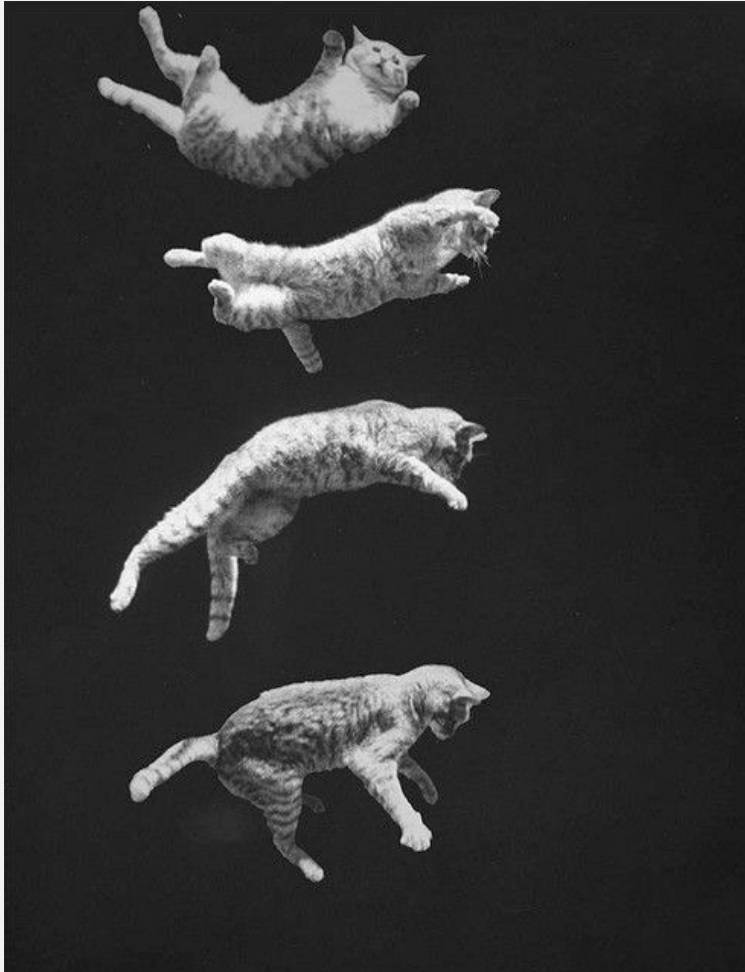




CRAZY CATS!

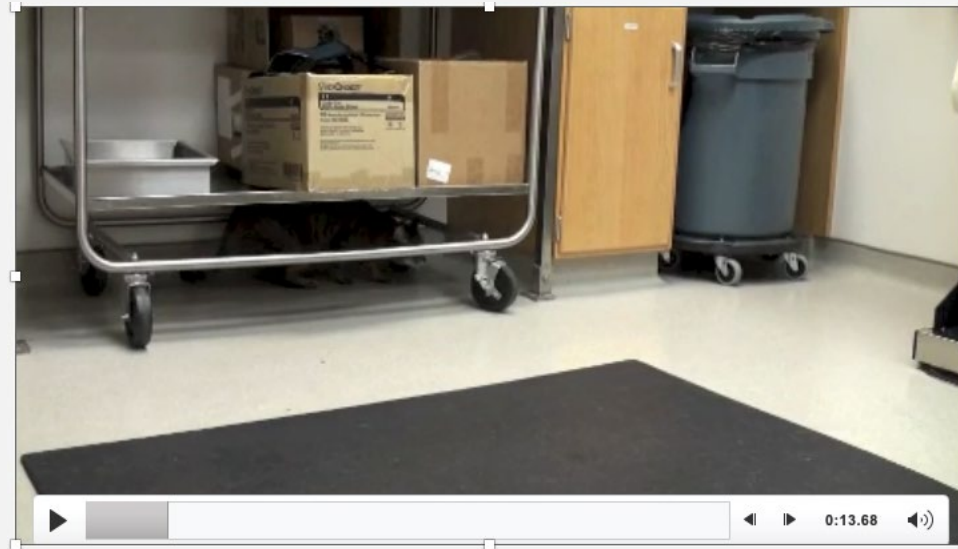
Natasha Olby VetMB, PhD MRCVS, DACVIM Neurology

CATS ARE AMAZING

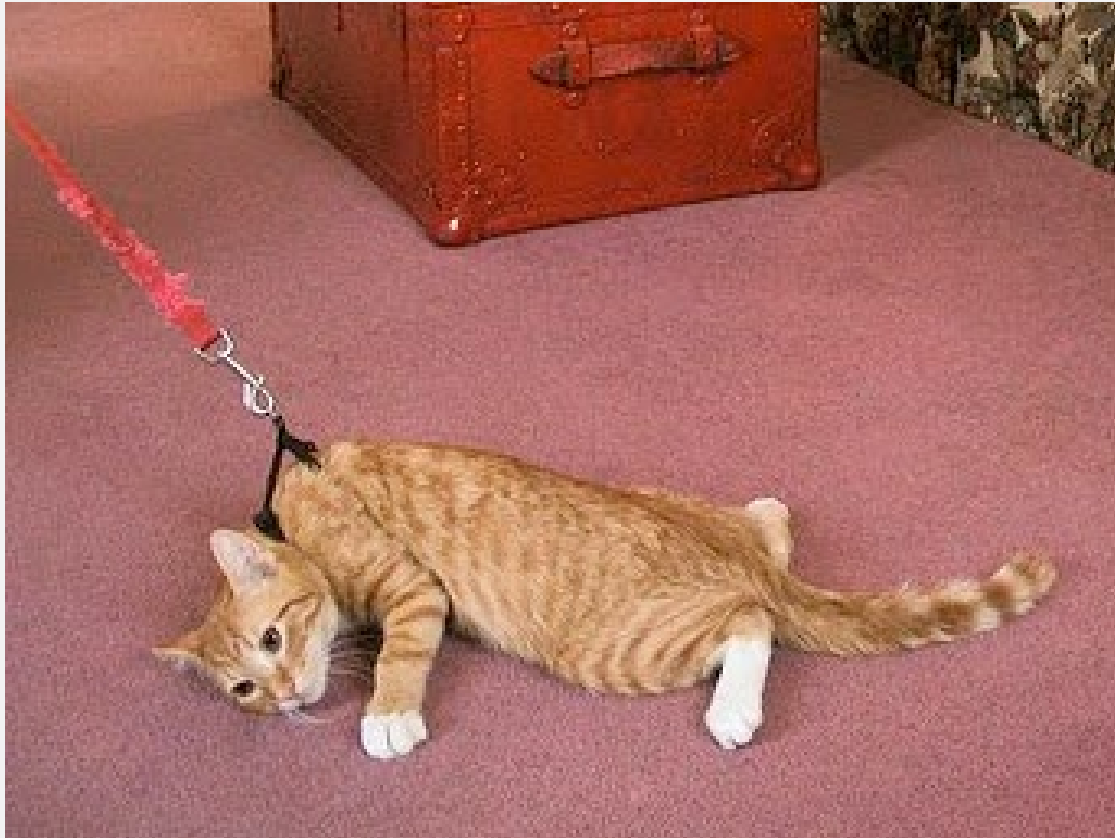


- Specific challenges
- Specific presenting problems

THE NEURO EXAM



KEY DIFFERENCES BETWEEN DOGS AND CATS



HOW DO YOU GET AROUND IT?

