

## Cistos Espinhais

*Fundamentos para o domínio!*

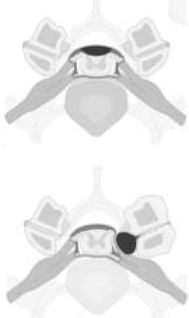
**Ronaldo Casimiro da Costa, DMV, MSc, PhD**  
**Diplomado, American College of Veterinary Internal Medicine - ACVIM – Neurologia**  
**The Ohio State University**



**THE OHIO STATE UNIVERSITY**  
COLLEGE OF VETERINARY MEDICINE

## Plano

- \*Objetivo
- \*Dominio extremo!
- \*O que são?
- \*Quais tipos?
- \*Quais causas?
- \*Como diagnosticar?
- \*Como tratar?

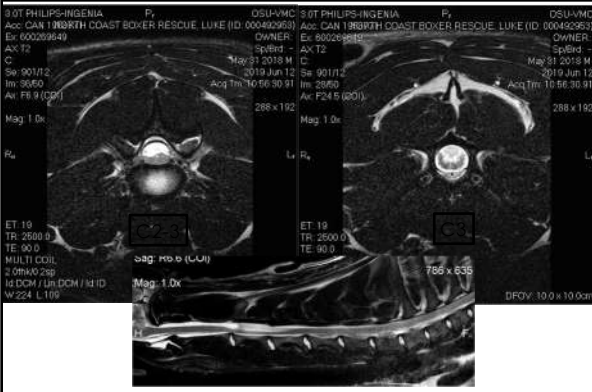


da Costa & Cook, 2016

## Luke – Boxer, 1 ano, MC


Dificuldade para caminhar

**Luke**  
**Boxer**  
**1 yr**  
**MC**  
**#492953**



## Divertículo aracnóide espinal - DAS

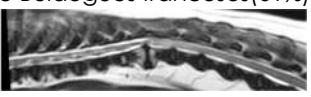
- \* Definição – Dilatações focais espaço subaracnóide com LCS = mielopatia compressiva
- \* Cistos aracnóides?
  - \* Cistos verdadeiros – cavidade fechada com camada epitelial e "conteúdo"
  - \* Os divertículos não tem camada epitelial
- \* Outros nomes: Cistos intra-aracnóides, cistos subaracnóides, cistos meníngeos, cistos leptomeníngeos



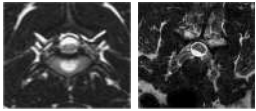
## Etiologias - DAS

**Cervical spinal intradural arachnoid cysts in related, young pugs**  
Journal of Small Animal Practice (2014)  
 C. Rombos\*, J. H. T. Nyman, P. Williams and K. Helene Jodalene\*

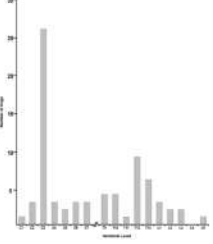
- \*Congênita
- \*Genética – Pugs
- \*Adquirida –122 casos – doença concomitante 21%
  - \* DDIV, trauma, meningomielite
  - \* Ppte Bulldogs franceses(61%), Pugs (33%)



### Localização DAS



- \*88% aspecto dorsal
  - \* 8% ventral
  - \* 4% circunferencial
- \*Maioria cervical
- \*Grande porte
  - \* Cervical
- \*Pequeno porte
  - \* TL (T9-T13)



### Sinais - DAS


- \*Tetraparesia / paraparesis
  - \* Andar espástico (pseudo-hipermetria)
- \*Ataxia propioceptiva
- \*Dor espinhal (19%)
  - \* Geralmente não causam dor
- \*Incontinência fecal ou urinária (8%)
  - \* Pugs -50% incontinência fecal

### Diagnóstico – DAS - 1

- \*Resenha/Identificação
  - \*Rottweilers, Pugs, Frenchies
- \*Idade
  - \* Mediana- 2,5 anos (4-144 meses)
  - \* Pugs – mais velhos – 8,5 anos
- \*Sexo
  - \* Machos – 2:1 to 4:1

