Evaluation of Distal Symmetric Polyneuropathy: Role of Laboratory and Genetic Testing

Case Presentation

A 42-year-old male presents to the neurology clinic for a neurologic consultation with his family doctor for evaluation. He reports that over the past 6 months he has been having difficulties with burning pain in his feet. He reports that it started on the bottoms of his feet and has progressed over his toes and is now extending up to his ankles. He reports that the pain is worse at night. He describes it as a 6/10 in intensity. It is worse after he has been up walking on his feet the whole day. His feet feel better in the morning. There are no specific things that he can do to make the pain go away. At times he takes some ibuprofen with minimal improvement. He is concerned that the symptoms are progressing. He denies any weakness in his feet. He denies any medical problems. He had his appendix out as a child. He drinks a glass of wine with dinner and has never smoked. He has a family history of diabetes in his mother. His father has been told that he has neuropathy. He is married with two children and works as an investment banker. He takes a multivitamin and an occasional ibuprofen. He has no known drug allergies. Review of systems questioning to 10 systems reveals polyuria, polydipsia, and intermittent fatigue only.

On physical examination he is a well-developed and well-nourished male in no acute distress. His blood pressure is 120/70, pulse is 68, respiratory rate is 12, and temp is 98.5. No bruits are heard over his neck. There are no murmurs or abnormal heart sounds. He has good radial pulses. He is alert and oriented to person, place, date, and situation. His memory is intact for recent and remote events. His language is fluent and he had no naming difficulties. He is able to follow commands. Cranial nerves reveal a normal fundoscopic examination, PERRLA, extraocular muscles were intact, visual fields are full to confrontation. Facial sensation and motor strength are symmetric bilaterally. Hearing was intact bilaterally to finger rub. Palate, tongue, and uvula are midline. Sternocleidomastoid and trapezius were 5/5 bilaterally. Motor was 5/5 throughout, with normal bulk and tone and no drift. Light touch is intact throughout. Sensory was decreased to pinprick to the ankles bilaterally. Proprioception and vibration were normal. Reflexes were 2/4 throughout, ¼ at the ankles and toes downgoing. Coordination was normal to finger to finger, heel to shin bilaterally. Gait was intact to normal, toe, and heel testing. Tandem walking was normal.

You discuss the evidence of nerve damage with the patient and discuss a workup with blood testing to include B12, glucose, methylmalonic acid, homocysteine, and SPEP. You also mention that EMG and nerve conduction testing would be useful to delineate the nature and severity of the neuropathy. Do the electrodiagnostic tests demonstrate sensory, motor, or sensorimotor involvement? What is the distribution of the neuropathy? Is it predominantly axonal or

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demyelinating? This information may prove useful, if the initial screening tests are negative, in planning for possible future genetic testing, as his father has a history of neuropathy. You discuss medication options for the neuropathic pain though patient prefers to continue with his rare ibuprofen use for now.

Questions

1. For the evaluation of patients with evidence of a peripheral neuropathy there is Level C evidence that:

A. Screening laboratory tests are not useful
B. Genetic testing should always be performed routinely even if there is no family history of neuropathy
C. Screening laboratory testing should include B12, iron, glucose, SPEP, heavy metals, and ESR
D. Screening laboratory testing may include B12, glucose, methylmalonic acid, homocysteine, and SPEP
E. Genetic testing should be performed prior to screening laboratory testing.

Correct answer is D.

2. For the evaluation of patients with a family history of a hereditary neuropathy there is Level A evidence that:

A. Genetic testing is established as useful for the accurate diagnosis and classification of hereditary neuropathies
B. Genetic testing is established as not useful for the accurate diagnosis and classification of hereditary neuropathies
C. Genetic testing is useful for the diagnosis of diabetic neuropathies.
D. Genetic testing is cost effective in all cases of neuropathy.
E. Genetic testing is useful for the diagnosis of toxic neuropathies.

Correct answer is A.

ICD-9-CM Discussion

We know from the information given that this patient has neuropathy, but the type is unknown. ICD-9-CM poorly classifies neuropathies. The three-digit category 356 is named “Hereditary and idiopathic peripheral neuropathies.” The three-digit category 357 is named “Inflammatory and toxic neuropathy.” It would seem that we don’t have enough information to code even the “unspecified” (356.9 or 357.9) codes for either. This is an instance where the index (Volume 2 of ICD-9-CM) gives the “default” code to be used. In the index find:

Neuropathy, neuropathic
   Peripheral (nerve) (see also Polyneuropathy) 356.9
Also indexed:

**Polyneuropathy** (peripheral) 356.9

What these index entries tell us is that in ICD-9-CM, the default code for the unspecified neuropathy and/or polyneuropathy is:

**356.9 Hereditary and idiopathic peripheral neuropathy, unspecified.**

*This code, however, may be used only until the testing is finished and a more definitive diagnosis is made.*

The symptom code for pain in the feet would not be acceptable here because we already have enough information to say this patient has some type of neuropathy.

**Evaluation and Management Coding Discussion**

The case vignette includes a comprehensive history and physical examination. In particular, a 23-point single-system neurologic examination is satisfied, which is needed for a comprehensive examination. Medical Decision Making (MDM) is Moderate, as the patient has a new problem to the neurologist requiring further evaluation, a few blood laboratory studies are ordered, and the patient has an undiagnosed problem with an uncertain prognosis. No new drugs are prescribed, making the risk of management minimal. The proper E&M code would be a level 4 new consultation.