- Be FIRST
- Be FAST
- Use their crate
- Build obstacles

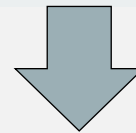


PRESENTATION I

10Y DSH FS



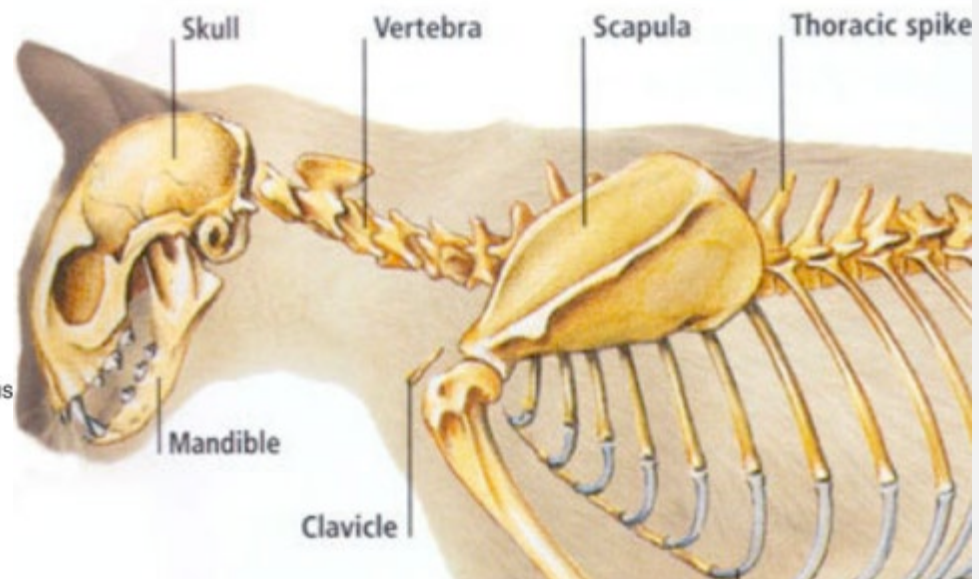
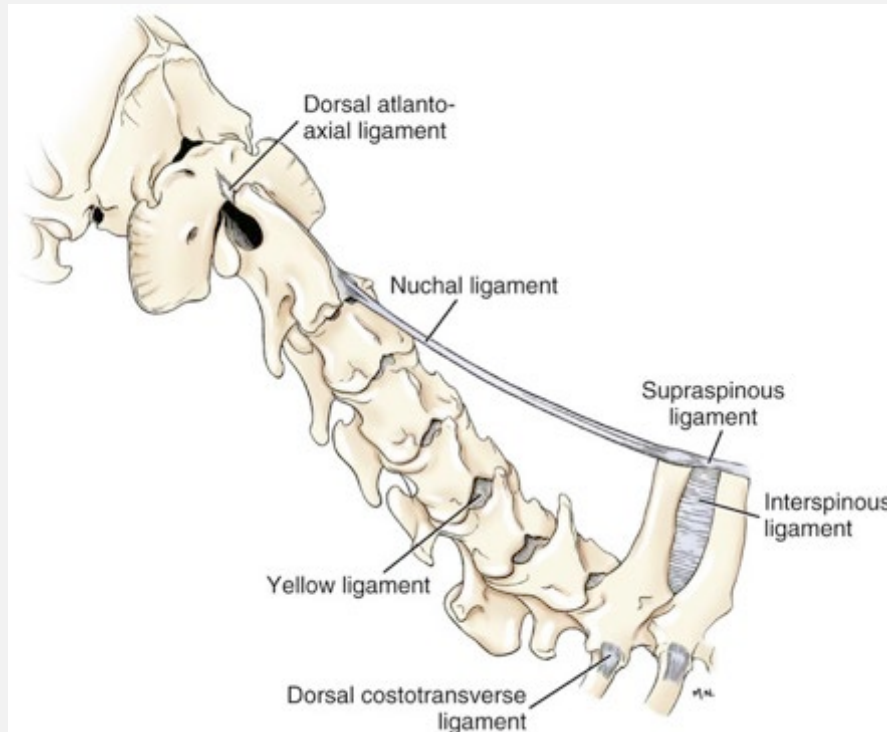
- Irritated cat
- Cervical ventroflexion
- Tetraparesis
- NO ataxia
- No postural reaction deficits



Myopathy
Neuromuscular junction

WHY THIS SIGN?

- NO NUCHAL LIGAMENT



DIFFERENTIAL LIST FOR CERVICAL VENTROFLEXION

Any muscle disease

Neuromuscular junction

- Hypokalemic myopathy
- Myositis
- Muscle weakness due to hyperthyroidism
- Myasthenia gravis

OTHER CONSIDERATIONS

- Thiamine deficiency
- Cervical spinal cord disease

Case Series

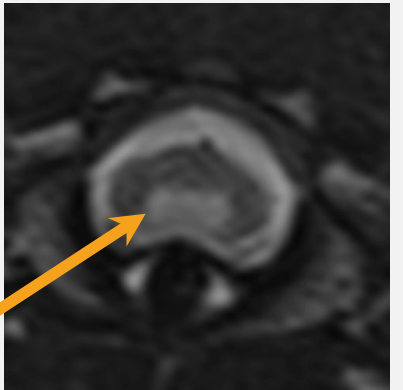
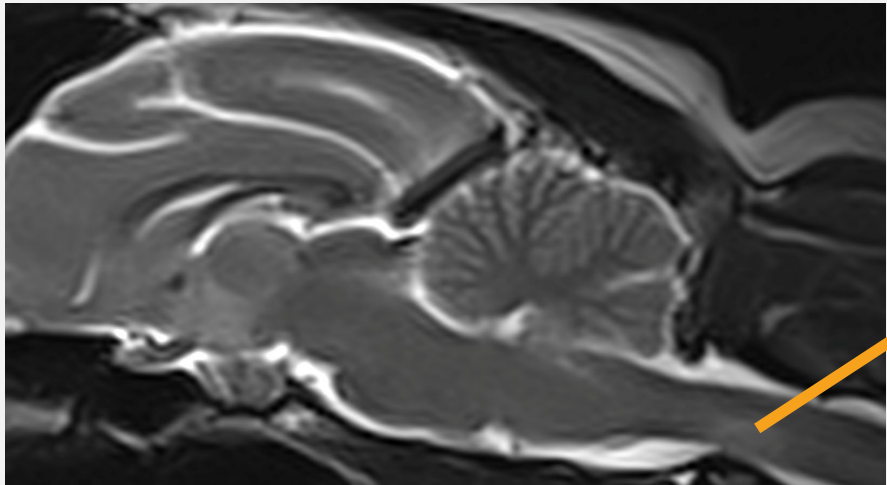


Feline ischaemic myelopathy with a predilection for the cranial cervical spinal cord in older cats

Journal of Feline Medicine and Surgery
2014, Vol. 16(12) 1001–1006
© ISFM and AAFP 2014
Reprints and permissions:
sagepub.co.uk/journalsPermissions.nav
DOI: 10.1177/1098612X14522050
jfms.com



**Katherine M Simpson¹, Luisa De Risio², Anita Theobald²,
Laurent Garosi¹ and Mark Lowrie¹**



WHAT IS THE MOST IMPORTANT TEST FOR YOU TO RUN WHEN YOU SEE CERVICAL VENTROFLEXION?

