Poster presentations

Limited dorsal myeloschisis in three cats: a distinctive form of neural tube defect

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OBJECTIVES

To describe the clinical presentation, imaging findings and histopathology of three cats with limited dorsal myeloschisis.

METHODS

The clinical history, neurological examination and MRI sequences were reviewed in three cases presented to a single referral hospital. The surgery report and histopathology were described in two cases.

RESULTS

All three cats were young (10-week-old, 5-month-old, 4-year-old) presenting with varying degrees of progressive paraparesis. All had a visible midline skin defect overlying the spinal column that was either sunken or saccular containing cerebrospinal fluid. MRI sequences demonstrated tissue extending from the dura through an overlying bifid spinous process and attached to the dermis, with associated spinal cord tethering, atrophy and syringomyelia. Lesions were located at L2–L3, T8–T9 and L3–L4. Histopathology described a fibroneural stalk with a gliopendymal lining, surrounded by glial nests and nerve fibres. The youngest and most severely affected was euthanised whilst the other two underwent surgery. Both regained independent ambulation with persistent paraparesis, however one required on-going management of incontinence with manual bladder expression and medication.

STATEMENT (CONCLUSIONS)

Limited dorsal myeloschisis is a primary neurulation defect that results in neurological and bladder dysfunction and characterised by a fibroneural stalk between the inner part of the skin and the spinal cord. Distinct MRI features, such as a visible intrathecal tract, dorsally tethered cord and syringomyelia, help distinguish this from the clinically similar dermoid sinus. The presence of progressive neurological signs, with a palpable midline defect overlying the affected spinal cord segment, may raise suspicion for this clinical entity in veterinary patients.

Investigation into possible differences in spinal tapering between Cavalier King Charles spaniels with Chiari-like malformation and those with secondary syringomyelia

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OBJECTIVES

Chiari-like malformation (CM) is ubiquitous in Cavalier King Charles spaniels (CKCS) however only some develop secondary syringomyelia (SM). SM is considered a consequence of disrupted cerebrospinal fluid (CSF) flow predisposing by brachycephaly and craniocervical junction changes. However, SM development may be influenced by spinal canal conformation. Humans with the analogous Chiari malformation type-1 (CM1) and SM have more tapering of the lower cervical spinal canal than humans with CM1 alone. We sought to determine whether there were physiological differences in the spinal tapering between CKCS with CM and CM/SM.

METHODS

A retrospective review of 102 T2W sagittal cervical MRI images from CKCS grouped by CM no pain ($n = 20$), CM with pain ($n = 18$), SM maximal transverse diameter (mtd) $< 4\text{mm}$ ($n = 19$), SM-mtd $4\text{--}6\text{mm}$ ($n = 28$) and SM-mtd $> 6\text{mm}$ ($n = 17$). The ventrodorsal height of the spinal canal was measured perpendicular to the midpoint of each vertebrae between C1–T5. The measurements were plotted and spinal tapering was calculated from the trend line (R^2). A second measurement was taken at the midpoint of each intervertebral disc between C1–T5 and assessed using the same methodology. All groups were compared using Mann-Whitney U and Kruskal-Wallis tests.

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