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Notice of Independent Review Decision

DATE OF REVIEW: 03/18/11

IRO CASE NO.:

DESCRIPTION OF THE SERVICE OR SERVICES IN DISPUTE:

Item in dispute: Discography at L2-3, L3-4, and L5-S1

A DESCRIPTION OF THE QUALIFICATIONS FOR EACH PHYSICIAN OR OTHER HEALTH CARE PROVIDER WHO REVIEWED THE DECISION

Texas Board Certified Orthopedic Spine Surgeon

REVIEW OUTCOME

Upon independent review, the reviewer finds that the previous adverse determination/adverse determination should be:

Denial Upheld

INFORMATION PROVIDED TO THE IRO FOR REVIEW

1. 08/10/10 - Clinical Note - M.D., PA
2. 08/24/10 - MRI Lumbar Spine
3. 08/31/10 - Electrodiagnostic Studies
4. 08/31/10 - Clinical Note - M.D., PA
5. 09/23/10 - Lumbar Myelogram
6. 09/23/10 - CT Lumbar Spine
7. 10/13/10 - Clinical Note - M.D.
8. 11/02/10 - Clinical Note - M.D.
9. 11/30/10 - Behavioral Medicine Evaluation
10. 12/09/10 - Utilization Review
11. 12/14/10 - Peer Review
12. 12/14/10 - Utilization Review
13. 01/19/11 - Clinical Note - M.D.
14. **Official Disability Guidelines**

PATIENT CLINICAL HISTORY (SUMMARY):

The employee is a male who sustained an injury in xx/xx while loading car doors.

The employee is status post posterior fusion with Steffee plate and screws at L4-L5 with anterior fusion as well as stenosis at L2-L3 and L3-L4, status post previous compression fracture at L3.

The employee saw Dr. on 08/10/10 with complaints of pain in the low back and lower extremities. Current medications included Zanaflex, Mobic, and Lortab. The employee denied bowel or bladder dysfunction. Physical examination revealed motor examination of the upper and lower extremities to be symmetrical and intact. There were trace reflexes of the biceps, triceps, and brachioradialis. Knee reflexes were 1+. Ankle reflexes were diminished on the left compared to the right. Straight leg raise was positive on the left at 55 degrees and on the right at 60 degrees. Sensation was slightly diminished in the lateral aspect of the leg and the dorsal aspect of the foot on the left compared to the right. The employee was recommended for MRI of the lumbar spine and electrodiagnostic studies.

An MRI of the lumbar spine performed 08/24/10 demonstrated a 1 mm disc bulge at T11-T12 with mild disc desiccation. At L1-L2, there was an over 2 mm diffuse disc bulge with at least mild central stenosis. At L2-L3, there was severe anterior/superior compression fracture of L3, which appeared chronic. There was a nearly 3 mm diffuse disc bulge/protrusion with disc desiccation and significant anterior disc narrowing. There was moderate to severe central stenosis. At L3-L4, there was spatial distortion due to adjacent metal from L4-L5 surgery. Central disc protrusion could not be excluded at that level, though there was no central stenosis. There was disc desiccation. At L4-L5, there were changes of anterior interbody fusion with wide laminectomy. Bilateral L4 and L5 pedicle screws and rods were noted. There was no thecal compression or stenosis seen postoperatively. At L5-S1, there was some spatial distortion from adjacent metal. There was no disc herniation or stenosis seen, and disc hydration appeared normal. The neural foramina were poorly seen.

Electrodiagnostic studies performed 08/31/10 revealed evidence of chronic only left L3, L4, L5, and S1 radiculopathy with no acute changes or reinnervation noted. There was chronic only L3 and L4 radiculopathy on the right side with no acute changes or reinnervation noted. There was no peripheral neuropathy or myopathy noted.

A post myelogram CT of the lumbar spine performed 09/23/10 noted bilateral posterior interpedicular hardware fixation with laminar plates without any hardware fracture. There was a disc expander present at L4-L5. At L1-L2, there was minimal posterior spurring of the L1 vertebral body, indenting the anterior thecal sac. There was a mild disc bulge, indenting the anterior thecal sac. There was mild ligamentum flavum noted. At L2-3, there was downward tilting of the L2 vertebral body and upward tilting of the L3 vertebral body with large anterior spurring. There was a large Schmorl's node at the upper anterior endplate at L3. There was moderate to severe narrowing of the disc space. The tilting of the vertebral bodies caused straightening and loss of lordotic

curvature. There was broad-based disc disease. The spinal canal was narrowed to 0.7 cm. There was severe narrowing of the lateral recesses. There was mild posterior element hypertrophy. At L3-L4, there was diffuse disc bulge and flattening of the anterior thecal sac. The spinal canal measured 0.8 cm. There was disc material extending just posterior to the upper endplate of L4. There was narrowing of the lateral recesses. There was also mild posterior element hypertrophy. At L4-L5, there was extensive streak artifact from the employee's hardware fixation, severely limiting evaluation. The spinal canal appeared to be widely patent. The neural foramina were patent. At L5-S1, there was a mild disc bulge. There was narrowing of the lateral recesses bilaterally. There was also facet hypertrophy and posterior element hypertrophy. There was mild asymmetry of the right nerve root of S1 that could be part of the disc impressing upon its anterior aspect.

