Lumbar Lateral Spinal Stenosis

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Spinal stenosis:

- Narrowing of the spinal canal that produces compression of the neural elements before their exit from the neural foramen

Lateral spinal stenosis:

- Narrowing of the lateral recess or the intervertebral foramen
Classification

- **Etiology (Arnoldi)**
  - congenital or developmental
    - idiopathic narrowing of the spinal canal or developmental narrowing secondary to a bone dysplasia such as achondroplasia
  - acquired or degenerative
    - result of an underlying metabolic disorder such as Paget’s, tumor, infection
    - post-traumatic OA, or instability with spondylolisthesis
Facet Hypertrophy

Central spinal stenosis
- inferior articular process of the cephalad vertebra (posteromedial)

Lateral spinal stenosis
- superior articular process of the caudal vertebra (anterolateral)
Lateral Stenosis

Osteophytes of L4/L5 facet affects

- the proximal portion of the L5 nerve root in the lateral recess
- the L4 nerve root as it exits through its neural foramen
L5/S1
lateral
recess
stenosis
degenerative facets with bilat lateral recess stenosis
Presentation

- Central stenosis - claudication
- Lateral stenosis - radicular
Long-term results of partial undercutting facetectomy for lumbar lateral recess stenosis; *Spine* 21(11), 1996, pp 1352-1356

- Retrospective review of 57 consecutive patients who had a partial undercutting facetectomy for degenerative lumbar lateral recess stenosis
- 24 men 33 women, mean age of 56 yrs
- 18 patients also had disc prolapse
- 4 patients with spondylolisthesis
- No central canal stenosis (AP diam of canal < 12 mm)
- Pre-op leg symptoms for a mean of 5.4 years; fifty-two (91%) had sciatica, and five (9%) had claudication
Sanderson, PL, Getty, CJ. Long-term results of partial undercutting facetectomy for lumbar lateral recess stenosis; *Spine* 21(11), 1996, pp 1352-1356

- Procedure (Getty):
  - Laminotomy
  - Osteotomy obliquely through inferior & superior articular processes
- 50 unilateral, 7 bilateral
- 18 partial discectomy (only in patient with prolapse)
- No fusion
Sanderson, PL, Getty, CJ. **Long-term results of partial undercutting facetectomy for lumbar lateral recess stenosis;** *Spine* 21(11), 1996, pp 1352-1356

- minimum F/U 5 years (mean, 8.4 years; range, 5-11 years)
- No deaths, neurologic complications or revision surgery
Sanderson, PL, Getty, CJ. **Long-term results of partial undercutting facetectomy for lumbar lateral recess stenosis;** *Spine* 21(11), 1996, pp 1352-1356

- 72% had no leg pain,
- 16% had some leg pain needing occasional analgesia
- 12% had severe leg pain needing continual analgesia
- 93% unable to walk > 30 min pre-op
- 93% able to walk > 30 min 1 yr post-op
Amundsen, T. Lumbar Spinal Stenosis: Conservative or Surgical Management? : A Prospective 10-Year Study; Spine 25(11), 1 June 2000, pp 1424-1436

- 100 pts with symptomatic lumbar spinal stenosis
- 54 men : 46 women (median age 59 yrs; range, 16–77)
- surgical or conservative treatment and followed for 10 years

- 19 pts with severe symptoms - surgical
- 50 pts with moderate symptoms - conservative
- 31 pts randomized between the conservative (n = 18) and surgical (n = 13) treatment groups.

- results, evaluated by patient and physician, were rated as excellent, fair, unchanged, or worse
Amundsen, T. Lumbar Spinal Stenosis: Conservative or Surgical Management? : A Prospective 10-Year Study; *Spine* 25(11), 1 June 2000, pp 1424-1436

- nerve decompression by partial or total laminectomy, medial facetectomy, discectomy, or removal of osteophytes from the vertebral margins or facet joints
- three point orthosis for one month post-op
Amundsen, T. Lumbar Spinal Stenosis: Conservative or Surgical Management? : A Prospective 10-Year Study; Spine 25(11), 1 June 2000, pp 1424-1436

Conservative

- good result in:
  - 35/50 pts (70%) after 6 mos
  - 32/50 pts (64%) after 1 year
  - 28/49 (57%) at 4 years

- a poor outcome was not associated with discomfort in using the orthosis.
Surgery

- good result in:
  - 15/19 pts (79%) at 6 mos
  - 17/19 pts (89%) at 1 year
  - 16/19 pts (84%) at 4 years.
  - 2 pts worse at 6 mos, 1 pt at 4 years
Amundsen, T. Lumbar Spinal Stenosis: Conservative or Surgical Management? : A Prospective 10-Year Study; *Spine* 25(11), 1 June 2000, pp 1424-1436

• Patients with an unsatisfactory result from conservative treatment were offered delayed surgery after 3 to 27 months (median, 3.5 months).

• 21 patients up to the 4-year assessment (10 from group C (20%), 10 from group RC (55%) and 1 from group S), increasing to 25 patients (4 more from group C) up to the end of the 10-year period.

• Similar satisfaction rates post-op
Amundsen, T. Lumbar Spinal Stenosis: Conservative or Surgical Management? : A Prospective 10-Year Study; *Spine* 25(11), 1 June 2000, pp 1424-1436

- Clinically significant deterioration of symptoms during the final 6 years was not observed.
- Patients with multilevel afflictions, surgically treated or not, did not have a poorer outcome than those with single-level afflictions.
- No clinical or radiologic predictors for the final outcome were found.
- no dropouts, except for 14 deaths (unrelated)
Conclusions

- Outcome favors surgical treatment, but an initial conservative approach seems advisable for many patients because those with an unsatisfactory result can be treated surgically later with a good outcome.
References

- Sanderson, PL, Getty, CJ. Long-term results of partial undercutting facetectomy for lumbar lateral recess stenosis; *Spine* 21(11), 1996, pp 1352-1356
- Amundsen, T. Lumbar Spinal Stenosis: Conservative or Surgical Management? : A Prospective 10-Year Study; *Spine* 25(11), 1 June 2000, pp 1424-1436