To be able to code for a level 5 new consultation, MDM would need to be High. To attain a High MDM, one would have needed to have ordered an EMG and nerve conduction study (1 point) and review and summarize old records from someone other than the patient, or discuss the case with another health care provider (2 points). The neurologist could have also achieved High MDM by independently visualizing an outside imaging study, biopsy, or the raw data of any outside EMG in addition to ordering more laboratory testing and repeating the EMG. The latter rationale assumes that those studies had been done by an outside physician. Another way to achieve high MDM would have been to prescribe drug therapy for neuropathic pain that requires intensive monitoring such as carbamazepine or phenytoin.

A level 5 consultation code could also be billed using the Counseling and Coordination of Care Codes. The neurologist would have needed to have spent 80 minutes with the patient and 40 minutes or more was spent discussing the illness, its prognosis, testing, and treatment.

**Electrodiagnostic Testing:**

**Nerve Conduction Studies, Reflex and Late Response Testing**

95907  1-2 nerve conduction studies
95908  3-4 nerve conduction studies
95909  5-6 nerve conduction studies

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The Proper Use of Codes 95907-95913

One of the most frequently asked questions about nerve conduction study coding is: how does one code for studies of two or more branches of a given motor or sensory nerve?

This question is answered by current definitions of codes 95907 – 95913 and guidance from 2013 CPT®. A nerve conduction study is counted only once when multiple sites on the same nerve are stimulated or recorded. The easiest way to determine what constitutes a nerve is to use the Appendix J of the CPT 2013 manual. The number of tests should be added to determine which code to report.

Numbers of Studies That Should Be Performed

Many physicians indicate that they are not being paid for nerve conduction studies. Reasons for rejections include statements that the number of nerves tested is not necessary or the ICD-9-CM codes that have been used are not appropriate. Appendix J of the CPT® manual includes a table outlining the recommended numbers of nerve conduction studies that can be used to diagnose 90% of patients with certain common conditions and symptoms.

CPT® Changes 2006: An Insider’s View explained the rationale behind this table as follows: “The maximum number of studies table summarizes the recommended maximum number of studies per diagnostic category necessary for a physician to arrive at a diagnosis in 90% of patients with that final diagnosis, when performing nerve conduction studies, needle electromyography (EMG) and repetitive nerve stimulation testing. The numbers in the table are to be used as a tool to detect outliers to assist in appropriate reporting. Each number in the table represents one study or unit. The maximum numbers are designed to apply to a diverse range of practice styles as well as practice types, including those at referral centers where more complex testing is frequently necessary. In simple, straightforward cases, fewer tests will be necessary. This is particularly true when results of the most critical tests are normal. In complex tests, the maximum numbers in the table will be insufficient for the physician to arrive at a complete diagnosis. In cases where there are borderline findings, additional tests may be required to determine if the findings are significant.

The appropriate number of studies to be performed should be left to the judgment of the physician performing the electrodiagnostic (EDX) evaluation; however, in the small number of cases that require testing in excess of the numbers listed in the table, the physician should be able to provide supplementary documentation to justify the additional testing. Such documentation should explain what other differential diagnostic problems needed to be ruled out in that particular situation. In some patients, multiple diagnoses will be established by EDX testing, and
the recommendations listed in the table for a single diagnostic category will not apply. It should be noted that in some situations it is necessary to test an asymptomatic contralateral limb to establish normative values for an individual patient. Normal values based on the general population alone are less sensitive than this approach; therefore, restrictions on contralateral asymptomatic limb testing will reduce the sensitivity of electrodiagnostic tests.”

Electromyography

Needle electromyography procedures include the interpretation of electrical waveforms measured by equipment that produces both visible and audible components of electrical signals recorded from the muscle(s) studied by the needle electrode. Codes 95885, 95886, and 95887 are used when performed on the same day with nerve conduction studies.

95885 Needle electromyography, each extremity, with related paraspinal areas, when performed, done with nerve conduction, amplitude and latency/velocity study; limited (List separately in addition to code for primary procedure)

95886 Needle electromyography, each extremity, with related paraspinal areas, when performed, done with nerve conduction, amplitude and latency/velocity study; complete, five or more muscles studied, innervated by three or more nerves or four or more spinal levels (List separately in addition to code for primary procedure)

95887 Needle electromyography, non-extremity (cranial nerve supplied or axial) muscle(s) done with nerve conduction, amplitude and latency/velocity study (List separately in addition to code for primary procedure)

The following codes are used when the needle examination (EMG) is not done on the same day.

95860 Needle electromyography; one extremity with or without related paraspinal areas

95861 two extremities with or without related paraspinal areas

(For dynamic electromyography performed during motion analysis studies, see 96002–96003)

95863 three extremities with or without related paraspinal areas

95864 four extremities with or without related paraspinal areas

Proper Use of Needle EMG CPT® Codes 95860–95864

In order to clarify the proper use of these codes, CMS has formulated the following policy:

CPT® codes 95860, 95861, 95863, and 95864 (Needle electromyography of 1, 2, 3, or 4 limbs with or without related paraspinal areas).

To bill these codes, extremity muscles innervated by three nerves (for example, radial, ulnar, median, tibial, peroneal, femoral, not sub-branches) or four spinal levels must be evaluated, with a minimum of five muscles studied per limb.

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