

Long-term outcome following lumbar spine surgery complicated by incidental durotomy

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Introduction

- Incidental durotomy appears to be the most common complication following lumbar spine surgery (reported incidence of 1-17%)
- Controversy persists as to whether adequately treated dural tears lead to a inferior outcome for the patient

Aims

- Determine whether, in primary lumbar decompressive procedures, the occurrence of a dural tear was associated with a poorer long-term outcome

Patients and Methods

- Senior author maintains a prospective database of all spinal procedures performed
- Data recorded includes visual analogue scores for back and leg pain (VAL, VAB), Oswestry Disability Index (ODI) and the Short Form 36 General Health Questionnaire (SF36)
- Data gathered pre-operatively, and at 2 and 6 months following surgery

Patients and Methods

Part 1

- Examination of database to identify patients who had undergone an elective primary lumbar spine decompressive procedure (discectomy or decompression)
- Establish the incidence of dural tears and other complications
- Review the outcomes at 6 months

Part 2

- Longer term review of those patients with dural tears and compare this with their outcomes at 6 months

Results – part 1

200 patients identified for the period 1999 to 2007

| Procedure | | Number |
|---------------|----------------------|--------|
| Discectomy | | 121 |
| Decompression | Central Stenosis | 50 |
| | Central Disc | 23 |
| | Facet Joint Ganglion | 6 |

Level of surgery

| Proximal surgical level | Distal surgical level | | | | |
|-------------------------|-----------------------|----|----|----|----|
| | L2 | L3 | L4 | L5 | S1 |
| L1 | 1 | | | | |
| L2 | | 1 | 1 | 7 | |
| L3 | | | 11 | 12 | 4 |
| L4 | | | | 67 | 17 |
| L5 | | | | | 79 |

Complications

| Complications (200 procedures) | Number |
|--------------------------------|-------------------|
| Dural tear | 19 (9.5%) |
| Superficial Infection | 5 (2.5%) |
| Deep Infection | 2 (1%) |
| DVT | 1 (0.5%) |
| Recurrent disc (<6 weeks) | 2 (1%) |
| Urinary retention | 1 (0.5%) |
| Wound seroma | 1 (0.5%) |
| TOTAL | 31 (15.5%) |

Complications – dural tears

| Procedure | Dural tears |
|----------------------|-------------|
| Discectomy (n=121) | 8 (6.6%) |
| Decompression (n=79) | 11 (14%) |
| TOTAL (n=200) | 19 (9.5%) |

Management of dural tear

- Tears were managed with duragen (5 cases), surgicel (5 cases), fat patch graft (3 cases), suture repair with 6/0 nylon (1 case) and no repair (1 case)
- No drains were used

Management of dural tear

- Post-operatively all patients were managed with bed rest (average 2.6 days), followed by mobilisation once symptoms of the csf leak had settled
- Mean duration of stay was 4.8 days
- Resolution of symptoms of the csf leak was documented at the 6 week follow-up.

