A COMPARATIVE STUDY OF THE OUTCOMES OF PRIMARY AND REVISION DISCECTOMY SURGERY

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BACKGROUND

- Following primary discectomy, a recurrent lumbar disc herniation at the same site or from an adjacent disc can occur in up to 18% of patients (1-3).

- The estimated rate of reoperation for recurrent herniation is 7.9% at ten years (4, 5).

- Patient related outcomes following revision surgery for recurrent lumbar disc herniation (RLDH) are variably reported.

4. Morgan-hough CV, Jones PW, Eisenstein SM. Primary and revision lumbar discectomy. A 16 year review from one centre. JBJS Br 2003; 85: 871-4
Some (1, 6, 7) conclude worse outcomes with respect to the primary procedure.

Others conclude quite the opposite (8, 9, 10, 11).

Despite this, revision surgery for recurrent lumbar disc herniation is often assumed to have favourable outcomes.

PROBLEM

- Variations in the definition, site and side of recurrence, heterogenous patient populations, as well as incorrect diagnosis reduce the strength of previous studies.
AIM

Does surgery for recurrent lumbar disc herniation have favourable outcomes as compared to the primary procedure in the same cohort of patients

- Validated standard spinal assessment questionnaires assessing pain and disability.
PATIENTS AND METHODS

- Retrospective analysis of prospectively gathered data.

Inclusion criteria:
- Patients who underwent both primary and subsequent late revision surgery for lumbar disc herniation.

Exclusion criteria:
- Cauda equina syndrome
- Primary or revision discectomy alone.
- Failure to demonstrate improvements in outcome scores post primary surgery
- Revision surgery < 6 months following index procedure
- Different level or side of recurrent disc herniation
- Failure to identify a recurrent disc herniation at the time of surgery
Primary and Revision surgery

- Mini-open posterior lumbar flavectomy
- Removal of disc material
- Undercutting facetectomy where required

Revision surgery
- 24 patients – revision discectomy
- 6 patients – revision discectomy and fusion
RESULTS

- **546 primary lumbar discectomies**
  - Clinical and statistical significant improvements in VAL, VAB and ODI (P<0.0001)
  - Dural tear rate = 2.8%

- **36 patients – Revision surgery for RLDH**
  - Surgical revision rate of 6.6% over 13 years
  - Dural tear rate = 13%
  - 6 early revisions (<6 months) Excluded.
  - Study group = 30 patients
PRIMARY VS REVISION SURGERY (30 Pt)

- **Outcome following primary discectomy (30 patients)**
  - Clinical and statistical significant improvement in the VAL (P<0.001) and ODI (P<0.001) scores.
  - Small improvement in VAB (P>0.7).
  - Significantly inferior outcomes following primary surgery in VAL compared to 510 patients not known to have had a RLDH. (P<0.05).

- **30 Late revision discectomy.**
  - Clinical and statistical significant improvements in VAL (P<0.0001), VAB (P<0.05) and ODI (P<0.0001).
  - Fusion (6 patients) – Similar improvements in back pain (VAB 29 Vs 32); leg pain (34 Vs 36) and the Oswestry disability score (25 Vs 25).

- **Outcomes for Primary Vs Revision Lumbar Disc Surgery (n=30)**
  - No significant difference in change in scores
  - No significant difference between preoperative and post operative scores.
    - Patients are no worse off and make similar recoveries post op.
OUTCOMES OF THE INDEX AND REVISION PROCEDURES COMPARED
STRENGTHS AND WEAKNESSES

Strengths

- Same cohort of patients
- Early recurrences excluded
- Standardised definition of recurrence
  - Same level and side

Weaknesses

- Small number of patients
- Majority of previous studies share similar numbers
- Some patients may have been operated on elsewhere
CONCLUSION

- Primary and revision surgery for lumbar disc herniation have favourable outcomes, the results of which are the same.

- The outcomes following revision lumbar disc surgery are independent to that of the primary surgery.

- The incidence of dural tears is higher in the revision group.

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