

Neurological problems in the adult horse

Produced by Holly Marshall from Central Equine Vets

'Holly Marshall BVM&S CertAVP(EM) MRCVS works for Central Equine Vets based in Edinburgh. Holly qualified as a veterinary surgeon in 2009 from the University of Edinburgh and is an RCVS recognised Advanced Practitioner in Equine Medicine. Her particular areas of interest include ophthalmology, neurology, reproduction and respiratory medicine.'

Neurological problems in the horse can be roughly divided into problems that affect the 'central' nervous system or CNS (brain, eye and spinal cord) and 'peripheral' nervous system (nerves and their connections found throughout the body's periphery).

The brain and spinal cord are protected by the skull and vertebral column. Peripheral nerves are less 'protected' with many running just under the skin, and are more susceptible to injury from toxins and trauma which affect their function, resulting in abnormal 'neurological signs'.

Equine CNS disorders affecting the brain are, thankfully, rare in the UK. They usually result in the horse displaying extreme altered behaviour e.g. somnolence and coma or hyper-responsiveness and seizure activity. Elsewhere in the world there are many infectious diseases that can cause CNS, and several are 'zoonotic' i.e. can cross-infect people. Such diseases include rabies and West Nile Virus (a mosquito-borne virus). More commonly, brain dysfunction is attributable to trauma (e.g. a kick to the head), a birth defect or disease (e.g. hydrocephalus or neonatal encephalopathy), or occasionally epilepsy.

Epilepsy in the horse is much rarer than in dogs and cats and can be inherited in some breeds (e.g. Arabians with Juvenile Idiopathic Epilepsy) or acquired (unknown cause, can affect any breed). Epilepsy will typically

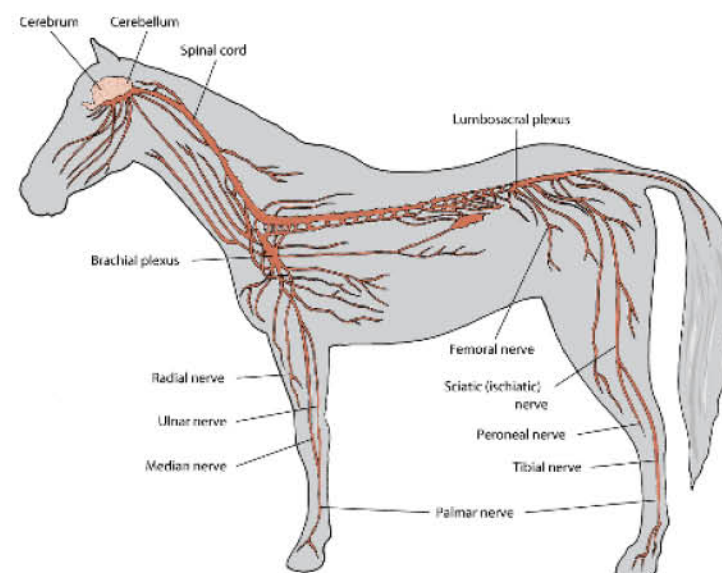


Diagram showing the basic location of the brain, spinal cord and nerve distribution in the horse (Courtesy of msdvetmanual.com)

present with seizures which can vary from generalised tonic-clonic convulsive type muscle movements, where the horse is generally recumbent, to partial focal seizures where only muscle twitching or 'fasciculations' are obvious e.g. lip twitching.

Seizures are commonly reported secondary to more generalised disease processes, such as liver disease/dysfunction, sepsis or rarely PPID (Cushing's disease).

The spinal cord is relatively protected by the bony vertebral column, but in the neck there is little protection. Muscles and ligaments are light here to maintain a flexible, athletic neck that can support skull. Disorders

of the spinal cord are largely the result of pressure exerted on the spinal cord and resulting swelling and fibre damage in the cord. This can occur from a narrowing of the vertebral canal due to trauma and movement of the vertebrae. Signs depend on what region of the spinal cord is affected, but include weakness, incoordination and incorrect foot/limb placement and position. The horse can be born with a narrowed or deformed spinal canal that will cause similar pressure and resulting signs. This condition has several names but is correctly known as Cervical Stenotic Myelopathy resulting in 'Wobblers syndrome'. Wobblers traditionally presents in large framed, fast growing

sports-horse types when they come into work at 3-5 years of age. Despite the possible genetic component, this condition can be seen in all types and breeds and carries a poor prognosis.

Horses like to play and interact with others and in doing so 'fight or flight mode' is activated! As a result, traumatic injuries to peripheral nerves and muscles can occur. One such superficial nerve is the suprascapular nerve of the forelimb. When damaged through trauma (e.g. a kick), or damaged from pressure (e.g. ill-fitting harness in a driving horse), the horse will demonstrate a classical razor-blade prominent spine of the scapula due to loss of muscles either side of the spine. Another easily damaged peripheral nerve is the facial nerve just under the skin. Any pressure (e.g. a tight headcollar left on) or trauma will result in nerve paralysis or dysfunction.



Damage to the facial nerve from a kick, resulting in paralysis of the muscles on the left side of the face (courtesy of Lauren Shamon DVM).



Central Equine Veterinary Services Ltd

Edinburgh: 0131 664 5606

Kinross: 01577 863333

info@centralequinevets.co.uk - www.centralequinevets.co.uk