The employee saw Dr. on 10/13/10 with complaints of low back pain and bilateral leg pain rated 8 out of 10. The pain worsened with sitting, standing, walking, and physical therapy. Prior testing included MRI, CT myelogram, and electrodiagnostic studies. Physical examination revealed diffuse paraspinal tenderness from the incision going distally. There was no sciatic notch tenderness. The employee could heel and toe rise normally. Sensation was intact to light touch. Straight leg raise was congruous. Range of motion of the hips was symmetric. Radiographs of the lumbar spine demonstrated Steffee plates bilaterally at L4-L5. There was a superior compression fracture with anterior osteophytes bridging the L2-L3, and there was a slight kyphosis with flexion and extension. The employee was assessed with low back pain with bilateral leg pain. The employee was recommended for possible surgical intervention.

The employee saw Dr. on 11/02/10 with complaints of pain in the low back and bilateral legs. Physical examination revealed symmetric reflexes at the knees and ankles. Sitting root test did cause back pain and pain into the thighs bilaterally. The employee was recommended for discography at L2-L3, L3-L4, and L4-L5, followed by decompression at L2-L3 and L3-L4 with hardware removal and replacement.

The employee was seen for behavioral medicine evaluation on 11/30/10. The employee rated his pain at 8 out of 10. The pain was improved with medications, heat, and reclining. The employee complained of sleep disturbance due to pain. Current medications included Hydrocodone, Meloxicam, and Flexeril. The employee was noted to have increased irritability and sleep disturbance. The employee was cleared to proceed with discogram without interference from psychosocial factors.

The request for discography at L2-L3, L3-L4, and L5-S1 was denied by utilization review on 12/09/10 as there had not been any recent studies documented to represent necessarily a valid determination of pain generator or generators; and therefore, could not be considered reasonably required as per applicable guidelines, specifically when the details of this case have been evaluated.

The request for discography at L2-L3, L3-L4, and L5-S1 was denied by utilization review on 12/14/10 as studies had suggested that reproduction of the employee's specific back pain complaints on injection of one or more discs (concordance of symptoms) was of limited diagnostic value.

The employee saw Dr. on 01/19/11 with complaints of back pain. Physical examination was not performed. The employee was assessed with lumbar sprain and spondylosis. The employee was prescribed Flexeril. The employee was kept off of work.

ANALYSIS AND EXPLANATION OF THE DECISION INCLUDE CLINICAL BASIS, FINDINGS, AND CONCLUSIONS USED TO SUPPORT THE DECISION.

The request for discography at L2-L3, L3-L4, and L5-S1 is not recommended as medically necessary. Discography is not recommended within current evidence based guidelines as there are several high quality clinical studies which significantly question the efficacy of the procedure in determining the appropriateness of lumbar surgical intervention for discogenic pain. There is no clinical documentation provided for review to support that the employee should exceed guidelines recommendations for discography. Additionally, guidelines indicate that if discography is to be performed, that it be limited to two levels with one level being the control level. The current request is for three levels. As the request is not recommended within current evidence-based guidelines and the clinical documentation does not support that the employee should exceed guidelines recommendations, the request is not recommended.

A DESCRIPTION AND THE SOURCE OF THE SCREENING CRITERIA OR OTHER CLINICAL BASIS USED TO MAKE THE DECISION

Official Disability Guidelines, Online Version, Low Back Chapter

Not recommended. In the past, discography has been used as part of the pre-operative evaluation of patients for consideration of surgical intervention for lower back pain. However, the conclusions of recent, high quality studies on discography have significantly questioned the use of discography results as a preoperative indication for either IDET or spinal fusion. These studies have suggested that reproduction of the patient's specific back complaints on injection of one or more discs (concordance of symptoms) is of limited diagnostic value. (Pain production was found to be common in non-back pain patients, pain reproduction was found to be inaccurate in many patients with chronic back pain and abnormal psychosocial testing, and in this latter patient type, the test itself was sometimes found to produce significant symptoms in non-back pain controls more than a year after testing.) Also, the findings of discography have not been shown to consistently correlate well with the finding of a High Intensity Zone (HIZ) on

