Treating disk disease, What we have learned in 20 years.

A literature review

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Take Home

NSAIDS – better QOL score and recovery
Glucocorticoids may negatively impact success
Methylprednisolone is equivocal to PEG or saline and provided no benefit
Methylprednisolone reduces regional blood flow, and decreases PMN's
Immediacy of surgery does not influence recovery
Surgery has improved recovery compared to medical management
Duration of cage confinement dose not impact recovery
"Deep pain negative" prognosis is best determined by MRI and may be as good as 100%
Acupuncture can shorten time to recovery, post hemilaminectomy
Physical therapy improves the rate of recovery.

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Proportion recovery and times to ambulation for non-ambulatory dogs with thoracolumbar disc extrusion treated with hemilaminectomy or conservative treatment (Veterinary Journal 2017)

- Improved rate and time to recovery in surgically managed dogs
- With surgery: Gr3 and 4 = 93%, Gr 5 = 61%
- Conservative: Gr3=79%, 4=62%, Gr5 = 10%

Evaluation of the Success of Medical Management for Presumptive Cervical Intervertebral Disk Herniation in Dogs

(Veterinary Surgery 2007)

- Success 48.9%, 33% recurrence
- NSAID's associated with success and QOL
- Duration of cage rest not associated with QOL or success
- Glucocorticoids not associated with QOL or success

Evaluation of the Success of Medical Management for Presumptive Thoracolumbar Intervertebral Disk Herniation in Dogs

(Veterinary Surgery 2007)

- Success 54.7, 30.9 recurrence
- Glucocorticoids negatively associated with success
- Duration of cage rest not associated with QOL or success
- NSAIDS associated with success and QOL

Methylprednisolone sodium succinate reduces spinal cord swelling but does note affect recovery of dogs with surgically treated thoracolumbar intervertebral disk herniation (JJVR 2016)

- 50 dogs surgically treated for Type I disk
- MPSS reduced spinal cord swelling
- No affect on rate or length of recovery

Evaluation of the function of polymorphonuclear neutrophilic leukocytes in healthy dogs given a high dose of methylprednisolone sodium succinate (AJVR 2010)

- Decrease expression of CD11 and 18
- Decreased phagocytic ability
- Decreased oxidative busts
- Return to normal 7-14 days

A Placebo-Controlled, Prospective, Randomized Clinical Trial of Polethylene Glycol and Methylprednisolone Sodium Succinate in Dogs with Intervertebral Disk Herniation (JVIM 2016)

- All dogs DPP negative
- Goal to evaluate treatments with placebo-control
- 47.6% recovered to ambulation
- No benefit noted with either MPSS nor PEG

Sustained Spinal Cord Compression: Part II: Effect of Methylprednisolone on regional Blood Flow and Recovery of Somatosensory Evoked Potentials (JBJS 2010)

- MPSS did not provide a large or significant lasting benefit with regard to preservation or restoration

- MPSS reduced regional blood flow which persists after decompression

Prognostic values of magnetic resonance imaging in dogs with paraplegia caused by thoracolumbar intervertebral disk extrusion (JAVMA 2005)

- MRI can predict outcome in paraplegia
- DPP negative with normal spinal cord signal intensity = 100% recovery
- DPP negative with increased spinal cord signal > 3 vertebral body lengths = 10%
- Rapid onset of signs and DPP negative = 40% recovery

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Factors associated with recovery from paraplegia in dogs with loss of pain perception in the pelvic limbs following intervertebral disk herniation (JAVMA 2016)

- 58% returned to ambulation (3 months)
- Immediacy of surgical treatment had no association with outcome
- Treatment with corticosteroids had no effect on prognosis
- Degree of compression also did not impact outcome

Influence of in-house rehabilitation on postoperative outcome of dogs with intervertebral disk herniation (Veterinary Surgery 2017)

- Early rehabilitation results in return to full function
- Rehabilitation resulted in a quicker return of function
- Complication rates were higher in the non-rehabilitation group

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Evaluation of electroacupuncture treatment for thoracolumbar intervertebral disk disease in dogs (JAVMA 2007)

- EA when combined with traditional western care resulted in a shorter recovery of pain and ambulation than western treatment alone

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The future

- Target the disk NP vs AF
- Try to regenerate the disk
- Percutaneous laser ablation of the disks
- Controlled exercise vs confinement

Questions

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