



LUMBAR MICROFORAMINOTOMY

A LESS INVASIVE TECHNIQUE FOR LUMBAR ROOT DECOMPRESSION

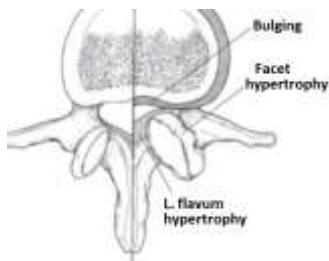
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Lumbar Discectomy

- The most common spinal operation
- Many cases with lumbar disc herniation accompanied by *lateral recess stenosis*



Lateral recess stenosis



Technique of lumbar discectomy

- Hemipartial laminotomy (bony removal of)
 - Upper lamina
 - Medial facet
 - Ligamentum flavum
 - Caudal lamina (if necessary)

... also decompresses lateral recess



An observation

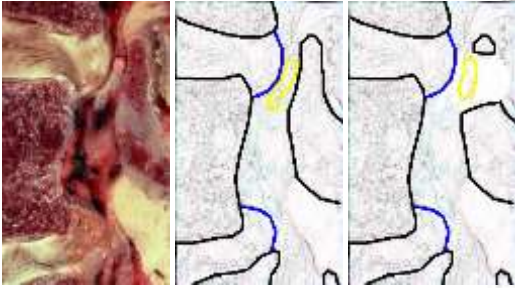
- Many discectomy cases show recurrent disc fragments without symptoms
 - Lebow et al (Spine 2011 Dec 1;36(25):2147-51)
 - 2 years after discectomy 23% patients had radiographic evidence of recurrent disc herniation at the level of prior discectomy
 - Asymptomatic in 13% patients
 - Symptomatic in 10% patients
- Reason for no symptoms despite recurrence: bony decompression

The idea

- A limited, less invasive method to decompress the nerve root at the lateral recess region (even without discectomy) may be sufficient for most cases



Effect of bony decompression

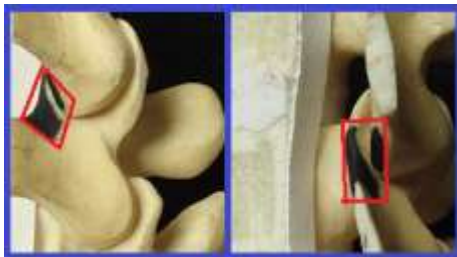


Area of bony decompression

- The lateral recess is bordered;
- laterally by the pedicle
 - posteriorly by the superior articular facet and ligamentum flavum
 - Anteriorly by the vertebral body, endplate margin, and disk margin



Area of bony decompression



Lumbar Microforaminotomy

- Primary aim: Bony/ligamentous decompression of the root at the lateral recess area
- The decompression includes a hole (8-10 mm) placed onto junction of inferior facet of the cranial lamina and superior aspect of the caudal lamina



Lumbar Microforaminotomy

- Does NOT include a wide exposition of the area (*dural sac, shoulder of traversing root, then disc interspace*) unlike traditional discectomy
- The hole can be widened to reach disc interspace, if required



Technique

- Microscope or endoscope can be used
- Different type of skin incisions and muscle dissections can be used
 - Incision: midline vertical, paramedian vertical, transverse
 - Muscle: stripping, splitting
- Utilization of high-speed drill is a must
- Lig. flavum is preserved, if it does not compress
- Can be limited to bony decompression, or can be extended (superiorly) to remove disc fragment



Our series

- 21 patients (age range 33-67, mean 48) with radicular symptom
 - In 15 cases, the hole itself was sufficient for decompression
 - In 6 cases, extruded disc fragments were found and removed

Outcome measurement

- Preoperative and 3rd month postoperative
 - Pain: Visual Analog Scale (VAS)
 - Disability: Oswestry Disability Index (ODI)

Results

- No complication
- Patients were generally discharged next day
- Improvements were marked:
 - VAS (mean)
 - Preoperative 9.8
 - Postoperative 1.7
 - ODI (mean)
 - Preoperative 64%
 - Postoperative 14%
 - $P < 0,001$ each
- 19 of 21 patients satisfied with the treatment

Pro et Contra

- Advantages
 - Less invasive method, short operation time
- Disadvantages
 - Limited exposure
 - Not suitable for every case (large extruded discs, esp. superiorly)
 - Necessitates enough experience

CONCLUSION

- Lumbar Microforaminotomy is a limited, less invasive lumbar root decompression technique (comparing to traditional discectomy /decompression)
- Includes decompression of lateral recess area by drilling the facet/inferior lamina junction
- Hemipartial laminectomy, resection of the lig. flavum, and wide exposition of the local anatomy is NOT involved in this technique

CONCLUSION

- The best indications are the lateral recess stenosis and some disc herniation cases accompanied by lateral recess narrowing
- Protruded discs are not removed necessarily (given that decompression is achieved)
- It may be a good alternative technique in selected cases



... thank you.

Questions / Comments ?

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