### Diagnóstico – DAS - 2

- \*Lesão em formato de gota no espaço SA – imagens sagitais
- \*Mielografia – Yes!
- \*Tomo simples – Noo!
- \*Mielo-tomo – Yes!
- \*Ressonância
  - \* Melhor - comorbidades
  - \* Ponderações T2 - mielo
  - \*LCS -geralmente normal

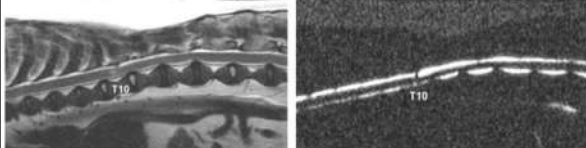


USEFULNESS OF A HALF-FOURIER ACQUISITION SINGLE-SHOT TURBO SPIN-ECHO PULSE SEQUENCE IN IDENTIFYING ARACHNOID DIVERTICULA IN DOGS

2012 *Veterinary Radiology & Ultrasound*.

GABRIELA S. SEILER, IAN D. ROBERTSON, WILFRIED MAL, WILLIAM R. WIDMER, JANTRA SURAN, SARAH NEMANIC, CHRISTOPHER R. LAMB, JOHANN LANG, JEFFREY L. JOHNSON, DONALD E. THRALL

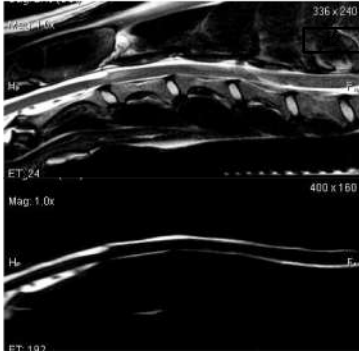
shot turbo spin-echo (HASTE) sequences. The MR images were anonymized, and no signalment, history, or clinical information was provided. Without the HASTE sequences, 25% of arachnoid diverticula were identified. Adding the HASTE sequence increased the diagnosis of arachnoid diverticulum to 52.8%. The resulting difference, after adding the HASTE sequence, of 27.8% was statistically significant ( $P = 0.002$ ).



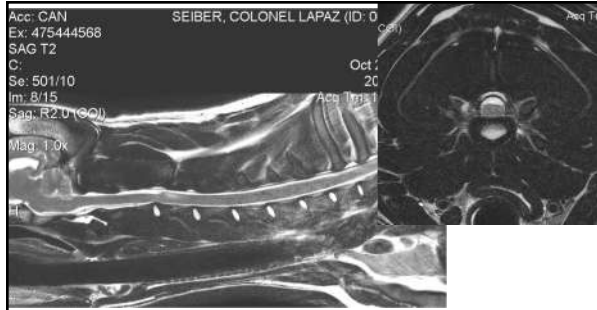
6 dogs with SAD, 24 normal dogs – mixed & given to 6 Radiologists  
6 Radiologists saw compression, only 1 saw cyst, w/ Haste 3 saw it

**Barnaby**  
**Mix Breed**  
**7 YR**  
**MC**  
**#413537**

Barnaby, Rott mix, 7 anos, MC



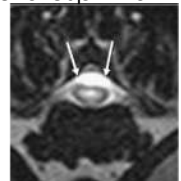
**Colonel Lapaz  
Pit Bull  
8 month  
Male  
#447214**



**Fecal incontinence and spinal cord abnormalities in seven dogs**

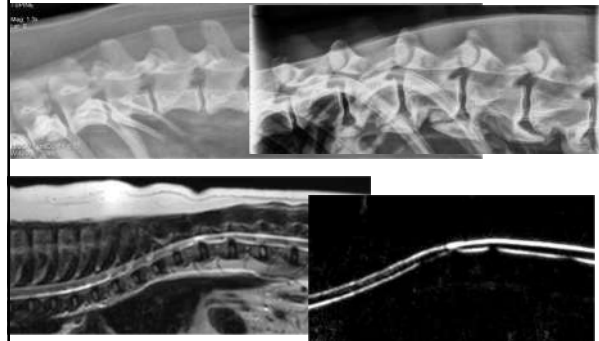
JAVMA, Vol 227, No. 12, December 15, 2005  
Annie V. Chen, DVM; Rodney S. Bagley, DVM, DACVIM; Chadwick L. West, DVM, DACVIM;  
Patrick R. Gavin, DVM, DACVR, PhD; Russell L. Tucker, DVM, DACVR

