Mock exam 2023/4

Examination committee

- The exam will be taken on the individual's own computer using the software "examsoft". Training of this system will be done via zoom at least one month in advance of the exam.
- The exam must be sat in either Bologna or Nottingham. You must inform the exam chair of your intention to sit and at which centre you intend to use.
- The examinations will be invigilated by the exam committee who have all been involved in constructing the assessment.
- An independent observer will also be present at the exam should a candidate wish to raise any issues concerning the examination.

Examination regulations

- **The whole content of the exam is confidential and should not be shared with anyone out with the exam**
- The exam is written and must be answered in English. Dictionaries are permitted
- No electronic devices are allowed (I phones, apple watches, tablets, ebook readers)
- Examsoft will block the other facilities on your computer so you cannot rely on any Apps.

Your secret ID

- You will be given a candidate identification number through examsoft.
- The candidate numbers are not disclosed to the ECVN examination committee until all papers are marked and final scores have been discussed and confirmed.
- This allows complete anonymity when marking examination scripts.

Multiple choice questions (MCQ)

- This part will last 120 minutes and consists of 75 questions.
- All areas of neurology and neuroscience may be examined in this section.
- **There is no negative marking**. From a strategic point of view, it would be unwise to leave a multiple-choice question unanswered. If you have a minute of time at the end of the session, choose the answer that is the most likely.

MCQ mock questions

MCQ test question 1

- **Which breed has been associated with Juvenile Myoclonic epilepsy and absence seizures?**

A Rhodesian Ridgeback

B Cocker Spaniel

C Boxer

D German Shepherd Dog

MCQ test question 2

What neuropathological findings are associated with water deprivation in pigs?

- A Leukoencephalomyelomalacia and spongy state
- B Polioencephalomalacia and eosinophilic cell infiltrates
- C Polioecephalomyelitis and demyelination
- D Leukoencephalomalacia and brain oedema

MCQ test question 3

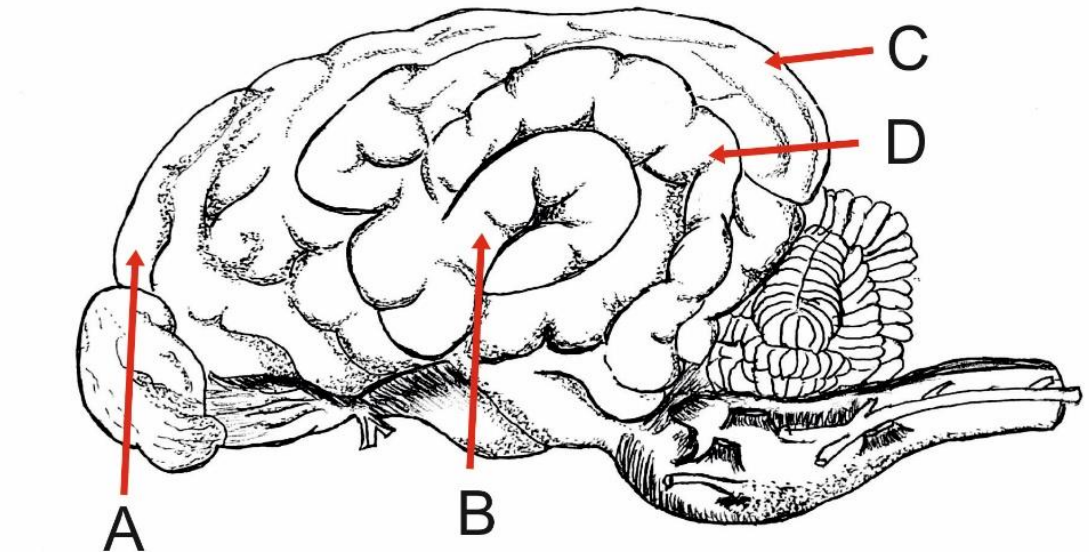
CLCN1 gene codes for the skeletal muscle-specific voltage-gated chlorine ion channel. With which canine condition is this gene mutation associated?

