

Clinical Symptom Score of the Japanese Orthopaedic Association (JOA) for a Patient with Lumbar Disc Herniation

Overview:

The Japanese Orthopaedic Association (JOA) has developed a clinical symptom score for a patient with a herniated lumbar disc. This can help determine the degree of improvement following surgical intervention. The association is headquartered in Tokyo.

Parameters in the score:

- (1) subjective symptoms (9 points): low back pain leg pain and/or tingling gait
- (2) clinical signs (6 points): straight-leg raising test sensory disturbance motor disturbance
- (3) restriction in activities (14 points): turn over while lying standing washing leaning forward sitting about 1 hour lifting or holding a heavy object walking
- (4) urinary bladder function (-6 points maximum)

| Parameter | Finding | Points |
|--------------------------|---|--------|
| low back pain | none | 3 |
| | occasional mild pain | 2 |
| | frequent mild | 1 |
| | occasional severe pain | 1 |
| | frequent pain | 0 |
| | continuous pain | 0 |
| leg pain and/or tingling | none | 3 |
| | occasional slight symptoms | 2 |
| | frequent slight symptoms | 1 |
| | occasional severe symptoms | 1 |
| | frequent severe symptoms | 0 |
| | continuous severe symptoms | 0 |
| gait | normal | 3 |
| | able to walk > 500 meters although it results in pain tingling and/or muscle weakness | 2 |
| | unable to walk > 500 meters owing to leg pain tingling and/or muscle weakness | 1 |
| | unable to walk > 100 meters owing to leg pain tingling and/or muscle weakness | 0 |

| | | |
|---|-------------------------------------|---|
| straight leg raising (includes a tight hamstring) | normal (> 70°) | 2 |
| | 30 to 70° | 1 |
| | < 30° | 0 |
| sensory disturbance | none | 2 |
| | slight disturbance (not subjective) | 1 |
| | marked disturbance | 0 |
| motor disturbance | normal (Grade 5) | 2 |
| | slight weakness (Grade 4) | 1 |
| | marked weakness (Grades 0 to 3) | 0 |
| turn over while lying | no restriction | 2 |
| | moderate restriction | 1 |
| | severe restriction | 0 |
| standing | no restriction | 2 |
| | moderate restriction | 1 |
| | severe restriction | 0 |
| washing | no restriction | 2 |
| | moderate restriction | 1 |
| | severe restriction | 0 |
| leaning forward | no restriction | 2 |
| | moderate restriction | 1 |
| | severe restriction | 0 |
| sitting about 1 hour | no restriction | 2 |
| | moderate restriction | 1 |
| | severe restriction | 0 |
| lifting or holding a heavy object | no restriction | 2 |
| | moderate restriction | 1 |
| | severe restriction | 0 |

| | | |
|--------------------------|----------------------|----|
| walking | no restriction | 2 |
| | moderate restriction | 1 |
| | severe restriction | 0 |
| urinary bladder function | normal | 0 |
| | mild dysuria | -3 |
| | severe dysuria | -6 |

where:

- I used dysfunction in the implementation for urinary bladder function.

total score =

= SUM(points for all parameters)

Interpretation:

- minimum score: -6
- maximum score: 29
- The higher the score the more normal the patient's overall status.

postoperative improvement in percent =

= ((postoperative score) – (preoperative score)) / (29 – (preoperative score)) * 100%

References:

Japanese Orthopaedic Association (JOA). Japanese Orthopaedic Association Assessment Criteria Guidelines Manual. 1996. pages 46-49.

Osawa T Ogura T et al. Evaluation of lumbosacral nerve root lesions using evoked potentials recorded by a surface electrode technique. Spine. 2003; 28: 496-501 (Table 2 page 498).