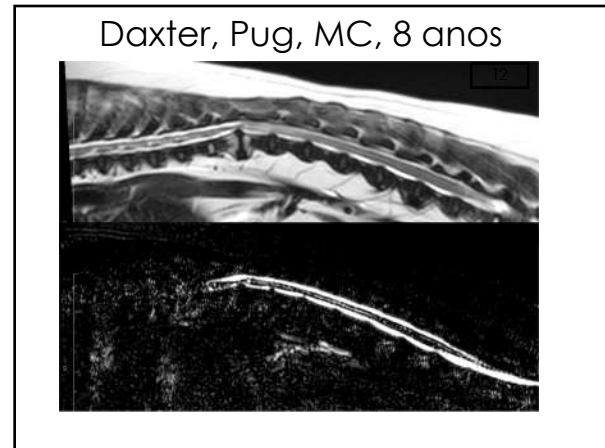
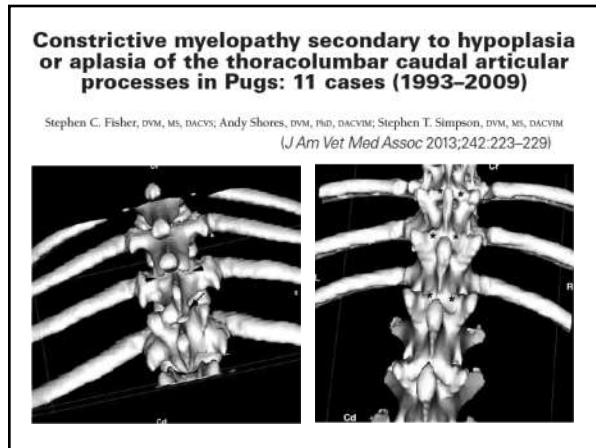
- \*Lesões parte dorsal da medulla espinhal
- \*Lesões ppte "císticas"



**Toby  
Pug  
8 YR  
Male  
#426415**

Pug, 8 anos, MC





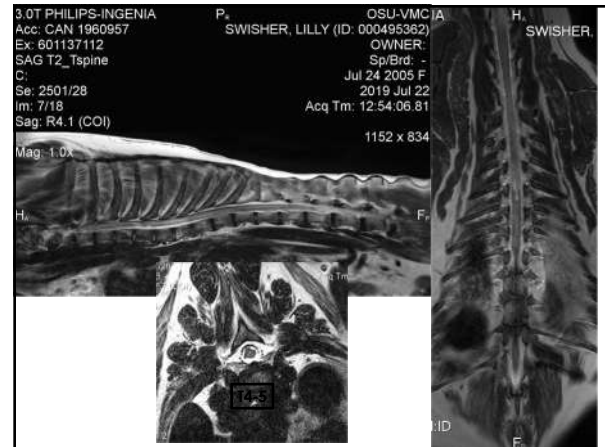
STANDARD ARTICLE | Journal of Veterinary Internal Medicine | ACVIM  
Continuing Education | American College of Veterinary Internal Medicine

**Short- and long-term outcome and magnetic resonance imaging findings after surgical treatment of thoracolumbar spinal arachnoid diverticula in 25 Pugs** | *J Vet Intern Med.* 2019;1–8.

Neringa Alisaukaite<sup>1</sup> | Sigitas Cizinauskas<sup>2</sup> | Janis Jeserevics<sup>2</sup> |  
Mindaugas Rakauskas<sup>2</sup> | Giunio Bruto Cherubini<sup>3</sup> | Marjukka Anttila<sup>4</sup> | Frank Steffen<sup>1</sup>

DDIV concomitante em 14 de 24 cães – 58%  
Maioria parecia ter aplasia processos articulares

Results: Mean age at presentation was 7.32 (range 2–11) years, 80% were males.  
Short-term outcome was available in 25 dogs, and improvement was confirmed in 80%



**Tratamento**

- \*Tratamento médico
  - \* Prednisolona – 0.5 mg/kg q12h
  - \* Sucesso razoável em cães com sinais leves a moderados
- \*Evolução natural da doença ainda desconhecido
  - \*Alguns progridem
  - \*Outros permanecem estáticos...