- A Hereditary myotonia in Australian cattle dog
- B Paroxysmal dyskinesia in Soft-coated Wheated Terriers
- C Golden Retriever muscular dystrophy
- D Paroxysmal dyskinesia in the Chinook

MCQ test question 4

- **Which of the red arrows points on the sylvian gyrus (Gyrus sylvius)**

- A ☐
- B ☐
- C ☐
- D ☐



Answers

- **Which of the following statement about epilepsy in arabic foals is <u>FALSE</u>?**

A

B

A

B

Short answer questions

- The paper is 3 hours duration consisting of seventeen, 20 mark, topic areas made up of sub-questions. Approximately 10 minutes per topic.
- All fields of basic and clinical neurology will be included. Neuro-embryology, applied and structural neuroanatomy, neurophysiology, neuro-pharmacology and different aspect of clinical neurology (including treatment and diseases) will be examined in this section.
- All species can be including as long as referring studies have been published in the journals of the reading list. However, there will be approximately a 80:20 small to large animal split.

SAQ example question

- **The laryngeal adductor reflex is a useful diagnostic test that can be performed in horses.**
- 1) What is the stimulus to the laryngeal adductor reflex? (1 mark)
- slap to the skin (0.5) caudal to the dorsal scapula on one side/over withers on one side (0.5)
- 2) Give TWO methods that can be used to evaluate the response and the normal response obtained with both (4 marks)
- Evaluation: Palpation of larynx (0.5); observation with endoscope (0.5) Normal: Movement of larynx (1); contralateral (1) vocal fold adduction (1)

3. State the afferent and efferent pathways involved in producing this reflex arc after stimulation on the LEFT side of the horse? (15 marks)

Afferent pathways:

Cutaneous branches (0.5) of segmental thoracic spinal nerves (0.5) on the left side; dorsal roots (1) to interneurons (1) in the LEFT dorsal horn (1); decussation to the RIGHT (1) fasciculus proprius (1) that travels through cranial thoracic (0.5) and all cervical (0.5) spinal cord;

RIGHT (1) nucleus ambiguus (1) Efferent pathways: RIGHT Nucleus ambiguous to RIGHT (1) vagal nerve (1); Vagal nerve to RIGHT (1) recurrent laryngeal nerve (1); RIGHT (1) intrinsic laryngeal muscles (1)

