

## Lumbar disk herniation – what's new?

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*Spine Class, Southport – March 2010*

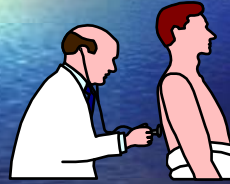
## Costs

£600m / annum

30% = Surgery

? Time off work

?? Social effects



## Early treatment

- Bed Rest
  - How long for?
- Analgesia
  - Which?
- Muscle relaxants
  - Any good?
- Physio
  - Does it work?

## When is intervention appropriate?

Traditional: after 6 weeks

or

Immediate



ZERO evidence

## Expectation – no surgery The RCT Evidence

- Surgery –v- Conservative treatment
- Non-blind, significant cross-over
- 280 patients – 67 surgery, 87 conservative, 126 randomized
- Patient and observer ratings
- 1,4 and 10 year outcomes
- Cost effective analysis

Weber 1983

## Discectomy v conservative

- Discectomy better outcomes at 1 year
- ? Comparable at 4 years  
(26% of conservative group came to surgery)

Weber 1983

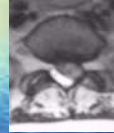
## Micro -v- Conservative

Greenfield 2003: ISSLS proceedings  
4 English Neurosurgery centres

Microdiscectomy -v- Conservative therapy  
(n=88 Follow-up: 2yr)

Improvements in ODI, less sciatica and less LBP  
at 18 months but differences not statistically  
significant at 2 years

## Serial changes on MRI



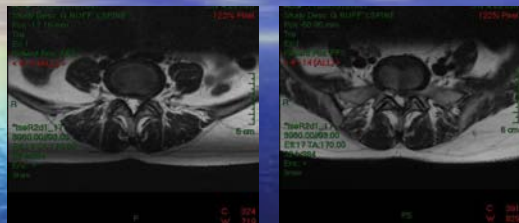
- 32 PLUD patients treated conservatively : at 6 mos and 1 year
- Size (proportion cross sect. area of canal) : mean  
32% at zero  
29% at 6 months  
25% at 1 yr
- Herniation decrease:  
>20% in 11 patients  
10-20% in 8 patients  
0% in remainder

Matsubara 1995

## Expectation - Microdiscectomy

- Many clinical series:
- Expect 65-90% to excellent outcomes with surgery particularly for relief of sciatica
- (70% good result from chemonucleolysis)
- Compares with approximately 35% of conservatively treated patients

Hoffman 1993



## MRI imaging



## Lumbar disc herniation

Lets assume that the disc is the source of the majority of the patient's pain -

What treatments are available?

## 1. Microdiscectomy



## Effect of fragment type

187 consecutive patients undergoing discectomy:

- 89 Fragment fissure herniations
  - 1% reherniation 1% re-operation
- 42 Fragment contained herniations
  - 10% reherniation 5% re-operation
- 33 Fragment defect herniations
  - 27% reherniation 21% re-operation
- 16 No fragment contained herniations
  - 38% recurrent sciatica

Carragee 2003

## Primary and revision – a 16 year review

- 531 primary  
42 revisions = 7.9%
- Contained disc protrusion three times more likely to require revision than Extruded or Sequestered



Morgan-Hough  
JBJS 2004

Does repeat Microdiscectomy produce an acceptable result?

Incidence 7.5% (n=55)

- 88% relief of sciatica
- 85% relief of backache

Haglund 1995

## Does the wrong level matter?

- 69 cases identified – 68 lawsuits
- 37 settled
- 18 won by plaintiff
- 13 won by defence (42% by jury) !!

Goodkin 2004 - Seattle

## International Spinal Surgery Information Sheet (ISSIS)

- Single A4 sheet
  - Text explaining general risks
  - Table of specific risks to spinal surgery
  - Aide Memoire
  - Provides Defence against Medico-legal claim
- [www.gibsonspine.eu/ISSIS](http://www.gibsonspine.eu/ISSIS)

Came and went:

2. Epidural steroid injection
3. Nucleolysis - Chymopapain  
Collagen, Steroid
4. Automated percutaneous discectomy ; laser
5. IDET



## CHYMOPAPAIN -v- DISCECTOMY 5 RCTS

70% success but poor outcome  
and 2<sup>nd</sup> procedure

**MORE LIKELY** after  
chymopapain

## Alternatives - The evidence

- Cochrane Review of Disc Surgery (Gibson & Waddell 2000)
  - Chymopapain is more effective than placebo
  - Chymopapain equal to steroid injection  
equal to collagenase
  - Discectomy better than chymopapain
  - Repeat surgery more likely after PED
  - No evidence for laser discectomy

[www.cochranelibrary.com](http://www.cochranelibrary.com)

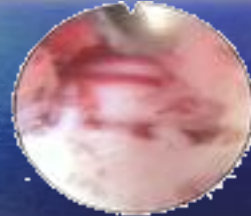


## TESSYS

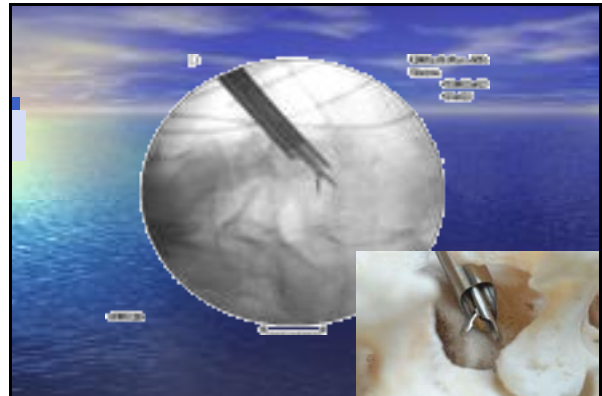




## 3.7 mm Endoscope



*The patient is awake!*



## Advantages - Lateral Position

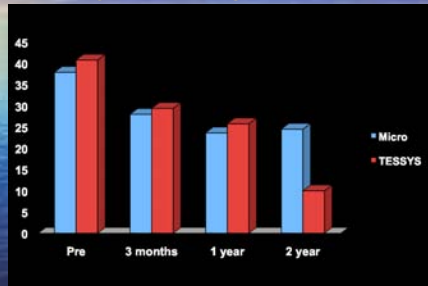
- Pillow opens up foramen
- Dura falls down to contra-lateral side
- Reduced intra-abdominal pressure
- Improved contact with patient
- SLR intra-operative possible
- Flexed hips - Less lordosis



## The Edinburgh Results

- RCT
- Micro -v- Endoscopic TESSYS
- 2 year follow-up
- 48 patients

## Oswestry Disability Index



The degenerate prolapse

Choices:

Anterior discectomy and fusion

Anterior disc replacement

Posterior inter-spinous spacer

Posterior lumbar fusion

## Conclusions

- Trend towards minimally invasive surgery
- Possible to undertake foraminotomy
- Developing interspinous approaches for stenosis