**Cirurgia**

- \*Fenestração divertículo com durotomia ou durectomia
- \*Marsupialização – melhor?

STANDARD ARTICLE Journal of Veterinary Internal Medicine **ACVIM**


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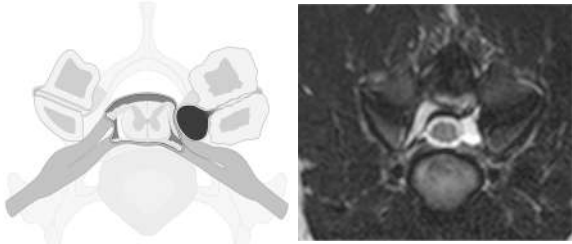
Short-term outcome was available in 25 dogs, and improvement was confirmed in 80% of dogs. Long-term outcome was available in 21 dogs, and deterioration was confirmed in 86% of cases, with late-onset recurrence of clinical signs after initial postsurgical improvement affecting 85% of Pugs. A moderate correlation ( $r = 0.50$ ) was found between duration of clinical signs and outcome. In 8 dogs with deteriorating clinical signs, follow-up MRI revealed regrowth of the SAD in 2 cases, new SAD formation in 2 cases, and intramedullary T2W hyperintensity/syringomyelia in 6 cases.

## Prognóstico

- \* Vareia...
- \* ME cervical - 66% sucesso longo prazo
- \* Pugs – 15% sucesso longo prazo...
- \* Alto indice de recidiva
- \* Nenhum trabalho específico tratamento médico
- \* Melhor probabilidade sucesso
  - \* Sinais <4 meses and <3 anos idade




## Outro cisto – esse verdadeiro!! Cisto Sinovial Extradural!



## Cisto Sinovial Extradural(CSE)

- \* Associados com processos articulares
  - \* Lesão peri-articular – location
- \* Degeneração articular e talvez micro-movimentos excessivos
- \* Protrusão da membrana synovial através de defeitos na cápsula articular



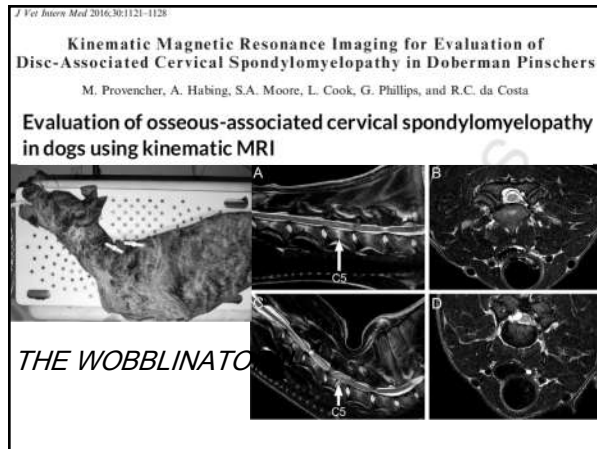
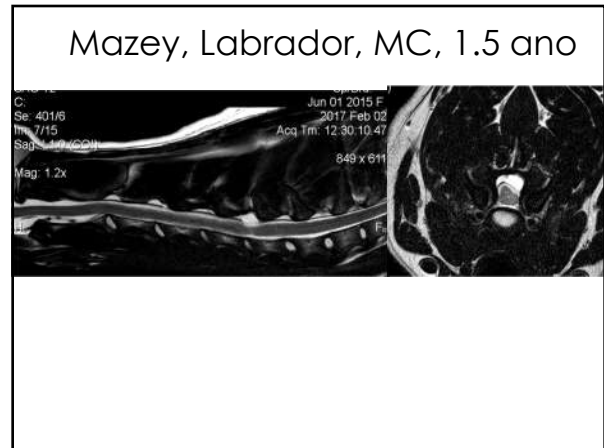
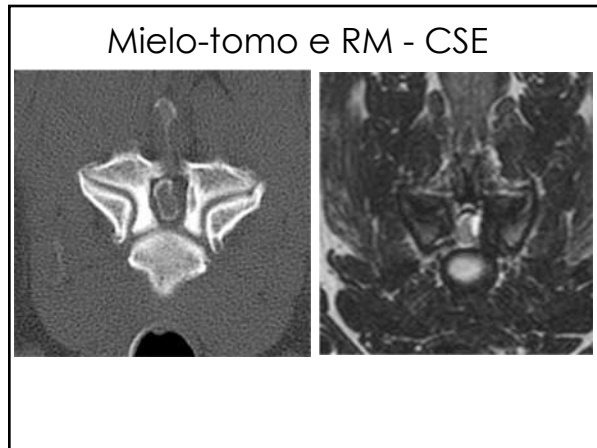
## Diagnóstico - CSE

