Ischaemic myelopathy

What is ischaemic myelopathy and what causes it?

Ischaemic myelopathy is a condition where the blood supply to part of the spinal cord (the bundle of nerves that run inside the spine) is suddenly interrupted by a ‘clot’ that blocks a small artery (blood vessel). This is similar to a stroke or heart attack in people, except that it is the spinal cord that is affected rather than the brain or heart.

‘Ischaemia’ is a loss of blood supply, and ‘myelopathy’ is a form of damage to the nerves of the spinal cord. The cause of the blockage of the spinal cord blood vessels is poorly understood. In the majority of cases the ‘clot’ which blocks the artery is similar in structure to the material that forms the discs (the cushions between the bones of the spine). This disc material is called ‘fibro-cartilage’. It is assumed that some of this disc material somehow moves from its normal location to become lodged in the blood vessels of the spinal cord. This is the reason why the condition is commonly referred to as ‘fibrocartilaginous embolism’ (shortened to ‘FCE’).

Other less common reasons why the blood supply to the spinal cord can be interrupted include either an abscess or a tumour, either of which can press on important blood vessels and prevent blood flow to the nerves.
What are the common signs of ischaemic myelopathy?

Ischaemic myelopathy most commonly occurs in large breed dogs, although it is also encountered in smaller breeds and, very occasionally, in cats. The onset of neurological signs is always extremely rapid and often occurs during vigorous exercise. Neurological abnormalities may vary from mild weakness or incoordination, through to an inability to walk. Paralysis, incontinence and inability to feel pain are possible in severe cases. Ischaemic myelopathy is a non-painful condition, although at the initial onset some patients may cry out or yelp. Neurological signs do not tend to progress after the first 24 hours.

How is ischaemic myelopathy diagnosed?

Ischaemic myelopathy is diagnosed by ruling out other causes of sudden onset neurological signs, such as a 'slipped disc' (see information sheets on cervical disc disease and thoracolumbar disc disease), traumatic disc extrusion or a spinal fracture.

Advanced diagnostic imaging investigations are necessary in order to diagnose ischaemic myelopathy and to rule-out other conditions – an MRI scan is the imaging technique of choice in these circumstances. MRI scanning uses high powered magnets and a computer to generate images of the spine (this is the same technique and the same equipment which is used for body scanning in human patients). It provides detailed information on the location and extent of any blood vessel-related injury to the spinal cord. Myelography is an alternative imaging technique which can also be used for investigating spinal injuries. This involves injecting a dye (contrast agent) around the spinal cord and obtaining multiple X-rays to assess the flow of the dye. Injecting around the spinal cord is not without risk of causing further damage to already compromised nerve tissue, however. Unlike an MRI scan, myelography will not show damage to the spinal cord caused by ischaemic myelopathy, although it will enable some other conditions to be ruled out as the cause of the spinal cord injury. MRI scanning is less invasive than myelography, and with less risk of side-effects, and for most patients MRI provides the best option for investigation. Both MRI and myelography require the dog to have a general anaesthetic.

How can ischaemic myelopathy be treated?

There is no specific treatment for ischaemic myelopathy. Supportive care and nursing are essential in order to aid recovery. Bedding needs to be well padded in order to prevent bed sores. Regular physiotherapy and, in some cases, swimming at a hydrotherapy unit can help function to be regained and assist in building strength. Some patients may require a catheter to be placed in the bladder temporarily to aid urination.

What is the outcome for patients with ischaemic myelopathy?

The outcome in dogs with ischaemic myelopathy depends on two key factors – a) the location and b) the severity of the spinal cord injury. The findings on the neurological examination and MRI investigations can help to predict the chances of recovery.

Dogs that are paralysed and also cannot feel pain in their limbs are unlikely to recover, unfortunately. However, the majority of less severely affected dogs will gradually improve over a period of weeks to months, to a point where they can freely exercise and have a good quality of life. A degree of weakness in one or more limbs may persist in some dogs. Recurrence of ischaemic myelopathy is very uncommon.

Why should I bring my dog with suspected ischaemic myelopathy to Willows?

Our neurology service is led by a team of recognised, accredited Specialists and we aim to provide the best possible care and treatment for your pet in our state-of-the art hospital. Our neurology team works closely with the imaging Specialists who run Willows sophisticated imaging facilities, as well as with expert anaesthesia Specialists and 24-hour veterinary and nursing staff, all of whom help to optimise the potential for our patients to make a full and uneventful recovery.

If you have any queries or concerns, please do not hesitate to contact us.