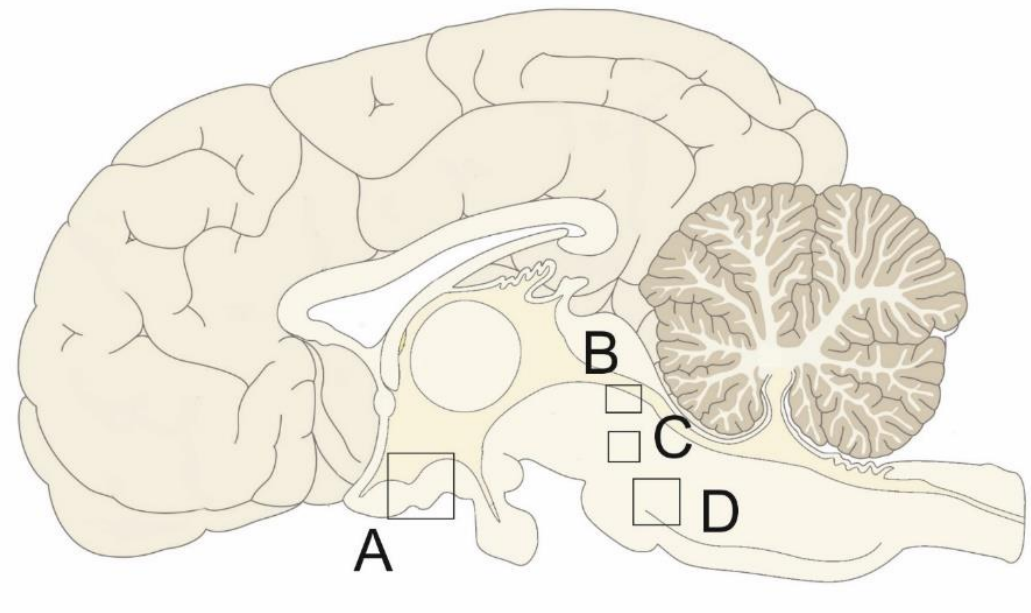
SAQ mock question

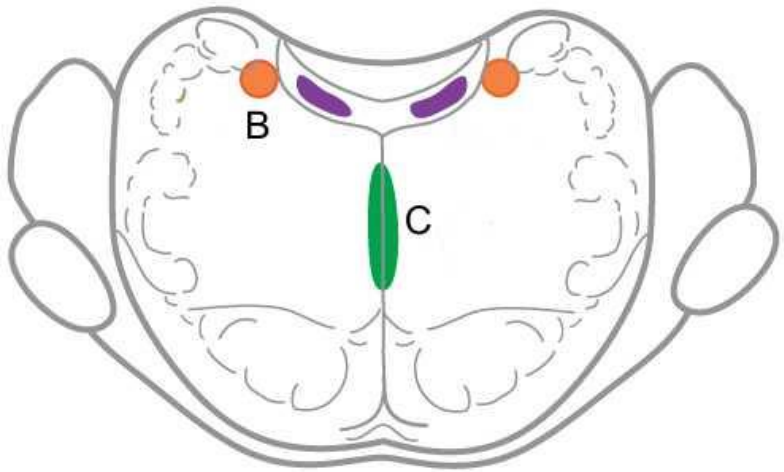
Narcolepsy

SAC test question: Narcolepsy

- **1.1. List 3 dog breeds that are genetically predisposed to narcolepsy (only the first thee breeds will be marked) 3 marks.**

1.2. Which anatomical structures (nuclei) of the brain are involved in the regulation of sleep and inhibition of the GSE-LMN (10 marks) and are consecutively activated and deactivated. The images may help to name them





A	
B	
C	
D	

SAQ test question

1.3. List 3 clinical signs associated with narcolepsy. Only the first three answers will be marked (3 marks)

- **1.4) Which pharmaceutical stimulates paradoxical sleep and would you inject to confirm your presumptive diagnosis of narcolepsy (2 marks)**

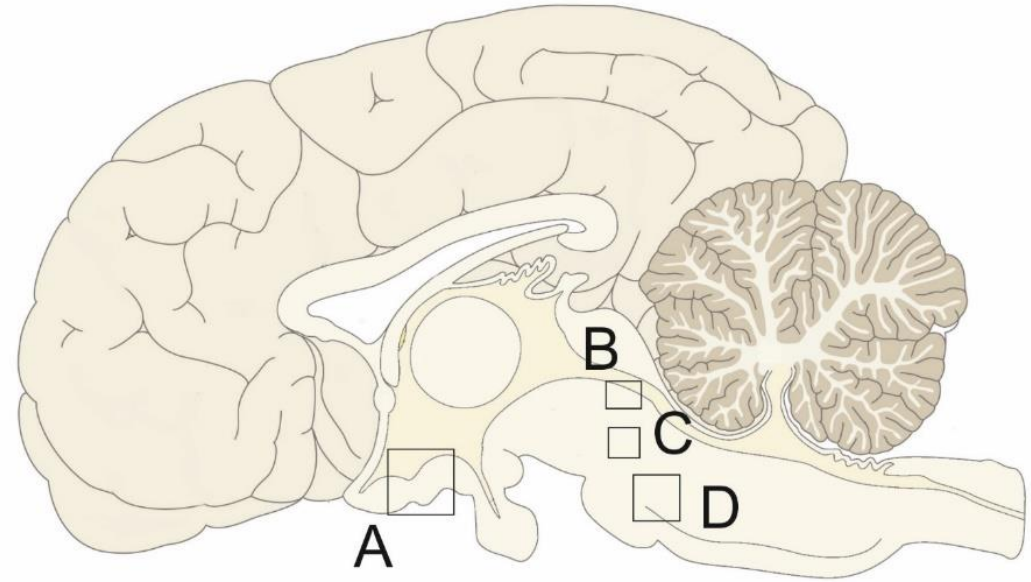
- **1.5) Suggest two drugs that can be used as a treatment for narcolepsy in dogs. <u>Only the first two will be marked (2 marks).</u>**

