

EMG Interpretation and Discussion:

Listing of History and Physical Exam Objective Findings:

- [History of persistent burning pain on the left calf and foot.]
- Exam found tenderness over the pes anserinus and medial tibial border.
- Exam didn't find Tinel's sign over the fibular head.

Data Summary of Left Lower Limb Electrical Study:

- ◊ Peroneal Motor: DL, Amp and NCV are WNL.
- ◊ Peroneal F-waves: F-M WNL, persistence 10/16, A-waves present but with normal temporal dispersion.
- ◊ Peroneal Sensory: DL WNL, Amp normal, NCV crossing the ankle was normal.
- ◊ Tibial Motor: DL, Amp WNL, NCV all were WNL.
- ◊ Tibial F-waves: F-M latency WNL, no A-waves, persistence is 16/16; increased temporal dispersion.
- ◊ Tibial Sensory (plantar nerve): DL WNL to both toes, Amp WNL to both toes, NCV was WNL for both toes.
- ◊ Saphenous sensory: DL slightly increased (and thus the NCV was slightly diminished) but Amp was WNL.

Clinical Correlations of Left Lower Limb Electrical Study:

- ◊ The history of burning quality pain in the lower limb usually means neuropathic pain, which can arise from injury to the nerve that innervates the designated territory where the pain is perceived. In this case, the involved nerves would be either the peroneal, tibial, or saphenous.
- ◊ The electrical exam showed no focal neuropathy of the peroneal or tibial nerves near the knee or ankle. The only abnormality found was slight slowing of the saphenous near the ankle. Such a finding is consistent with a focal demyelination, but not axonal injury. However, though having a nerve pinch near the ankle might explain near-ankle pain, it is not likely to be responsible for perceived pain higher up in the leg.
- ◊ The other thing that all the normal obtained values tells us is that no *generalized* neuropathy exists (think "sick nerves" similar to what diabetics can have). A *focal* neuropathy is a localized pinch in an otherwise healthy nerve.
- ◊ To sum up, the electrical exam did not solve the mystery of what is causing her pain, but at least it helped rule-out a generalized neuropathy.