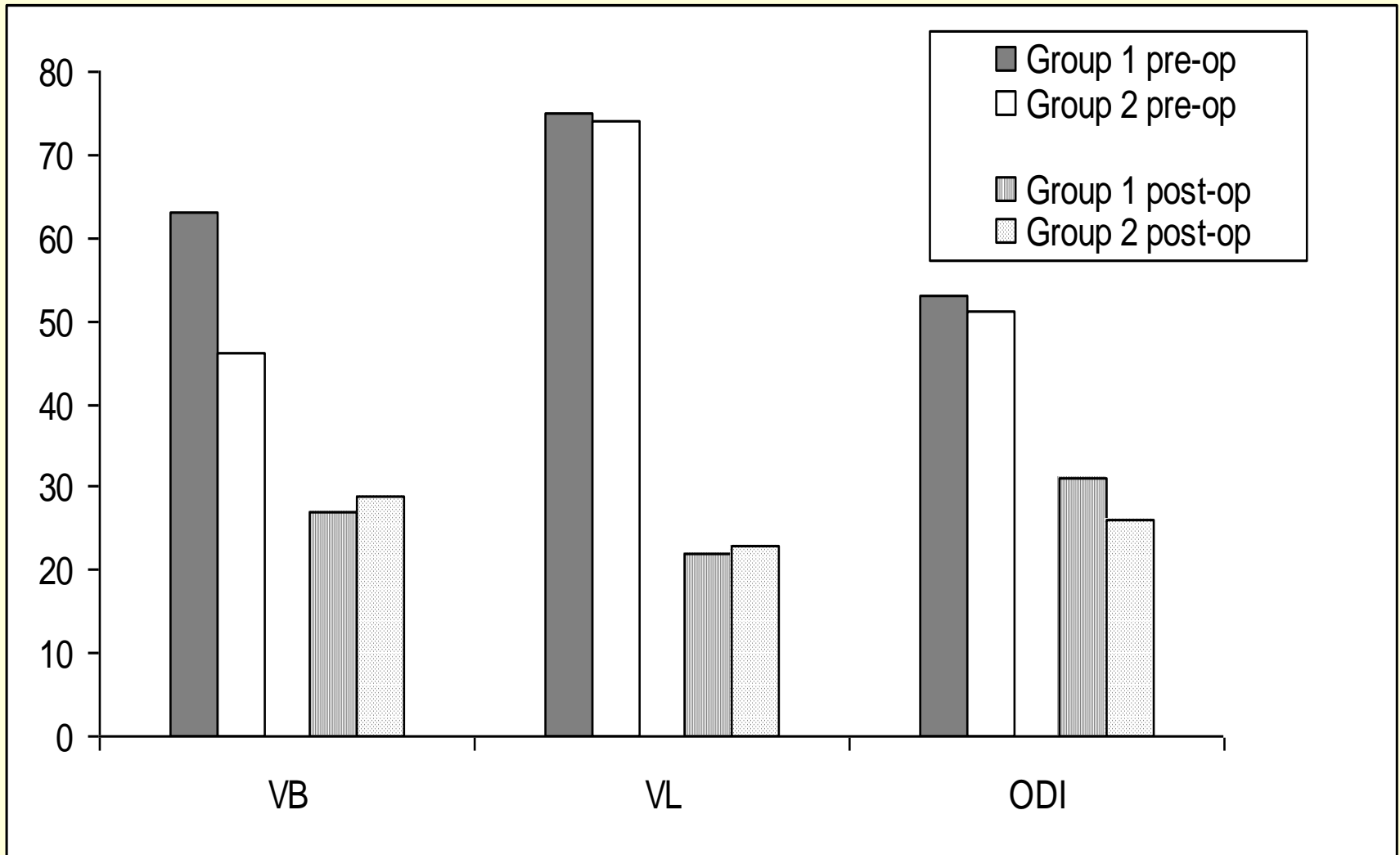
Outcomes

- Incomplete pre-operative data for 13 patients
- 187 patients were divided into 2 groups
- Group 1 – 17 patients with a dural tear
- Group 2 – 170 patients with no dural tear