- CHEMISTRY PANEL
- K⁺: 2.0mmol/l
- CK: 2300IU/l
- K⁺<3mmol/l – risk of myopathy/periodic paralysis

HYPOKALEMIC MYOPATHY IN CATS



Inherited

- Burmese cats with mutation in WNK4

Acquired

- Renal disease
- Hyperthyroidism
- Dietary deficiency

Treat with potassium supplementation

TWO DAYS LATER



PRESENTATION 2: 12-YEAR-OLD FS DSH



OBSERVATIONS?

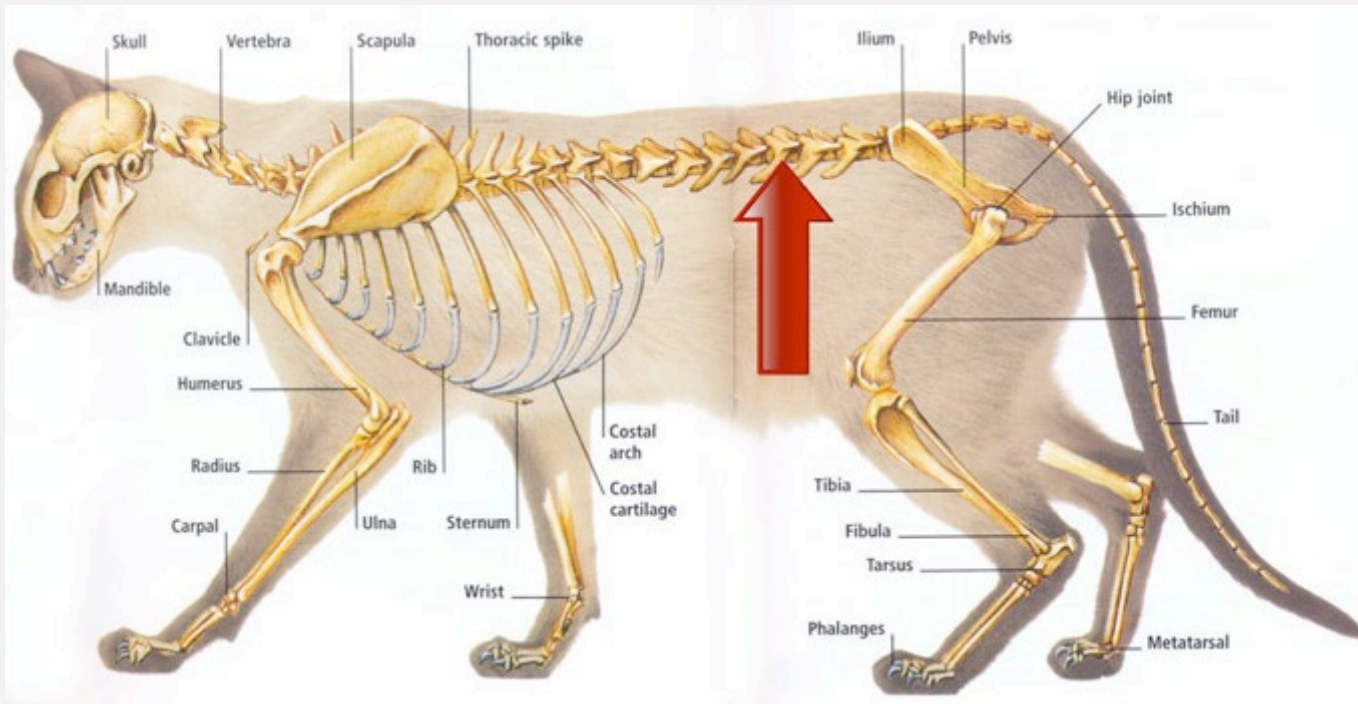
1. Behavior is appropriate
2. Plantigrade stance, worse in the right
3. Palmigrade stance
4. NO ataxia

WHAT IS THE SINGLE TEST YOU WOULD RUN IN THIS CAT?

- Blood glucose.....



THERE ARE MANY STRUCTURES THAT PLAY A ROLE IN THE DIGITIGRADE STANCE



- L6-S2 spinal cord segments
- Cauda equina
- Sciatic nerve
- Tibial nerve
- Gastrocnemius m
- Achilles tendon (gastrocnemius)