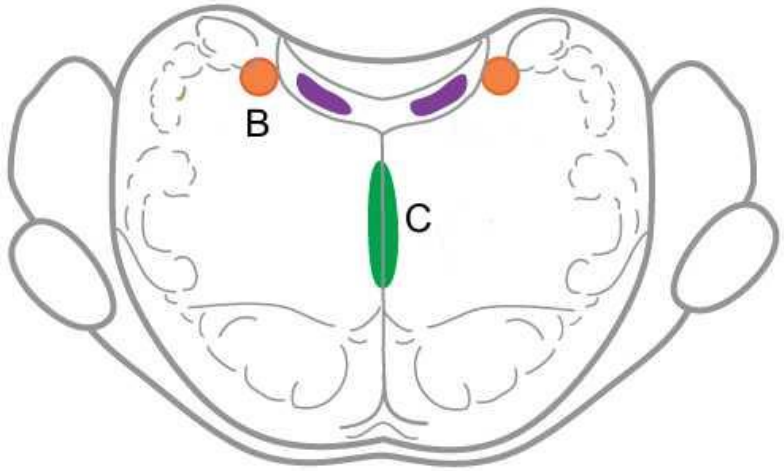
Model answer : Narcolepsy

- 1.1. **List 3 dog breeds that are genetically predisposed to narcolepsy. <u>Only the first three dogs will count (3marks)</u>**

- Model answer: Labrador retriever, doberman, dachshund

1.2. Which anatomical structures (nuclei) of the brain are involved in the regulation of sleep and inhibition of the GSE-LMN (10 marks).





A	**suprachiasmatic nucleus – hypothalamus (hypocretin)**
B	Locus coeruleus (norepinephrine)
C	Nucleus raphe (serotonine)
D	Pontine reticular formation (acetylcholine)

SAQ Cont

1.3. List 3 clinical signs associated with narcolepsy. Only the first three answers will be marked (3 marks)

- Correct answer: Daytime sleepiness (1), cataplexy (1) (also accept collapse), shorter sleep latency (1).

- **1.4) Which pharmaceutical stimulates paradoxical sleep and would you inject to confirm your presumptive diagnosis of narcolepsy (2 marks)**
- **Correct answer:** Physostigmine

- **1.5) Suggest two drugs that can be used as a treatment for narcolepsy in dogs. <u>Only the first two will be marked (2 marks).</u>**
- **Correct answers**: Tricyclic antidepressants (imipramine and clomipramine)

  Methylphenidate, Selegeline, Yohimbine

Reference: Tonokura, M., Fujita, K., Nishino, S.(2007) Review of pathophysiology and clinical management of narcolepsy in dogs. Veterinary Record 161, 375-380.

DaLahunta: Veterinary Neuroanatomy and Clinical Neurology Chapter 18.

Furr/Read: Equine Neurology

Case-based papers

- There will be two papers each consisting of 5 case-based questions.
- There will be 2 large animal cases out of the 10.
- The cases will include all elements of clinical neurology; neuroexamination (video), neuroimaging, electrodiagnostics and neuropathology.
- These questions are NO RETURN. This means that once you have submitted your answer you will not be able to change it.
- All questions must be answered in order before you can proceed to the next.

Structure of imaging questions

- There is always a lesion in the images. The lesion will be obvious; we do not expect the candidate to find a minimal lesion that does not fit to the clinical signs.
- We expect the candidate to be able to identify the imaging sequence, e.g. FLAIR, STIR, diffusion-weighted, T2, gradient echo etc.

