



“Normal” EMG’s in Polio Survivors with a History of Paralytic Polio

By Arne Sandberg and Erik Stalberg

A Bruno Byte “Tidbit”

Posted by Dr. Richard L. Bruno, HD, PhD

Dr. Bruno’s Original Post: A survivor asked me if this article explains why her EMG was negative on her arms and positive on her legs. The article presents a very likely explanation: Poliovirus *damages* – but does not kill - motor neurons and temporarily renders them nonfunctional, causing paralysis. The motor neurons recover after about a month and can eventually function normally but without other motor neurons sprouting, sprouting which causes abnormal EMG findings (“giant” motor units) seen in most paralytic polio survivors (*J Rehabil Med* 2004; 36: 169–176.)

<https://www.researchgate.net/publication/8343627> How to interpret normal electromyographic findings in patients with an alleged history of polio

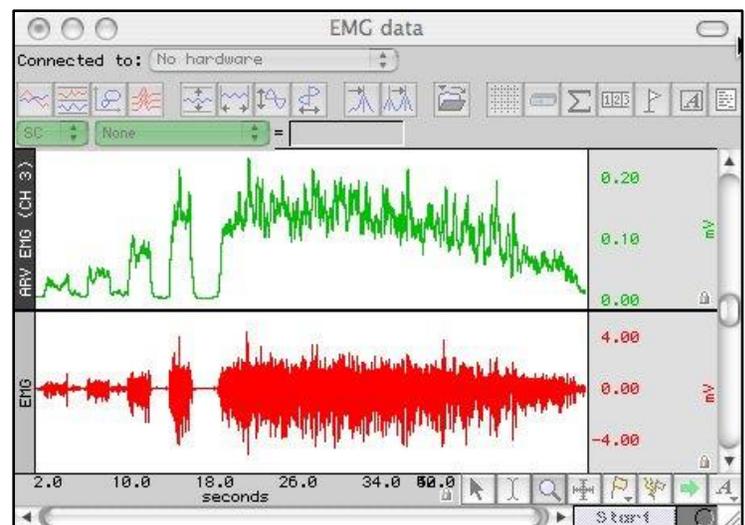
In some patients with a history of polio, the electromyogram is normal, not showing the typical neurogenic signs (“giant” motor units caused by sprouting of motor neurons after the poliovirus kills nearby motor neurons). The aim of this study was to explain the normal findings in electromyography, especially in paralytic polio.

Design: Retrospective study.

Subjects/methods: Concentric needle electromyography, macroelectromyography (including single fibre electromyography) and neurography were performed in various combinations in 688 patients with an alleged history of polio.

Results: Thirty-five patients with paralytic polio had normal or minimally abnormal neurophysiology. In 6 patients the diagnosis of polio was rejected and was instead found to be other diagnoses. Three patients had a very atypical history. Of the 26 with possible paralytic polio, 17 showed a strong suspicion of previous paralytic polio without any neurophysiological signs of degeneration of the anterior horn cells.

Conclusion: If neurophysiological findings are normal in patients with a history of polio, the original diagnosis may be incorrect. However, the absence of electromyographic changes **does not** entirely exclude a previous history of paralytic polio (paralysis due to temporary loss of motor neuron functional but without motor neuron death that result in EMG evidence of compensatory sprouting of nearby healthy motor neurons).



The Encyclopedia of Polio and Post-Polio Sequelae

contains all of [Dr. Richard Bruno’s](#) articles, monographs, commentaries and “Bruno Bytes”

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