MUSCULOSKELETAL DISEASES

- Achilles tendon (gastrocnemius tendon)
- Gastrocnemius muscle

- Rupture/avulsion



NEUROPATHIES

- Tibial nerve
- Sciatic nerve

- Any neuropathy

- Generalized

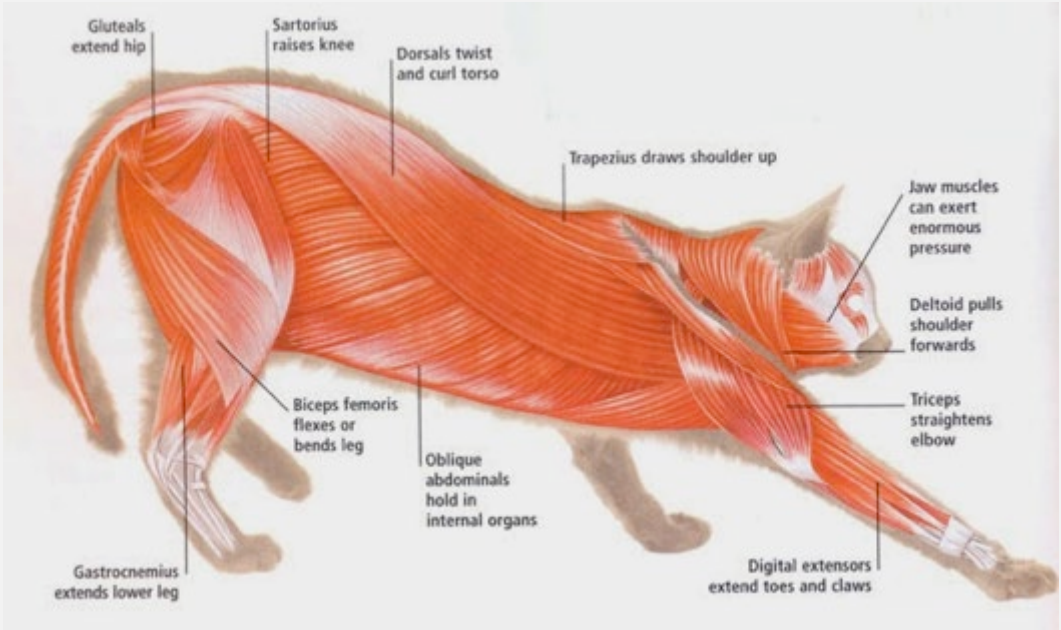
- Focal

- Diabetes

- Vascular

- Injection/surgery

INTRASCIATIC INJECTION



5 YEAR OLD HEALTHY MC CAT



NEW CHEMISTRY PANEL

Test Code	Results	Expected
GLU	108	70 - 182
BUN	15	15 - 37
CREA	1.3	.7 - 1.9
PHOS	3.9	2.4 - 5.7
CA	9.4	8.8 - 11.2
MG	2.8	1.9 - 2.5
TP	6.9	6.4 - 8.2
ALB	3.7	2.9 - 4
GLOB	3.2	2.9 - 4.8
A/G	1.16	.5 - 1.2
CHOL	182	89 - 287
BILIT	<0.2	0 - .2
ALP	20	11 - 58
ALT	496	27 - 95
AST	1775	11 - 40
GGT	<3	0 - 3
CK	207650	60 - 531

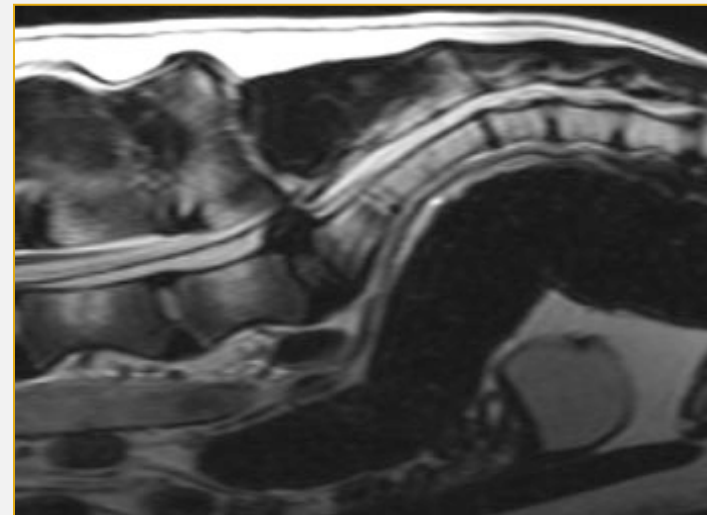
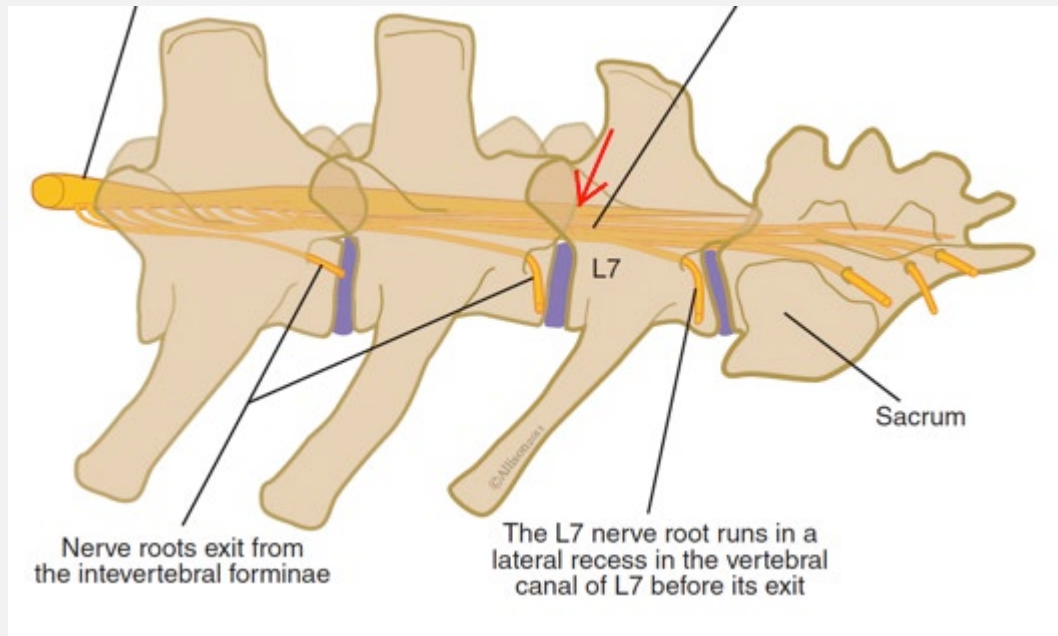
CAN YOU FEEL THIS CAT'S FEMORAL PULSES?