Imaging

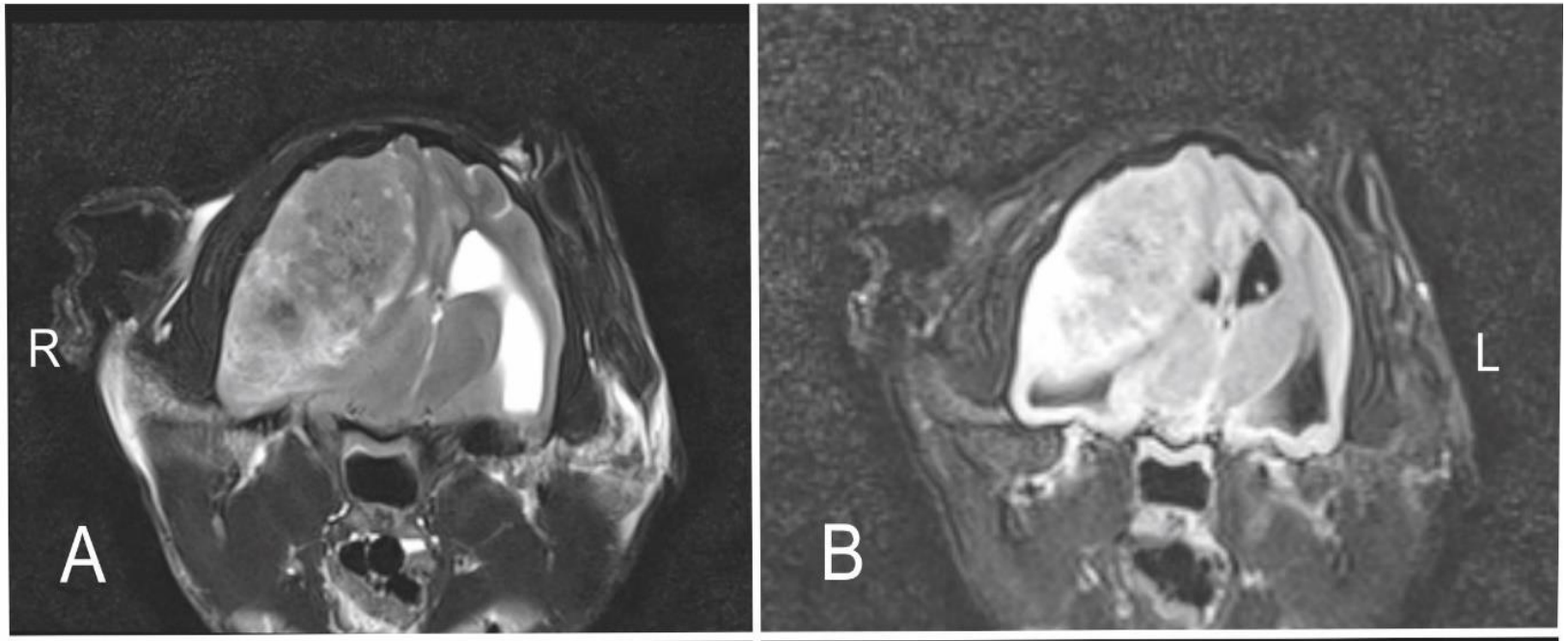
We expect the candidate to be able to identify the imaging used, the sequences, e.g. FLAIR, STIR, diffusion-weighted, T2, gradient echo etc and the orientation