- \* Geralmente associado com:
  - \* Espondilomielopatia (Wobbler) – ósseo-associada - 20%
  - \* Estenose degenerativa lombossacral
- \* Sinais de mielopatia e radiculopatia



## Diagnóstico - CSE

- \* Consegue ver com:
  - \* Radiografias?
  - \* Mielografia?
  - \* Tomografia simples?
  - \* Mielo-tomo?
  - \* Ressonância?



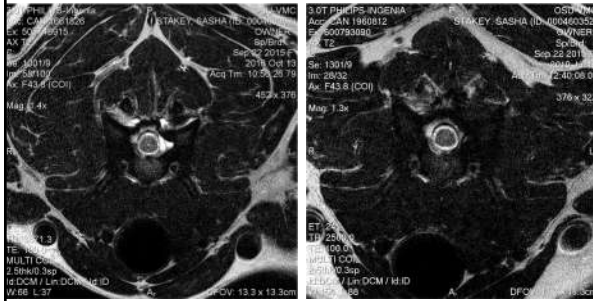
**Tratamento - CSE**

- \* Geralmente trata o cisto junto com a doença primária
- \* Médico
  - \* Prednisolona e restrição atividade
- \* Cirúrgico
  - \* Laminectomia dorsal
  - \* Drenagem do cisto
- \* Muitos cistos são assintomáticos
  - \* Cães e humanos

**Bosco**  
**German Shepherd**  
**1.5 YR**  
**MC**  
**#428475**



## Regressão espontânea CSE



*J Vet Intern Med* 2014;28:175-181

### Signalment, Clinical Presentation, and Diagnostic Findings in 122 Dogs with Spinal Arachnoid Diverticula

D.A. Mauler, S. De Decker, L. De Risio, H.A. Volk, R. Dennis, I. Gielen, E. Van der Vekens, K. Goethals, and L. Van Ham

**Extramedullary Spinal Cysts in Dogs** *Veterinary Surgery* 43 (2014) 650-662 ©

Mark L. Lowrie<sup>1</sup>, MA VetMB, MVM, Diplomate ECVN,  
Simon R. Platt<sup>2</sup>, BVMS&S, Diplomate ACVIM Neurology & ECVN, and Laurent S. Garosi<sup>1</sup>, DVM, Diplomate ECVN

### Cystic Abnormalities of the Spinal Cord and Vertebral Column

*Vet Clin Small Anim* 46 (2016) 277-293

Ronaldo C. da Costa, DMV, MSc, PhD\*, Laurie B. Cook, DVM

## Resumo

- \* Lembre de ter cistos espinhais na lista de seus diagnósticos diferenciais crônicos e progressivos
- \* Divertículo aracnóide
  - \* Rottweilers e Pugs
  - \* Incontinência fecal com sinais NMS
- \* Cistos sinoviais
  - \* Geralmente parte de outras doenças
- \* Tratamento – medico ou cirúrgico

## *O melhor tratamento é um diagnóstico correto!!*

Ronaldo Casimiro da Costa, DMV, MSc, PhD

Dipl. ACVIM - Neurology

Neurology and Neurosurgery Service

The Ohio State University

dacosta.6@osu.edu / rcdacosta@gmail.com



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