

# Analysis of Mr V's Neck operations Jan 2012 – Dec 2017

Prospective data collection corresponding to the introduction of cervical disc replacement into my practice

These data have been presented at the East Anglian Spinal Meeting (Jan 2018)

Analysis of 2018 and 2019 operations is on-going and slides will be updated soon

# Total patients / cases Jan 2012-Dec 2017

- Total 233 operations in 226 patients
- Radiculopathy: 159
- Myelopathy: 73
- Instability with neurology: 4 (included above)
- Instability without neurology: 1
- Anterior approaches: 213    Single level: 184\*
- Posterior approaches: 20    Multilevel: 16\*
- \* Highly significant on Chi squared test

# Cage Fusion vs Arthroplasty

- Arthroplasty
- N= 69
- Age range 32 – 65y
- Mean 45.2y
- More radiculopathy
- Cage Fusion
- N= 145
- Age range 28 – 87y
- Mean 55y \*\*
- More myelopathy

# Single level procedures

## N= 188

| Myelopathy |          |      | Level /<br>Root | Radiculopathy |          |    |
|------------|----------|------|-----------------|---------------|----------|----|
| Posterior  | Anterior |      |                 | Posterior     | Anterior |    |
|            | Disc     | Cage |                 | Disc          | Cage     |    |
| 0          | 1        | 14   | 3/4 C4          | 0             | 0        | 3  |
| 0          | 3        | 10   | 4/5 C5          | 1             | 2        | 7  |
| 0          | 3        | 12   | 5/6 C6          | 2             | 21       | 34 |
| 0          | 1        | 5    | 6/7 C7          | 0             | 32       | 27 |
| 0          | 0        | 0    | 7/1 C8          | 1*            | 0        | 9  |

\* bilateral

# Multilevel procedures

## Levels decompressed = 102

| Myelopathy |          |      | Level /<br>Root | Radiculopathy |          |      |
|------------|----------|------|-----------------|---------------|----------|------|
| Posterior  | Anterior |      |                 | Posterior     | Anterior |      |
| LaminX     | Disc     | Cage |                 | ForaminO      | Disc     | Cage |
| 1          |          |      | 1/2 C2          |               |          |      |
| 2          |          |      | 2/3 C3          |               |          |      |
| 6          |          | 6    | 3/4 C4          |               |          |      |
| 7          | 1        | 13   | 4/5 C5          | 2             | 1        | 1    |
| 5          |          | 12   | 5/6 C6          | 4             | 3        | 9    |
| 5          |          | 3    | 6/7 C7          | 4             | 2        | 8    |
| 3          |          |      | 7/1 C8          | 6             |          |      |
|            |          |      | 1/2 T1          | 1             |          |      |

# Outcomes- Neurology

## Myelopathy

N =73

- Resolved 25
- Improved 34 \*  
(incl 1 \*died d19)
- Unchanged 4
- Worse 2
- Lost / no fu 8

## Radiculopathy

N=159

- Resolved arm pain 124
- Improved arm pain 24
- Unchanged 4
- Worse 0
- Lost / No fu 7

# Complications

|                       |   |   |
|-----------------------|---|---|
| Death                 | 1 | 81yo emergency severe myelopathy d19  |
| Spinal cord injury    | 1 | Incomplete – worsening of right hemiparesis – MRI good decompression no haematoma |
| Root injury           | 2 | Temporary weakness  |
| Haematoma - evacuated | 1 | Tracheostomy  |
| Implant revision      | 1 | At time of haematoma evacuation (cage)  |
| CSF leak              | 1 | Lumbar drain  |
| Hoarse voice          | 2 | 1 temporary, 1 permanent  |
| DVT                   | 1 | Despite TEDS and Clexane  |
| Wound collection      | 1 | Re-admitted, conservative   |
| Oesophageal injury    | 0 |   |

# Revisional surgery

## 8 in 226 patients, median 25m

| Case | Interval (Months) | Comment  |
|------|-------------------|--|
| 1    | 31m               | CSM C4/5 C5/6 ACD, recovered, recurred C3/4 ACDF (ZeroP)                                   |
| 2    | 9m                | C5/6 ACDF L arm resolved, new R arm C6/7 ACDF resolved                                     |
| 3    | 50m               | C5/6 ACDF brachialgia resolved, rec C4/5 ACDA resolved                                     |
| 4    | 18m               | C7 PMF partial response, C6/7 ACDF resolved  |
| 5    | 42m               | CSM – laminectomy GR, neck pain +C5 pain – instability – C4/5 ACDF and plating - recovered |
| 6    | 29m               | Brachialgia – C6/7 ACDA resolved, recurred C5/6 ACDA resolved                              |
| 7    | 21m               | Brachialgia C5/6 ACDF resolved, recurred C6/7 ACDF resolved                                |
| 8    | 10m               | Rapid severe CSM C4/5 ACDA resolved, persistent L brachialgia C5/6 ACDA - resolved         |



# Data Summary

- Predominantly anterior single level surgery
- Very good neurological outcomes
- Very low complication rates
- Total patients with complications – 10 (4.2%)
- Permanent complications – 4 (1.7%)
  
- Aborted disc replacement – 3, all converted to fusion with good clinical outcome
  - 1 poor case selection in y1 (patient choice, operative findings – excessive degenerative change)
  - 1 excessive bleeding at surgery, surgeons preference for cage fusion
  - 1 operative findings of endplate remodelling, precluding appropriate fit for prosthesis