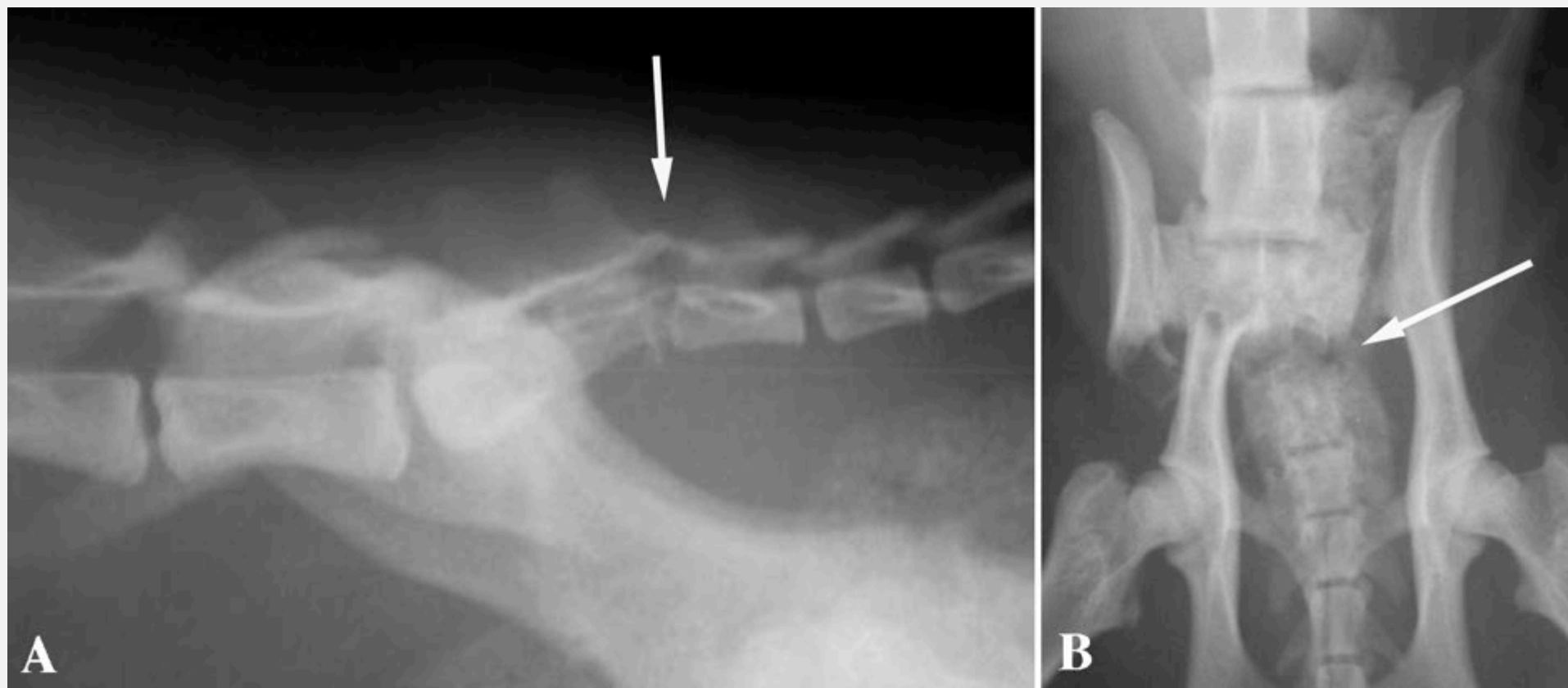
CAUDA EQUINA INVOLVEMENT

Cauda equina

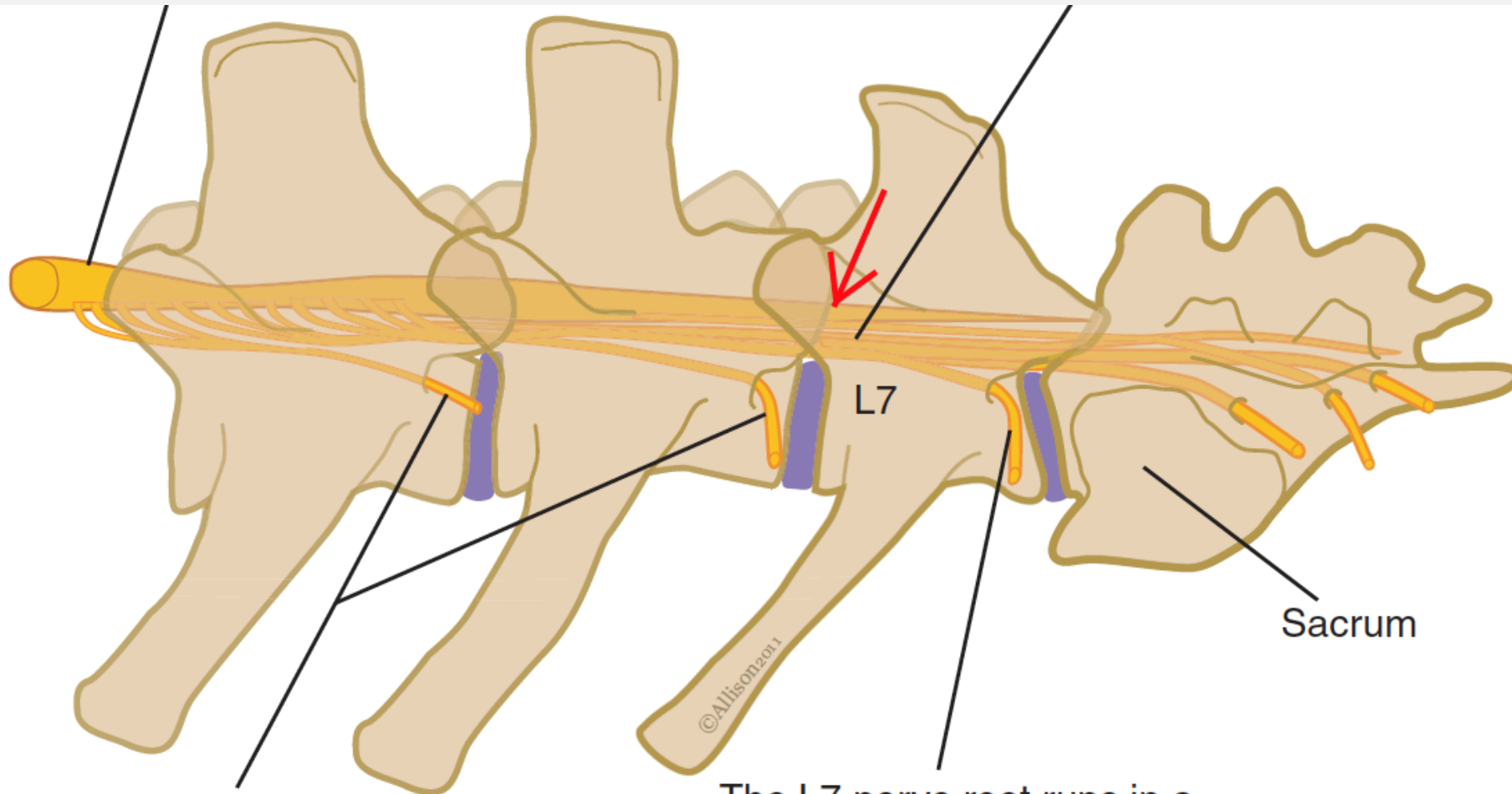
- LS disease
- Trauma



THE INFAMOUS TAIL PULL INJURY



WHAT HAPPENS WITH A TAIL PULL?



Nerve roots exit from the intervertebral foraminae

The L7 nerve root runs in a lateral recess in the vertebral canal of L7 before its exit

CLINICAL SIGNS WITH TAIL PULL

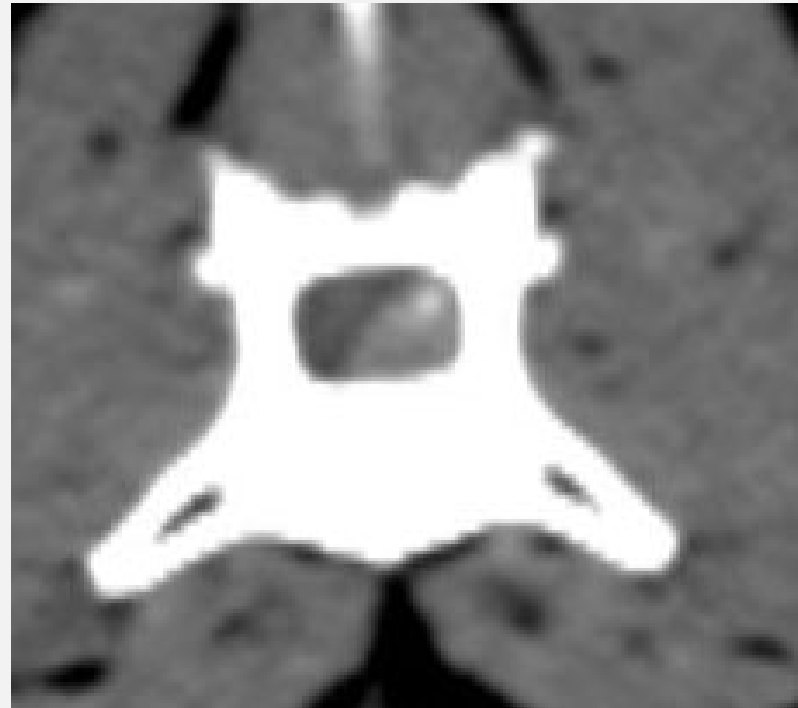
- Flaccid tail
- Inability to urinate – retention and overflow
- Fecal incontinence
- Mild sciatic weakness

- If they cannot feel the tail – amputate
- Treat by keeping bladder empty
- If they cannot feel the perineal region 1 month after injury – prognosis is grave for continence.