MRI. Discography may be justified if the decision has already been made to do a spinal fusion, and a negative discogram could rule out the need for fusion (but a positive discogram in itself would not allow fusion). (Carragee-Spine, 2000) (Carragee2-Spine, 2000) (Carragee3-Spine, 2000) (Carragee4-Spine, 2000) (Bigos, 1999) (ACR, 2000) (Resnick, 2002) (Madan, 2002) (Carragee-Spine, 2004) (Carragee2, 2004) ([Maghout-Juratli, 2006](#)) (Pneumaticos, 2006) (Airaksinen, 2006) ([Manchikanti, 2009](#)) Discography may be supported if the decision has already been made to do a spinal fusion, and a negative discogram could rule out the need for fusion on that disc (but a positive discogram in itself would not justify fusion). Discography may help distinguish asymptomatic discs among morphologically abnormal discs in patients without psychosocial issues. Precise prospective categorization of discographic diagnoses may predict outcomes from treatment, surgical or otherwise. (Derby, 2005) (Derby2, 2005) (Derby, 1999) Positive discography was not highly predictive in identifying outcomes from spinal fusion. A recent study found only a 27% success from spinal fusion in patients with low back pain and a positive single-level low-pressure provocative discogram, versus a 72% success in patients having a well-accepted single-level lumbar pathology of unstable spondylolisthesis. (Carragee, 2006) The prevalence of positive discogram may be increased in subjects with chronic low back pain who have had prior surgery at the level tested for lumbar disc herniation. (Heggeness, 1997) Invasive diagnostics such as provocative discography have not been proven to be accurate for diagnosing various spinal conditions, and their ability to effectively guide therapeutic choices and improve ultimate patient outcomes is uncertain. (Chou, 2008) Although discography, especially combined with CT scanning, may be more accurate than other radiologic studies in detecting degenerative disc disease, its ability to improve surgical outcomes has yet to be proven. It is routinely used before IDET, yet only occasionally used before spinal fusion. ([Cohen, 2005](#)) Provocative discography is not recommended because its diagnostic accuracy remains uncertain, false-positives can occur in persons without low back pain, and its use has not been shown to improve clinical outcomes. (Chou2, 2009) This recent RCT concluded that, compared with discography, injection of a small amount of bupivacaine into the painful disc was a better tool for the diagnosis of discogenic LBP. (Ohtori, 2009) Discography may cause disc degeneration. Even modern discography techniques using small gauge needle and limited pressurization resulted in accelerated disc degeneration (35% in the discography group compared to 14% in the control group), disc herniation, loss of disc height and signal and the development of reactive endplate changes compared to match-controls. These findings are of concern for several reasons. Discography as a diagnostic test is controversial and in view of these findings the utility of this test should be reviewed. Furthermore, discography in current practice will often include injecting discs with a low probability of being symptomatic in an effort to validate other disc injections, a so-called control disc. Although this strategy has never been confirmed to increase test validity or utility, injecting normal discs even with small gauge needles appears to increase the rate of degeneration in these discs over time. The phenomenon of accelerated adjacent segment degeneration adjacent to fusion levels may be, in part, explained by previous

disc puncture if discography was used in segments adjacent to the fusion. Similarly, intradiscal therapeutic strategies (injecting steroids, sclerosing agents, growth factors, etc.) have been proposed as a method to treat, arrest or prevent symptomatic disc disease. This study suggests that the injection procedure itself is not completely innocuous and a recalculation of these demonstrated risks versus hypothetical benefits should be considered. (Carragee, 2009) Discography involves the injection of a water-soluble imaging material directly into the nucleus pulposus of the disc. Information is then recorded about the pressure in the disc at the initiation and completion of injection, about the amount of dye accepted, about the configuration and distribution of the dye in the disc, about the quality and intensity of the patient's pain experience and about the pressure at which that pain experience is produced. Both routine x-ray imaging during the injection and post-injection CT examination of the injected discs are usually performed as part of the study. There are two diagnostic objectives: (1) to evaluate radiographically the extent of disc damage on discogram and (2) to characterize the pain response (if any) on disc injection to see if it compares with the typical pain symptoms the patient has been experiencing. Criteria exist to grade the degree of disc degeneration from none (normal disc) to severe. A symptomatic degenerative disc is considered one that disperses injected contrast in an abnormal, degenerative pattern, extending to the outer margins of the annulus and at the same time reproduces the patient's lower back complaints (concordance) at a low injection pressure. Discography is not a sensitive test for radiculopathy and has no role in its confirmation. It is, rather, a confirmatory test in the workup of axial back pain and its validity is intimately tied to its indications and performance. As stated, it is the end of a diagnostic workup in a patient who has failed all reasonable conservative care and remains highly symptomatic. Its validity is enhanced (and only achieves potential meaningfulness) in the context of an MRI showing both dark discs and bright, normal discs -- both of which need testing as an internal validity measure. And the discogram needs to be performed according to contemporary diagnostic criteria -- namely, a positive response should be low pressure, concordant at equal to or greater than a VAS of 7/10 and demonstrate degenerative changes (dark disc) on MRI and the discogram with negative findings of at least one normal disc on MRI and discogram.