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### Approach to a neurological patient

Neurological examination remains the most important aspect while approaching a neurological patient. Despite recent advances in imaging modalities such as CT or MRI, the neurological examination still remains the foundation of the neurological workup. Objective of a good neurological workup includes to find out if the patients is neurological or not, where is the lesion localized, how severe is the disease and what types of neurological diseases may explain the clinical signs. In all patients a neurological examination should be preceded by a through general physical examination of all body system. Neurological workup needs simple setup and equipment like, non-slippery surface, pleximeter, curved haemostat, penlight, schirmer tear strips, cotton buds and cotton balls and an ophtlamoscope. The neurological examination is divided into two parts, hands-off and hands-on exam. Hands off exam or observation include evaluating: Mentation & behavior, posture and body position at rest, gait and identification of abnormal involuntary movements. Hands-on examination include: Cranial nerve assessment, postural reaction testing, spinal reflexes, muscle tone and size and sensory evaluation. Neuroanatomic localization and differential diagnosis are keys to an accurate diagnosis. Functional neuroanatomy can be divided into three main structures: Intracranial structures (forebrain, brainstem and cerebellum), Spinal Cord (C1-C5, C6-T2, T3-L3 and L4-S3) and Peripheral nervous system (peripheral nerve, neuromuscular junction and muscle). Vitamin-D is the common mnemonic that all neurologists use for their differential diagnosis. V-Vascular; I-Infectious/Inflammatory; T-Traumatic/Toxic; A-Anomalous; M-Metabolic; I-Idiopathic; N-Neoplastic/Nutritional; D-Degenerative. Diagnostics for a neurological patient include: Survey radiographs, Myelography, Cerebrospinal fluid (CSF) analysis, Biopsies, Electrophysiology, Advanced diagnostic imaging like Computed Tomography (CT), Magnetic Resonance Imaging (MRI). Even though we have advanced imaging at our disposal, it is imperative that we begin with survey radiographs using proper positioning techniques. Radiographs should ideally be done under sedation and or anesthesia. Animals should be positioned with great care as luxations or fractures can worsen with movements. MRI scans are a preferred imaging modality for most neurological patients by virtue of their high resolution soft tissue imaging. CT scans on the other hand are good for bony imaging. CSF is collected from cisterna magna or using lumbar puncture. CSF analysis plays an important role in diagnosing infectious/inflammatory diseases. CSF is low in protein content; hence it has to be analyzed within 20-30 minutes to prevent degradation of its cellular contents. Cell counts can be performed in the clinic itself using a haemocytometer. Anti-acetylcholine receptor antibody testing is the gold standard for diagnosing myasthenia gravis in dogs. The use of appropriate diagnostic modality following a thorough neurologic examination is the key to approach a neurological patient.

### Biography

Prathmesh Deshmukh has obtained his Graduate degree from Bombay Veterinary College, in 2010 and completed certification in Veterinary Acupuncture from CHI Institute of Europe, Spain in 2012. In 2013, he was appointed to the Board of Directors of the World Association of Traditional Chinese Veterinary Medicine (WATCVM). He has attended a course in Veterinary Neuroscience & Advanced Clinical Neurology and Veterinary Magnetic Resonance Imaging (MRI) from European College of Veterinary Neurology, Bologna, Italy. He has attended several continuing education programs and externships at a Neurology Clinic in Spain.

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