SPINAL CORD DISEASE

L6-S2 spinal cord segments

- Disc disease
- Neoplasia
- Trauma
- Vascular
- Abscess/discospondylitis

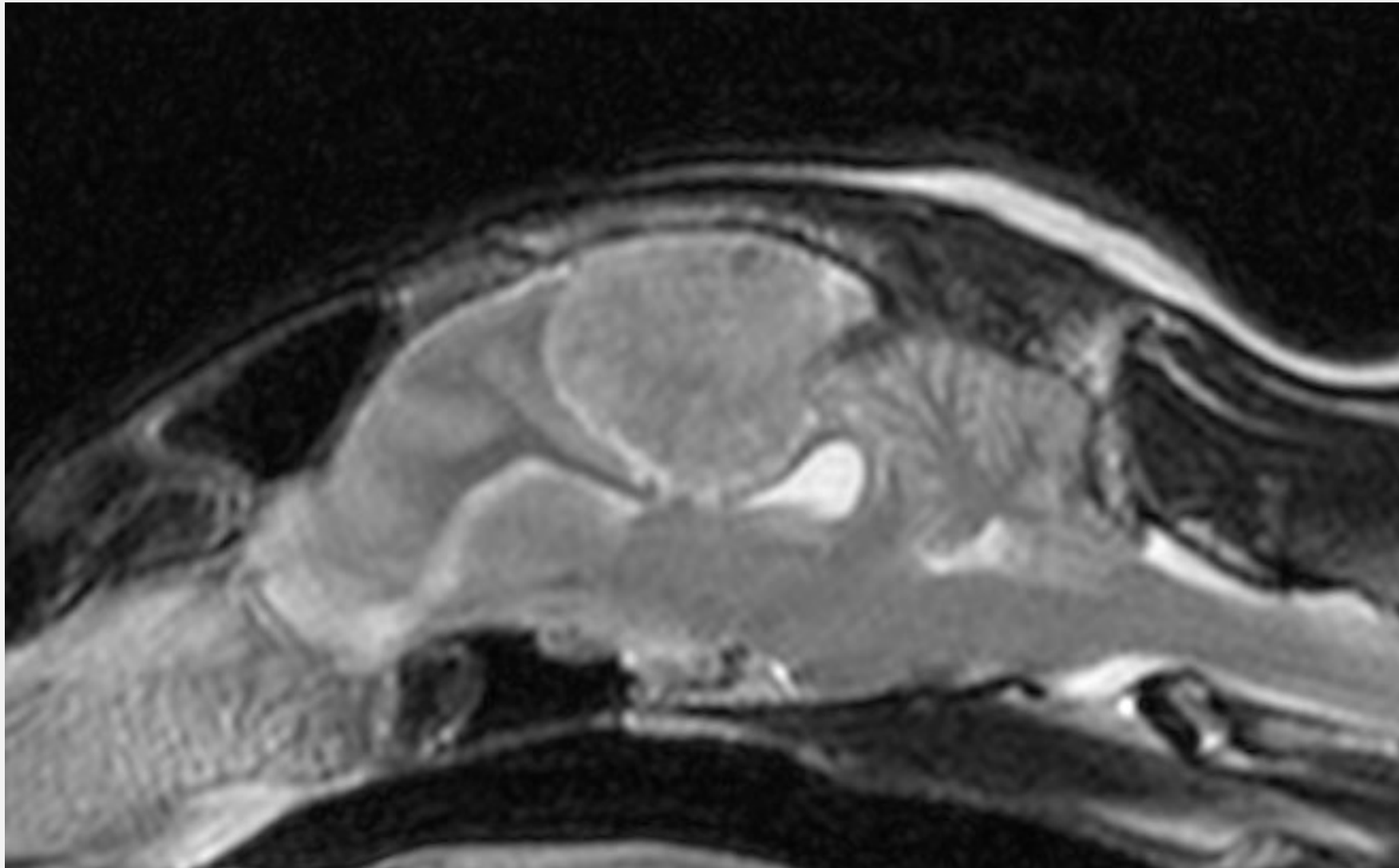


PRESENTATION 3

15-YEAR-OLD PERSIAN CAT

- History of ADR
- Poor appetite, waxes and wanes
- Odd behaviors – yowling, friendly, aggressive
- Episodic weakness
- Intermittent nystagmus
- Elevate head on neuro exam – opisthotonic
 - Blood work normal
 - BP normal
 - Chest radiographs normal

WHAT IS GOING ON?



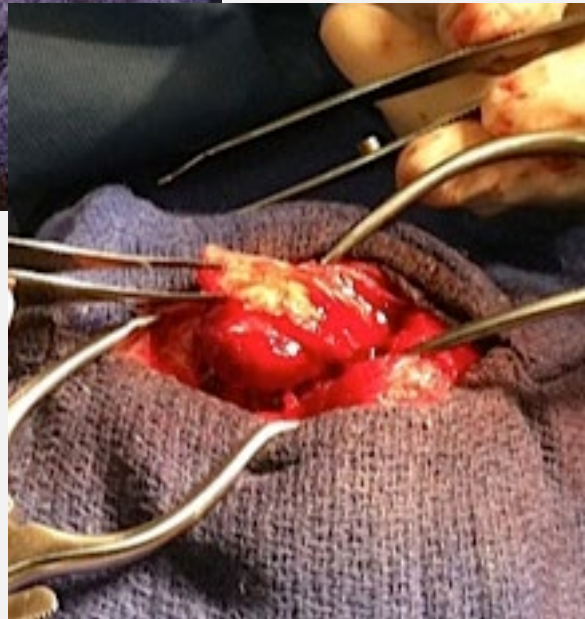
IN OTHER WORDS

- HIGH INTRACRANIAL PRESSURE

CAT MENINGIOMAS



- With surgery alone – median survival 37 ms



8M DSH, PROGRESSIVE ATAXIA



DIFFERENTIALS?

- FIP
- Toxoplasmosis
- Fungal disease
- FeLV/FIV
- Bacterial meningoencephalitis
- Round cell neoplasia
- Toxicity (bromethalin)?