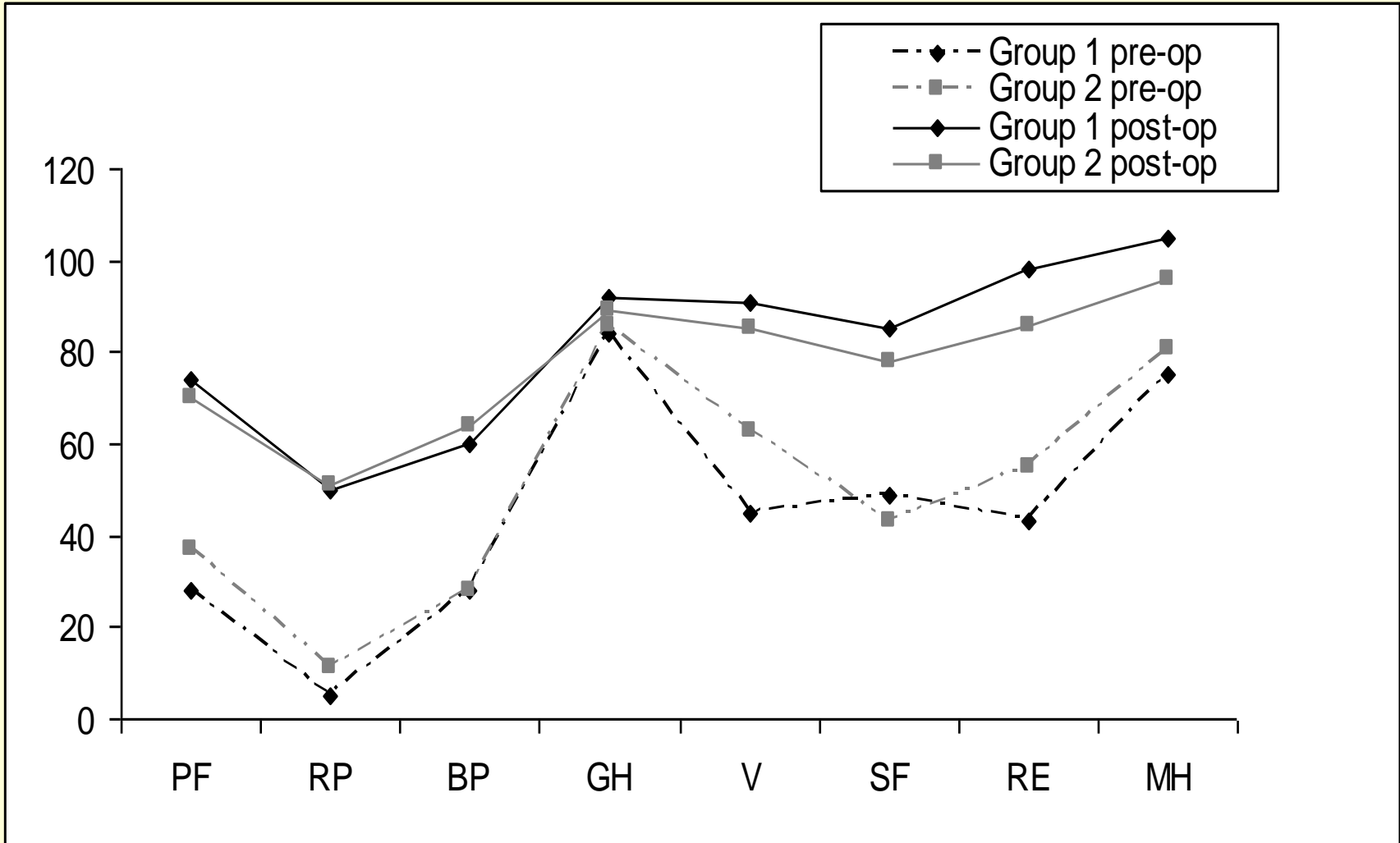
Demographics

| | Group 1 (n=17) | Group 2 (n=170) |
|-------|---------------------|---------------------|
| M : F | 8 : 9 | 95 : 75 |
| Age | 50.6 yrs (31 to 69) | 51.8 yrs (24 to 86) |

