



Friday, November 30th, 2012, 2:00 P.M.

Room No. 109, DASAN bldg. 1st Floor

(Host: Prof. Boreom Lee / Language: Korean)

A New Perspective of Clinical Electrophysiology for Neuromuscular Disorders

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Neuromuscular disorders are common, comprising of diseases involving the peripheral nerve, muscle or neuromuscular junction of various pathological processes. Conventional electrophysiologic techniques such as nerve conduction study (NCS) and needle electromyography (EMG) have been extensively developed and validated over the past decades, and now widely used in clinical practice. Despite the progress, however, there are several challenges in which both difficulty and opportunity exist. First, most techniques are still based on single-channel recordings that do not provide spatial information on the architecture of motor units. Second, needle EMG, probably the most widely used technique in electrodiagnostic medicine, is invasive, causing discomfort and pain to the patients. Other limitations include poor reproducibility, lack of standardization in recently developed techniques such as motor unit number estimation (MUNE), and absence of software tools for analyzing and visualizing complex EMG data. A new approach from perspectives of engineering and biophysics will facilitate deeper understanding of the motor unit physiology, promoting clinical applicability of electrophysiologic techniques in various contexts. The seminar will address the challenges and examples of recent innovations in clinical electrophysiology for neuromuscular disorders. Keywords will be “noninvasive” (technical aspect), “high density” (amount of spatial information) and “pipeline for analysis and visualization” (clinical applications).