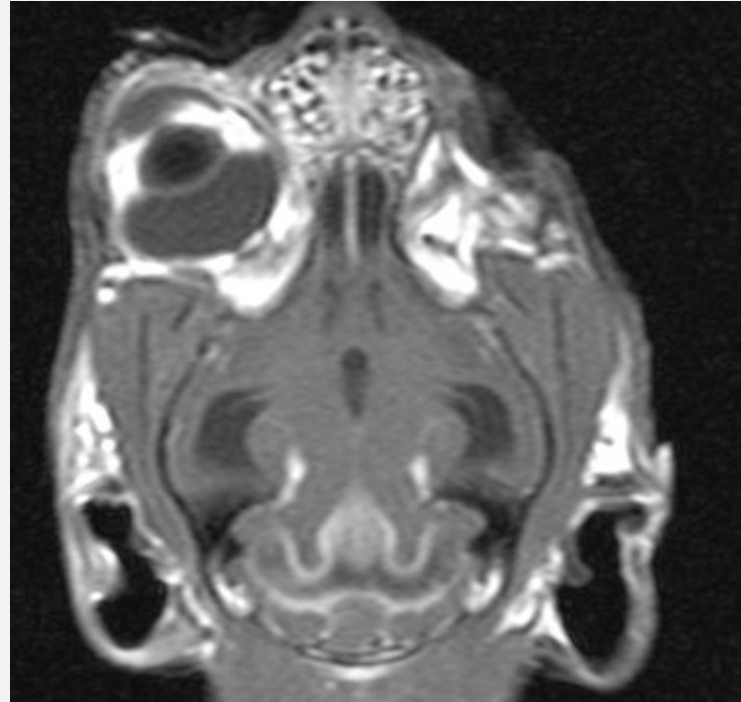
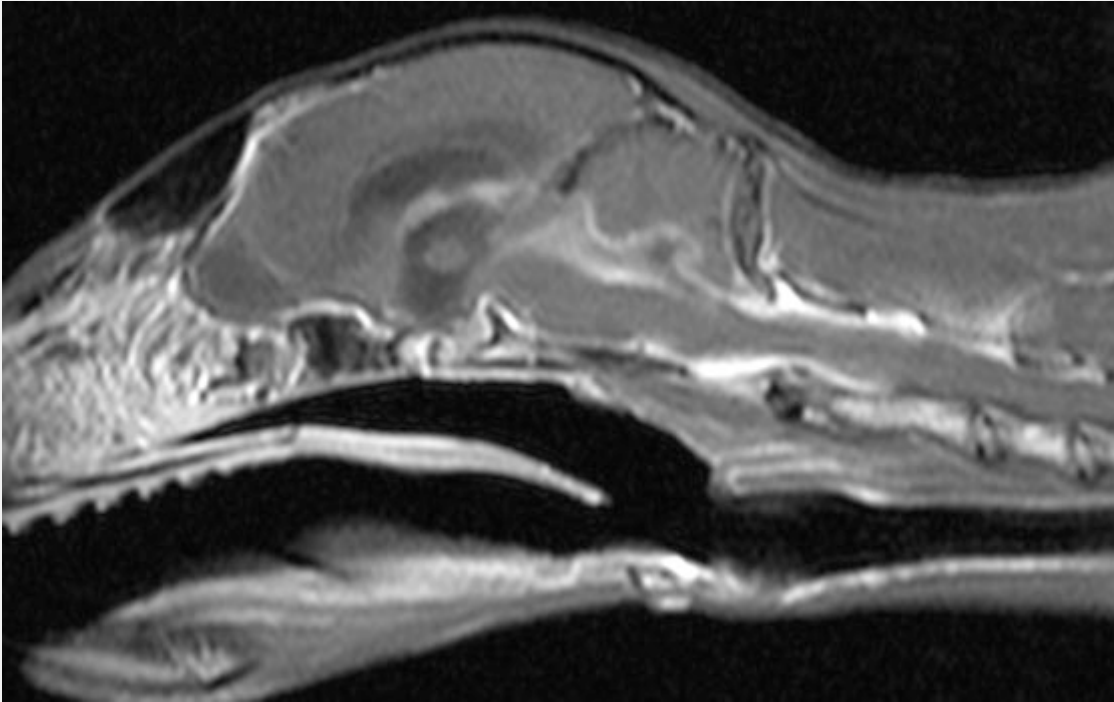


MY PERSONAL
FAVORITE OF THESE
DIFFERENTIALS

BLOOD WORK

- FeLV/FIV negative
- CBC: mild neutrophilia
- Chemistry panel: elevated globulin

IMAGING



CSF ANALYSIS

Parameter	Result	Comments
Protein	4468mg/dL	Normal < 25mg/dL
White blood cells	303/ul	20% neutrophils; 15% large mononuclear; 65% small mononuclear
Red blood cells	300/ul	

OTHER TESTING?

- Toxoplasmosis: negative
- Coronavirus CSF titer: positive
- Cryptococcus CSF antigen titer: negative

FIP TREATMENT

- This has transformed from a fatal disease with no treatment to.....



FIP TREATMENT – A DISEASE WE CAN CURE!

Received: 20 December 2019 | Accepted: 26 March 2020

DOI: 10.1111/jvim.15780

CASE REPORT

Journal of Veterinary Internal Medicine **ACVIM**
American College of Veterinary Internal Medicine
Open Access

Antiviral treatment using the adenosine nucleoside analogue GS-441524 in cats with clinically diagnosed neurological feline infectious peritonitis

Peter J. Dickinson¹ | Michael Bannasch² | Sara M. Thomasy^{1,3} | Vishal D. Murthy² | Karen M. Vernau¹ | Molly Liepnieks⁴ | Elizabeth Montgomery² | Kelly E. Knickelbein² | Brian Murphy⁴ | Niels C. Pedersen⁵



FDA Announces Position on Use of Compounded GS-441524 to Treat FIP

The number of tablets needed daily and over 84 days for FIP treatment using GS-441524

The dose rate has been adjusted to the nearest quarter to account for how the tablet splits.

© Stokes Healthcare/Bova 2024

Weight	1kg		1.5kg		2kg		2.5kg		3kg		3.5kg		4kg		4.5kg		5kg		5.5kg		6kg		6.5kg		7kg	
	Tablet (day)	84 day qty	Tablet (day)	84 day qty	Tablet (day)	84 day qty	Tablet (day)	84 day qty	Tablet (day)	84 day qty	Tablet (day)	84 day qty	Tablet (day)	84 day qty	Tablet (day)	84 day qty	Tablet (day)	84 day qty	Tablet (day)	84 day qty	Tablet (day)	84 day qty	Tablet (day)	84 day qty	Tablet (day)	84 day qty
10		21		42		42		42		63		63		84		84		84		105		105		126		126
11		21		42		42		63		63		84		84		84		105		105		126		126		147
12		21		42		42		63		63		84		84		105		105		126		126		147		147
13		42		42		63		63		84		84		105		105		126		126		147		147		168
14		42		42		63		63		84		84		105		126		126		147		147		168		168
15		42		42		63		63		84		105		105		126		126		147		168		168		189
16		42		42		63		84		84		105		126		126		147		168		168		189		189
17		42		63		63		84		105		105		126		147		147		168		189		189		210
18		42		63		63		84		105		126		126		147		168		168		189		231		231
19		42		63		84		84		105		126		147		147		168		189		210		231		252
20		42		63		84		84		105		126		147		168		168		189		210		252		252

Key

Whole tablet	
Three-quarters	
Half tablet	
Quarter tablet	

Recommended dose rates

Clinical presentation	GS-441524 PO dosage
Effusion(s) and <u>without</u> ocular or neurological signs	15 mg/kg q 24hrs or split q 12 hrs
No effusion and <u>without</u> ocular or neurological signs	15 mg/kg q 24hrs or split q 12 hrs
Ocular signs present (± effusion)	15-20 mg/kg q 24hrs or split q 12 hrs
Neurological signs present (± effusion)	10 mg/kg q 12 hrs

It is crucial to weigh cats weekly during treatment using accurate scales like cat or baby scales. Weight gain or growth in kittens may require a dose adjustment to ensure the appropriate dosage of antiviral medication for treating FIP.