Outcomes at 6 months



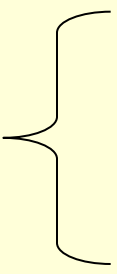
Outcomes at 6 months



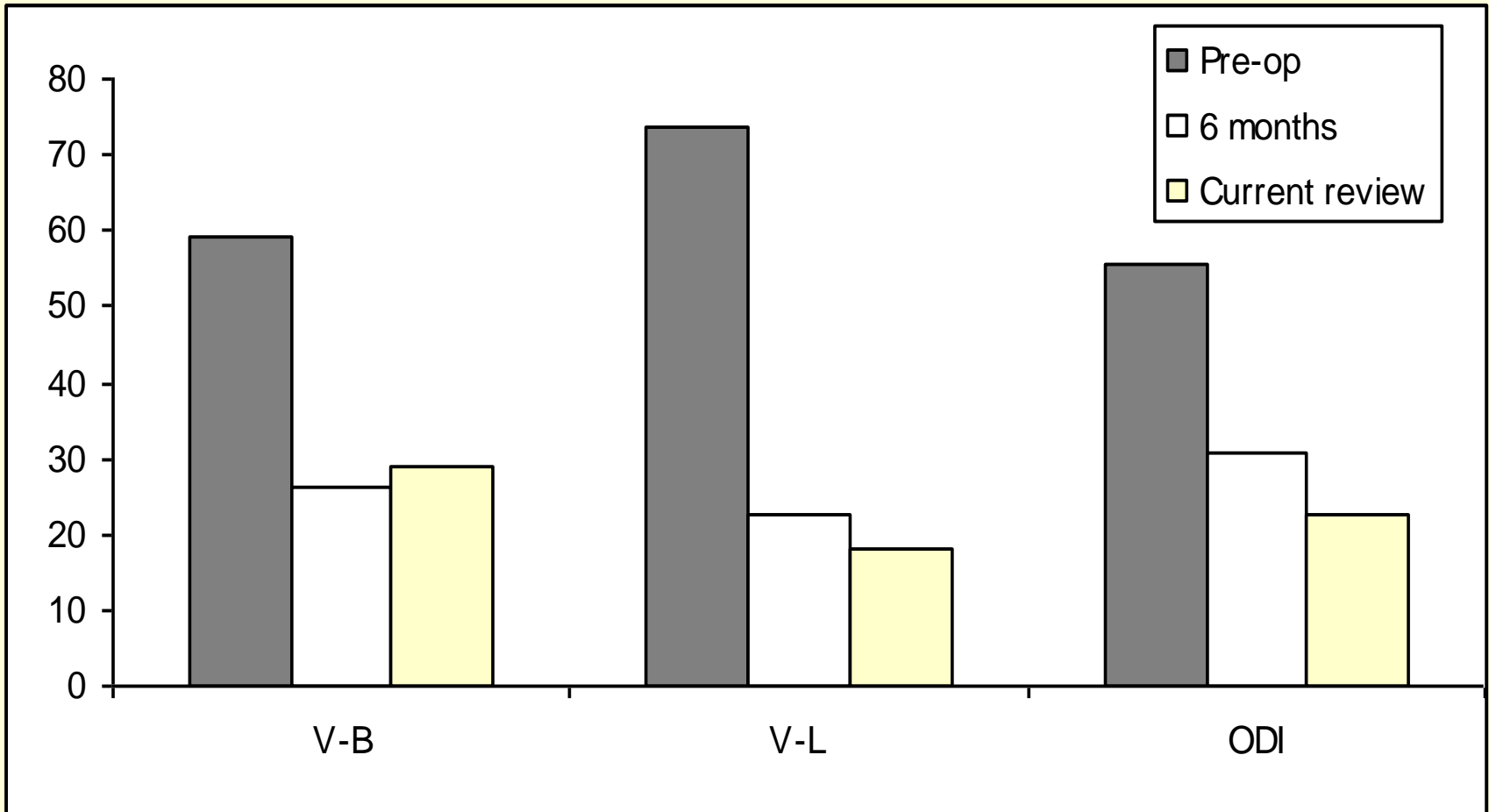
Conclusion – part 1

The outcome at 6 months, in patients undergoing a decompressive procedure, did not appear to be influenced by the occurrence of a dural tear

