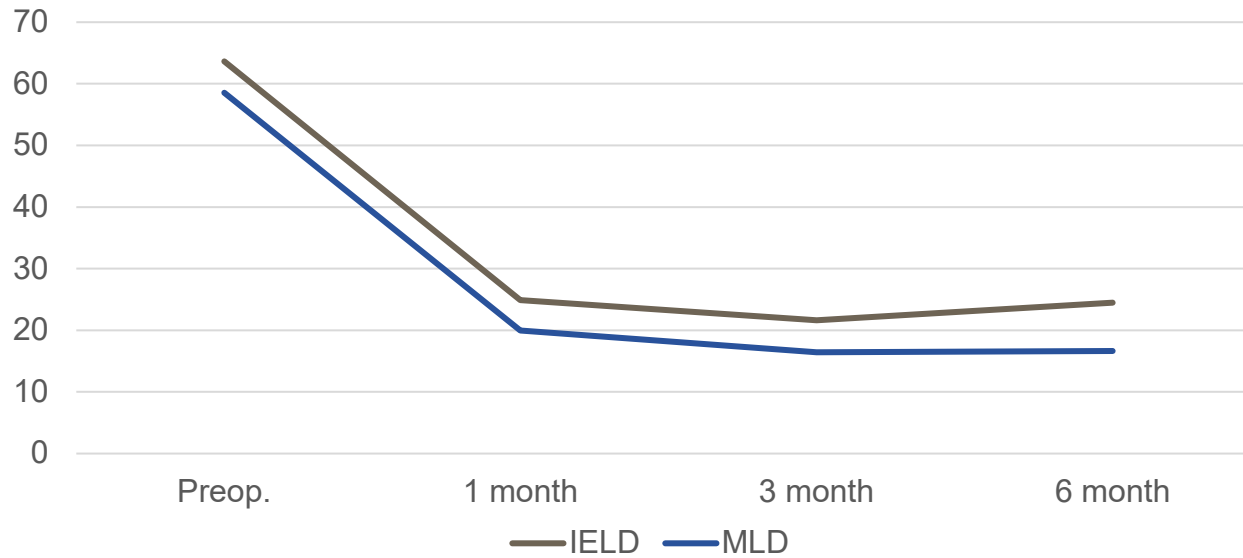
### Clinical outcomes : VAS for back pain



### Clinical outcomes : VAS for leg pain



### Clinical outcomes : ODI



# RESULTS

Clinical outcomes (6 month f/u)	IELD group	MLD group	P-value
Preop Back VAS	7.00±2.67	7.00±3.89	1.000
Postop Back VAS	1.50±5.01	1.25±1.58	0.778
Diff Back VAS	-5.50±3.38	-5.75±4.03	0.888
Preop Leg VAS	8.50±1.18	7.25±1.39	0.062
Postop Leg VAS	1.20±1.55	1.50±2.73	0.772
Diff Leg VAS	-7.30±2.26	-5.75±2.92	0.222
Preop ODI	63.62±16.81	58.53±22.42	0.590
Postop ODI	24.45±14.71	16.62±11.68	0.226
Diff ODI	-39.16±21.50	-41.92±25.39	0.806

Clinical outcomes (6 month f/u)	IELD group	MLD group	P-value
Preop - Time spent walking at once (min)	11.50±8.18	6.63±5.45	0.168
Postop - Time spent walking at once (min)	29.50±18.17	46.88±33.48	0.178
Diff - Time spent walking at once (min)	18.00±17.98	40.25±35.74	0.104
Preop -Time spent walking per day (min)	27.50±13.59	12.50±8.86	0.016
Postop -Time spent walking per day (min)	61.00±44.08	75.00±39.28	0.493
Diff -Time spent walking per day (min)	33.50±49.56	62.50±43.83	0.213
Satisfactory rate	82.00±13.17	91.25±8.35	0.104
Recovery rate	71.00±18.53	80.00±20.00	0.337

DH : disc height, SL : segmental lordosis, LL : lumbar lordosis

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# RESULTS

Radiologic outcomes	ILED group	MLD group	P-value
Preop DH(mm)	8.41±1.68	8.67±2.71	0.805
Postop DH(mm)	9.69±1.62	9.66±3.29	0.975
Diff DH(mm)	1.29±2.28	0.99±1.05	0.738
Preop SL(°)	8.63±4.63	9.66±5.27	0.664
Postop SL(°)	10.02±4.41	10.98±4.47	0.665
Diff SL(°)	1.39±4.60	1.31±2.87	0.967
Preop LL(°)	33.42±15.37	39.58±9.03	0.333
Postop LL(°)	42.70±6.89	42.15±7.08	0.870
Diff LL(°)	9.28±13.83	2.57±5.68	0.218

DH : disc height, SL : segmental lordosis, LL : lumbar lordosis

# LIMITATIONS

- Single-center & one surgeon.
- The number of patients is not sufficient

(With ongoing research, the number of patients will further increase)

# CONCLUSION

- There is **no significant** difference between the **IELD group and the MLD group** in the clinical outcomes and the radiologic outcomes.
- It was found that **IELD is as effective as MLD at the L5-S1 level.**

# THANK YOU FOR YOUR ATTENTION~

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