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DATE OF REVIEW: 12/19/2007

IRO CASE #:

DESCRIPTION OF THE SERVICE OR SERVICES IN DISPUTE:

EMG & NCS bilaterally upper extremities

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

This case was reviewed by a Texas licensed MD, specializing in Orthopedic Surgery.

REVIEW OUTCOME:

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

Upheld

Health Care Service(s) in Dispute	CPT Codes	Date of Service(s)	Outcome of Independent Review
EMG & NCS bilaterally upper extremities	95861, 95900, 95903, 95904 99242	Upon approval	Upheld

INFORMATION PROVIDED TO THE IRO FOR REVIEW:

Documentation:	Date:
MRI of Right Shoulder & Cervical –Open MRI	07/14/04
MRI of Right Shoulder –Healthscan	06/21/05
MR Arthrogram of Right Shoulder – Dr.	08/26/05
Designated Doctor Medical Evaluation – TWCC 69 –MD	09/06/05
Designated Doctor Re-Examination –MD	10/01/05
MRI Thoracic w/o contrast –Surgical Hospital	10/04/07
Designated Doctor Medical Evaluation – TWCC 69 –MD	12/13/05
Letter of Clarification regarding impairment rating –MD	02/20/06
Designated Doctor Re-Examination –MD	05/22/07
Office Visit –MD	06/11/07
Office Visit –MD	10/15/07
Utilization Review request - EMG/NCV upper extremities –MD	10/16/07
Utilization Review determination – adverse for EMG/NCV upper extremities – ODG guidelines and criteria included –	10/19/07
Utilization Review – request for reconsideration – EMG/NCV upper extremities - MD	10/30/07
Operative report –Medical Centers –MD	11/01/07
Utilization Review Appeal determination – adverse for EMG/NCV upper extremities –	11/07/07

ODG guidelines and criteria included –	
Dispute response –	11/30/07

PATIENT CLINICAL HISTORY [SUMMARY]:

The patient is a xx year old white female who was injured on xx/xx/xx. She continues to complain of “expansive right upper extremity” pain not explained by either multiple physical examinations by a designated doctor, electro-diagnostic studies or imaging studies and despite the multiple right upper extremity surgical procedures.

The patient’s diagnoses are S/P carpal tunnel release right wrist; S/P two right shoulder surgeries and S/P shoulder manipulation; continued bilateral upper extremity pain with right shoulder and trapezium pain radiating up into the neck. The patient has had 24 physical therapy sessions and chronic pain management.

On 07/14/04 a right shoulder MRI was done and revealed only A/C joint osteoarthritis. On the same day, a cervical MRI revealed only pre-existent changes with diffuse C5-6 bulge and smaller C6-7 bulge and degenerative disc disease. On 08/26/05 an MR arthrogram performed showed post-operative changes and 25% partial thickness rotator cuff tear that was 4mm in size. A cervical MRI which was done on 10/04/05 revealed the previously seen degenerative changes at C5-6 more than at C6-7. The C5-6 osteophyte/disc complex touched the cord, but did not displace or flatten it. There was no abnormal signal within the cord. There was foraminal bony encroachment with the right being greater than the left, which is pre-existent.

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

The patient complains of persistent right upper extremity pain including the shoulder with pain radiating from the shoulder to the neck despite multiple surgical procedures to the right shoulder and a carpal tunnel release. Dr. states a cervical MRI revealed C6-7 spinal cord effacement. Dr. states that her right shoulder pain with radicular complaints and the MRI findings indicate she has a neurologic compressive lesion. The MRI reveals subarachnoid effacement, and the changes are at C5-6, not at C6-7. The cord appeared normal without intrinsic signal abnormality.

Based upon the above rationale and evidence based peer reviewed guidelines, the previous denials for the requested service is upheld.

ODG:

Recommended (needle, not surface) as an option in selected cases. The American Association of Electrodiagnostic Medicine conducted a review on electrodiagnosis in relation to cervical radiculopathy and concluded that the test was moderately sensitive (50%-71%) and highly specific (65%-85%). ([AAEM, 1999](#)) EMG findings may not be predictive of surgical outcome in cervical surgery, and patients may still benefit from surgery even in the absence of EMG findings of nerve root impingement. This is in stark contrast to the lumbar spine where EMG findings have been shown to be highly correlative with symptoms.

Positive diagnosis of radiculopathy: Requires the identification of neurogenic abnormalities in two or more muscles that share the same nerve root innervation but differ in their peripheral nerve supply.

Timing: Timing is important as nerve root compression will reflect as positive if active changes are occurring. Changes of denervation develop within the first to third week after compression (fibrillations and positive sharp waves develop first in the paraspinals at 7-10 days and in the limb muscles at 2-3 weeks), and reinnervation is found at about 3-6 months

Acute findings: Identification of fibrillation potentials in denervated muscles with normal motor unit action potentials (usually within 6 months of symptoms: may disappear within 6 weeks in the paraspinals and persist for up to 1-2 years in distal limbs).

Chronic findings: Findings of motor unit action potentials with increased duration and phases that represent reinnervation. With time these become broad, large and polyphasic and may persist for years.

Anatomy: The test primarily evaluates ventral (anterior) root function (motor) and may be negative if there is dorsal root compression (sensory) only. Only C4-8 and T1 in the neck region have limb representation that can be tested electrodiagnostically. The anatomic basis for this lies in the fact that the cervical nerve roots have a motor and a sensory component. It is possible to impinge the sensory component with a herniated disc or bone spur and not affect the motor component. As a result, the patient may report radicular pain that correlates to the MRI without having EMG evidence of motor loss.

Paraspinal fibrillation potentials: May be seen in normal individuals and are nonspecific for etiology. The presence of these alone is insufficient to make a diagnosis of radiculopathy and they may be absent when there is a diagnosis of radiculopathy secondary to sampling error, timing, or because they were spared. They may support a diagnosis of radiculopathy when corresponding abnormalities are present in the limb muscles.

Indications when particularly helpful: EMG may be helpful for patients with double crush phenomenon, in particular, when there is evidence of possible metabolic pathology such as neuropathy secondary to diabetes or thyroid disease, or evidence of peripheral compression such as carpal tunnel syndrome.

H-reflex: Technically difficult to perform in the upper extremity but can be derived from the median nerve. The test is not specific for etiology and may be difficult to obtain in obese patients or those older than 60 years of age.

(Negrin, 1991) (Alrawi, 2006) (Ashkan, 2002) (Nardin, 1999) (Tsao, 2007) See [Discectomy-laminectomy-laminoplasty](#). (Surface EMG and F-wave tests are not very specific and therefore are not recommended.

Not recommended. There is minimal justification for performing nerve conduction studies when a patient is presumed to have symptoms on the basis of radiculopathy. (Utah, 2006) See also the [Carpal Tunnel Syndrome Chapter](#) for more details on NCS.

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

ODG:

ODG Online, Treatment, Neck and Upper Back, EMG

TEXAS DEPARTMENT OF INSURANCE COMPLAINT PROCESS: the Texas Department of Insurance requires Independent Review Organizations to be licensed to perform Independent Review in Texas. To contact the Texas Department of Insurance regarding any complaint, you may call or write the Texas Department of Insurance. The telephone number is 1-800-578-4677 or in writing at: Texas Department of Insurance, PO Box 149104 Austin TX, 78714. In accordance with Rule 102.4(h), a copy of this Independent Review Organization (IRO) Decision was sent to the carrier, the requestor and claimant via facsimile or U.S. Postal Service from the office of the IRO on 12/19/2007.