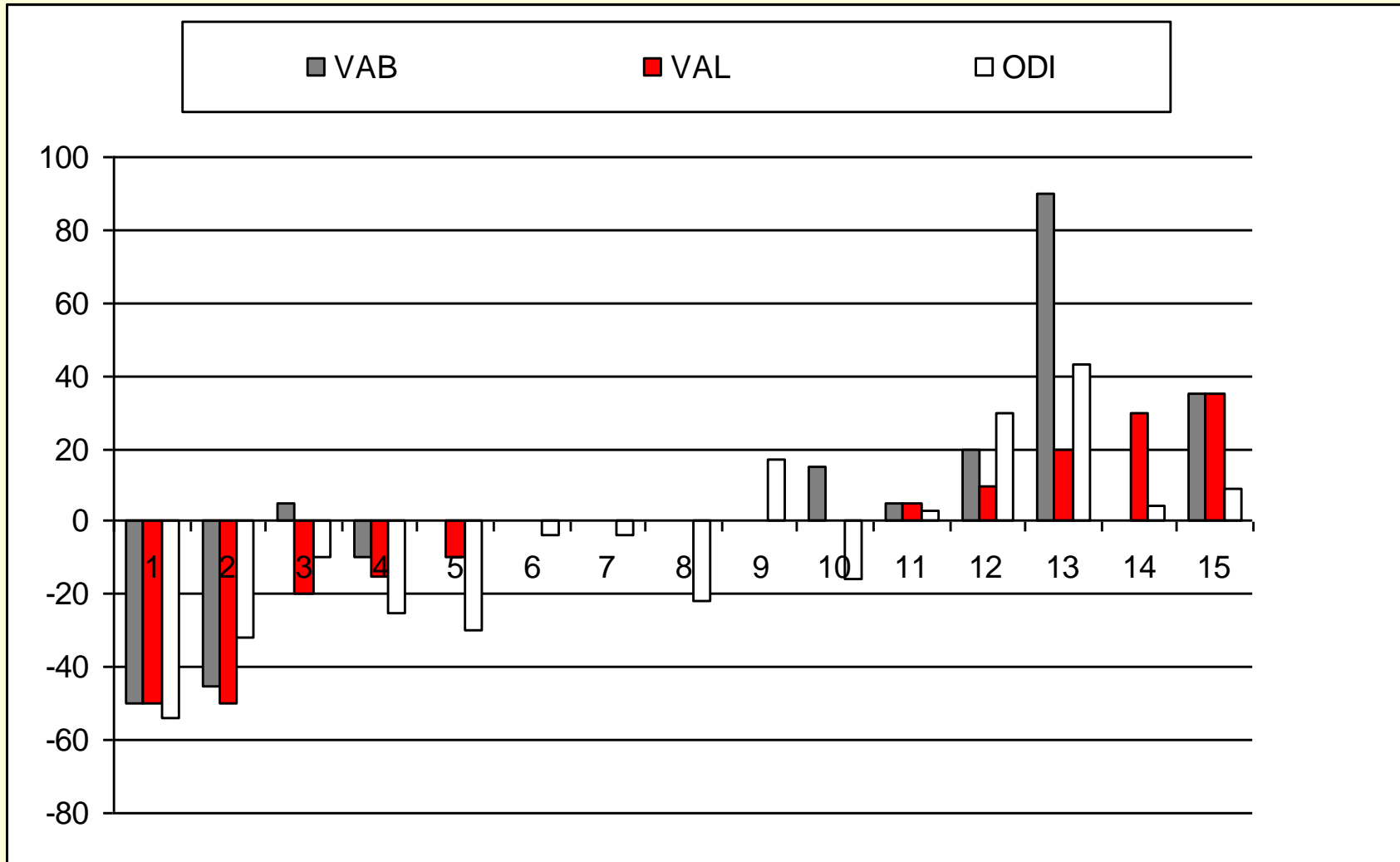
Results – part 2

- 15 / 17 patients reviewed
- Telephone consultation
- Postal questionnaire 
 - VAB
 - VAL
 - ODI
 - SF36
- Mean follow-up of 5.1 years from surgery