SCAN ME



STOKES VETERINARY RESOURCES
Updated 18th May 2024

ANOTHER VARIATION ON THE THEME

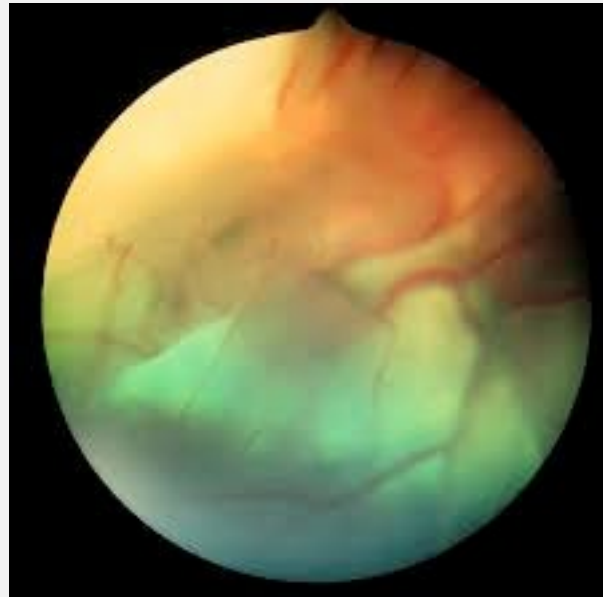
- Clarke is a 14-year-old MC DSH
- He has a history of mild chronic renal disease
- Over the last month he has been acting a little strangely – irritable, avoiding contact
- This morning he had a 3-minute generalized seizure and arrived at your clinic 5 minutes later

EXAMINATION FINDINGS

- General physical exam: small kidneys, nothing notable
- Neurological examination: absent menace bilaterally, no PLR.

- What 2 non-invasive tests should you run?

FUNDIC EXAM



BLOOD PRESSURE

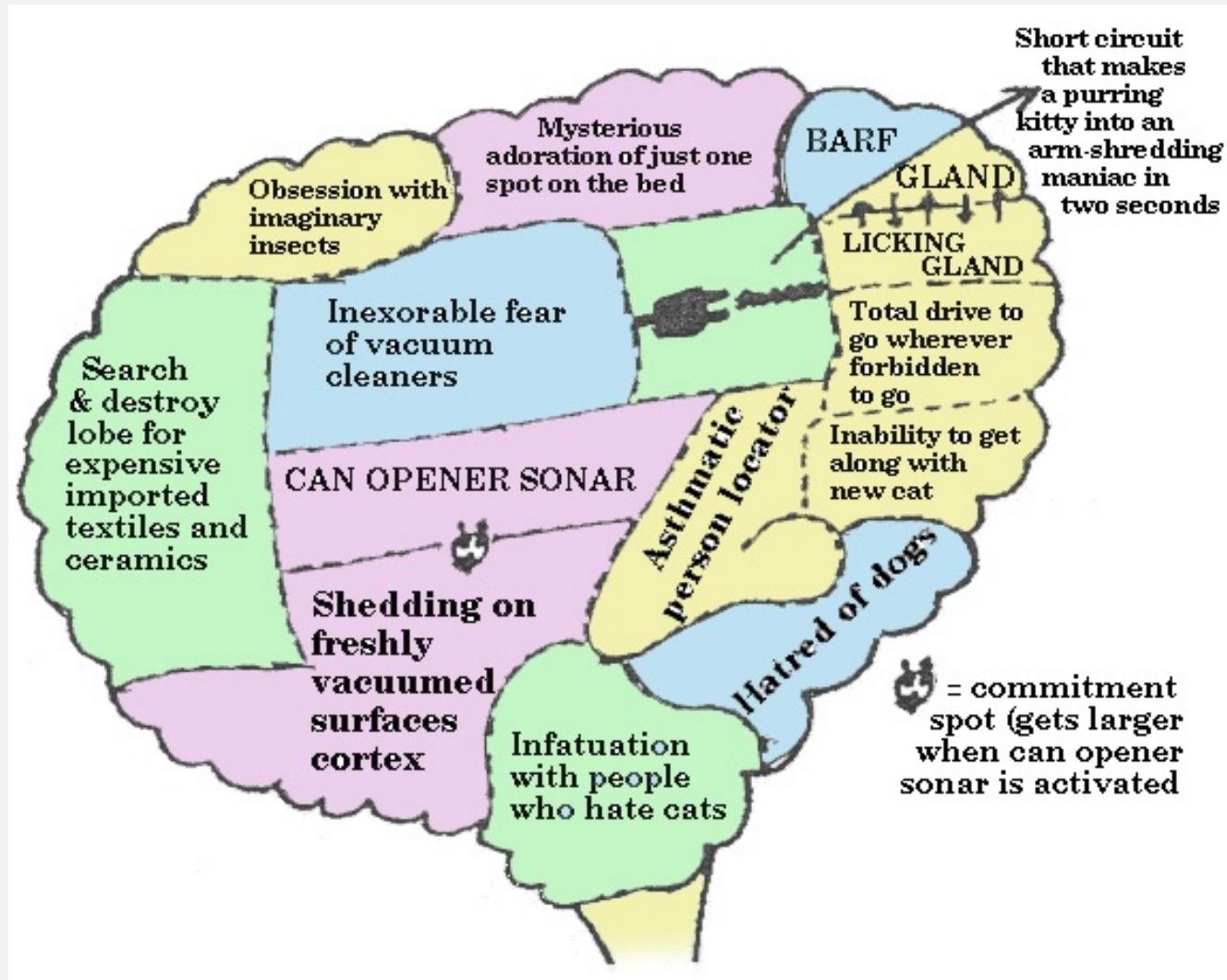
Tail measurement:
systolic of 280mmHg!



SUMMARY

- Be aware of cat specific neurologic signs and their differential lists
- A hands-off neuro exam is acceptable
- Remember cats can accommodate large intracranial masses with only vague signs until a crisis
- Meningiomas and bacterial infections are treatable
- Hypertension is treatable
- Some infectious diseases in cats are deadly (possibly to you as well).

ANY QUESTIONS?



njolby@ncsu.edu