Clinical Observation of the Central System of the Spine

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Editorial

A competent examination of the spine may be a fundamental skill to possess throughout the duration of any surgical career. Knowledge of spinal anatomy and physiology together with an efficient examination will aid the clinician in narrowing differential diagnoses and tailor specific investigations. During this article, we've broadly divided clinical examination of the spine into 3 areas. These are clinical examination skills required within the setting of spinal trauma, condition and spinal deformity. It's vital to approach the examination of the spine during a methodical and competent manner. This is often particularly important as long as pathology of the spine can occur in patients of all ages and during a vast array of medical and surgical presentations like all clinical encounters, a thorough history should initially be obtained from the patient. The Apley approach to examination should form the structure to the examination of the spine and will include inspection, palpation, movement and special tests.

Clinical examination of the spine should include examination of the skeletal structure and a comprehensive neurological assessment of both upper and lower limbs. To understand a clinical history and examination findings, it's first important to think about the components of the spine and expected examination findings. The spine consists of seven cervical vertebrae, 12 thoracic vertebrae, five lumbar vertebrae, five sacral vertebrae and 4 coccygeal vertebrae. The fused segments of the sacrum and coccyx provide little contribution to movement. Intervertebral discs between each of the cervical, thoracic and lumbar vertebral bodies permit movement and act as shock absorbers. The spinal canal is found posterior to the vertebral body, within which the medulla spinalis found. Pairs of nerves exit the medulla spinalis and cauda equine as nerve roots at each vertebral level. The medulla spinalis terminates at the extent of L1, at which point the cauda equina continues caudally. A focused history should be performed before examining any patient. This could identify complaints of pain, including back and radicular limb pain, loss of function and neurological deficit, including bladder and bowel dysfunction. A typical pain history should be obtained, including site, onset, radiation and alleviating or exacerbating factors. Current analgesic requirements and former treatments, including conservative and surgical measures, should even be identified.

A patient's age should guide potential diagnoses. Degenerative back pain is rare in younger age groups and this could prompt further investigation, particularly within the presence of atypical or red flag signs and symptoms. Lower back pain with associated radicular pain or sensory disturbance into the leg or foot is implicational a nerve root compression. The foremost common cause for this is often prolapsed intervertebral disc; however, other causes are possible and will be considered. Any associated bladder or bowel dysfunction, or perinatal paraesthesia necessitates emergency clinical assessment and investigation to rule out Cauda Equina Syndrome (CES). A myelopathy patient will typically describe an unsteady gait, limb weakness, sensory disturbance of the upper and/or lower limbs and urinary dysfunction.

A detailed clinical history should be taken from any patient presenting with a spinal deformity. Areas to explore include prenatal and antenatal history, childhood milestones, onset of puberty and case history. Other medical comorbidities should even be discussed, as these can impact upon the acceptable of treatment measures available to the patient.*

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