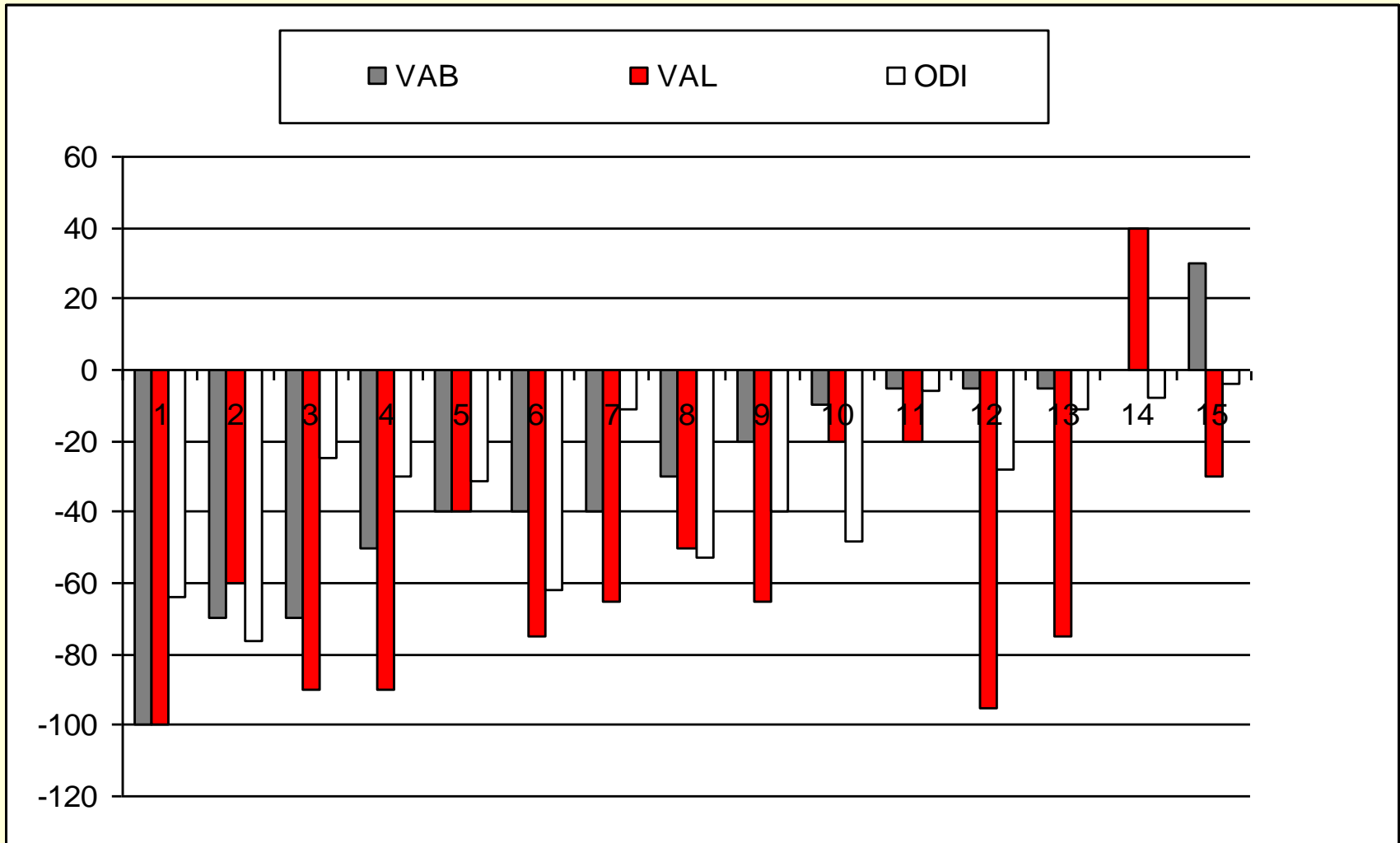
Outcomes



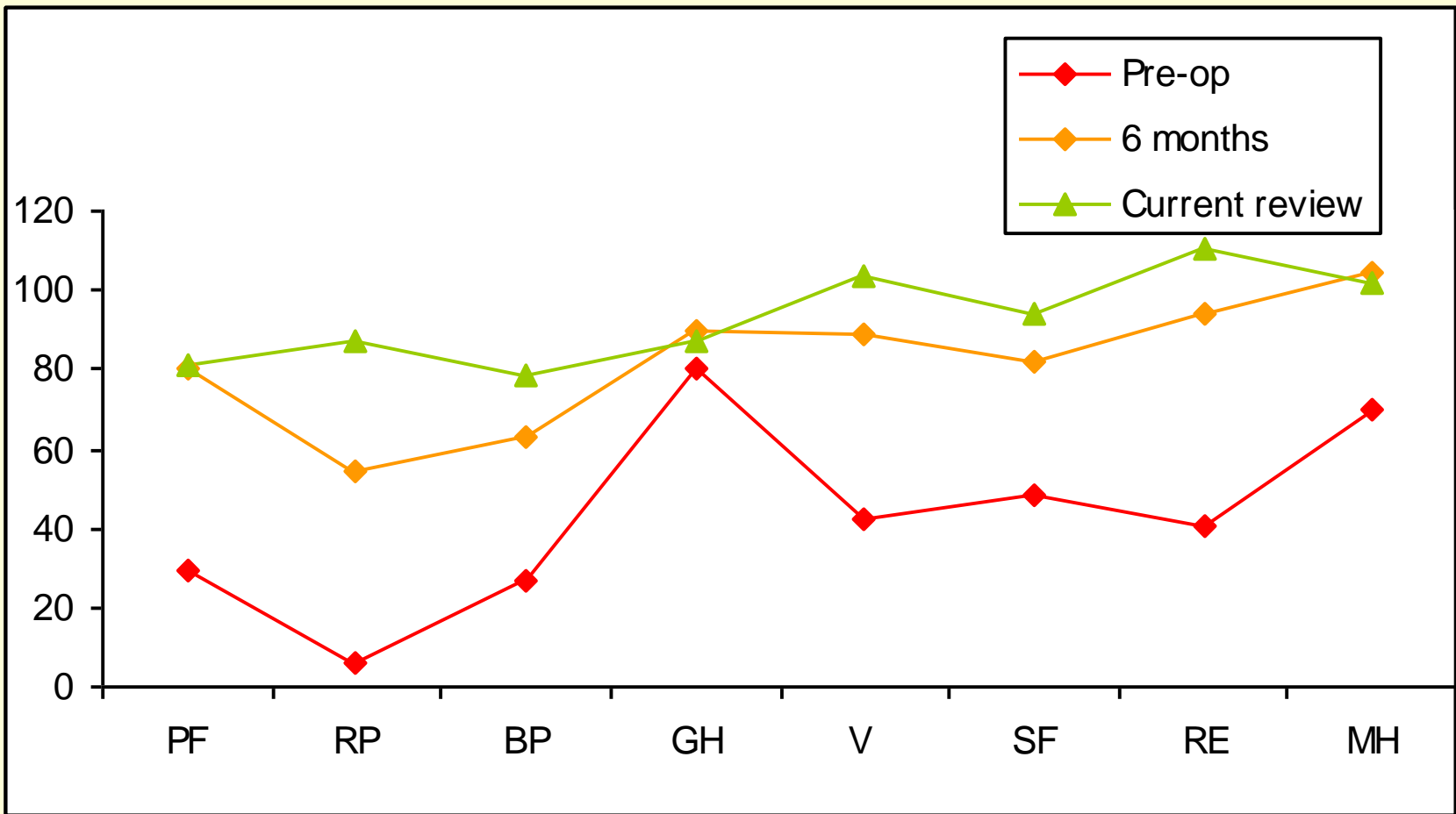
Change in outcomes since discharge



Current review compare to pre- op scores



SF36 Profiles



Conclusion

- Dural tears do not appear to adversely affect the outcome of lumbar decompressive surgery at 6 months.
- In addition the improvement in clinical scores appears to be well maintained in the longer term.

Thank You