



VETERINARY VOICE: Tips of the Trade

Neurology-Syringomyelia

Definition? When do you see syringomyelia?

A term that indicates the presence of fluid-filled cavities in the spinal cord. Syringomyelia can be present with malformations (e.g. Chiari malformation), or develop after trauma, during an inflammatory process, or when tumors are present.

Pathophysiology? Common breeds?

The pathophysiology is not well understood, but it seems that syringomyelia tends to develop when the subarachnoidal space is obstructed. When the subarachnoidal space is obstructed, there is a significant decrease in pressure transmission to distal CSF spaces. Differences in the pressures between the subarachnoidal space and the blood vessels located within the spinal cord parenchyma may cause a mechanical distension of the spinal cord and ensuing cavitation of the cord. This arises from extracellular fluid originating from the high-pressure system in the microcirculation the spinal cord from the low-pressure system in the subarachnoidal space. The repeated mechanical distension of the spinal cord results in dilation of the central canal and accumulation of extracellular fluid, which eventually coalesce in cavities. This condition is frequently present in dogs with caudal occipital malformation, notably in Cavalier King Charles Spaniels as well as other breeds.

Neurological signs?

Back pain, abnormal sensation that induces frequent scratching, abnormal sensation to touch, and possible dysethesias. Some dogs may develop scoliosis, paresis, ataxia, and muscle atrophy.

Diagnosis?

MRI imaging findings consist of an enlarged cord with a central or slightly eccentric fluid-filled cavity that parallels CSF in signal intensity. A sharp interface between the normal cord and the syrinx is typical. Increased signal intensity around the syrinx with T2-weighted images may be seen and represents probable cord gliosis, edema, or myelomalacia. Benign syrinx do not enhance following contrast.

Treatment? Prognosis?

Treatment may not be indicated when a small and asymptomatic syrinx is present. Medical or surgical management may be indicated in more severe cases. Analgesic drugs (e.g., pethidin, methadone), drugs that reduce CSF production (e.g., omperazole carbonic anhydrase inhibitors, furosemide), NSAIDs, or glucocorticoids may be considered. In more severe cases, the anticonvulsant gabapentin may be given. Surgical management is considered when medications are ineffective. Decompression of the foramen magnum, direct draining of the syrinx, or shunting of the syrinx to the subarachnoidal space are surgical techniques that may be elected. Success of surgery varies greatly. The prognosis for keeping an adequate quality of life seems to be good in mild cases and guarded in more severe cases.

Questions?

Neurology Expert:

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The Veterinary Specialty Center of Tucson has a board-certified surgeon neurologist available for questions and consultations on neurological conditions during the weekdays. He is also on call to provide consultations to VSCT emergency doctors and to perform emergency neurological surgery for patients. Board-certified neurologists have four additional years of training and are certified by the American College of Veterinary Internal Medicine to assure competency in advanced veterinary neurology and neurosurgery.