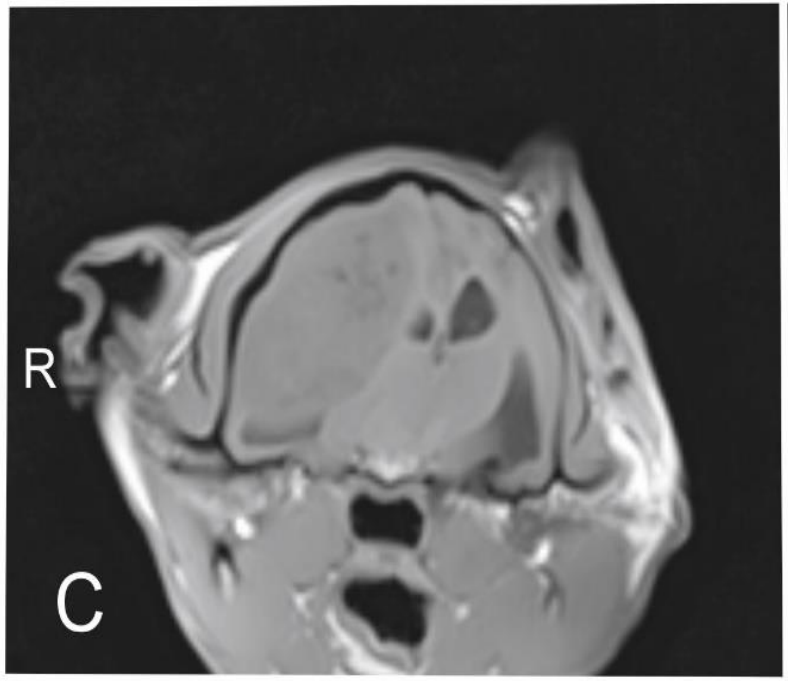
For the Lesion description, be specific and detailed

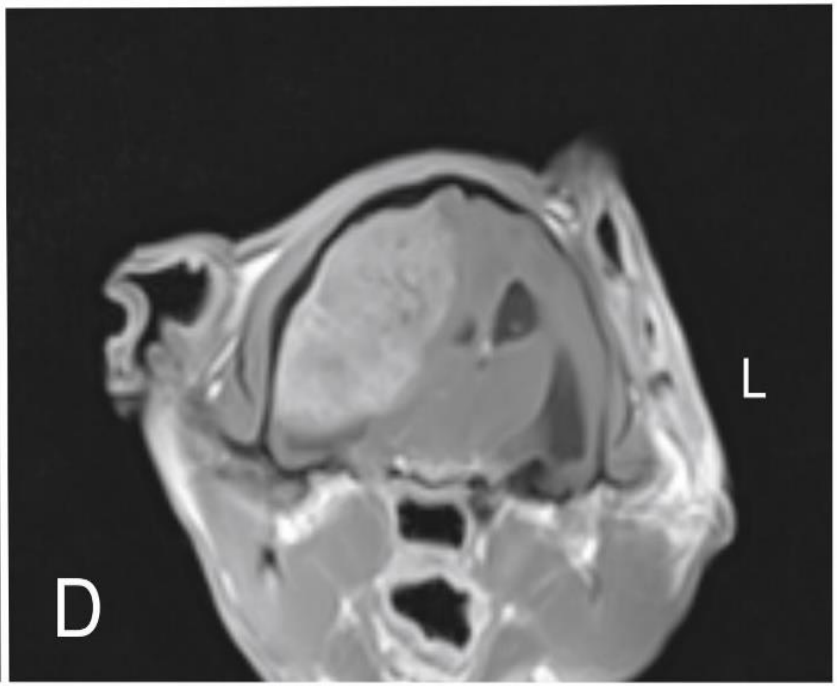
- **Number:** single, two, three, multiple, dissiminated
- **Location:** in the frontal lobe, within the ventricle, in the vertebral body; intraventricular, sellar/suprasellar, infratentorial, supratentorial
- **Sides**: right, left, basal, rostral, caudal,
- **Adjacent tissue**: next to the habenulae, in the flocculo-nodular lobe, within the dentate nulceus of the cerebellum
- **Intraaxial vs extraaxial**: list findings that imply the intra vs extraaxial location
- **Delineation**: well-defined ill-defined, well-demarcetad ill-demarcated
- **Signal** as presented in a sequence: COMBINE SEQUENCE AND SIGNAL : T2-hyperintense, T1 hypointens, FLAIR hyperintens, DWI-hyperintens etc.
- **Contrast uptake**: mild-moderate-severe, strong, little, homogenous vs. inhomogenous
-

Imaging: example question

- **A 14-year-old domestic shorthair cat is presented with obtundation and circling to the right.**
- **An MRI of the head is performed: 1.1) Please identify the image plain, the sequences used and describe the imaging findings (12 marks).**







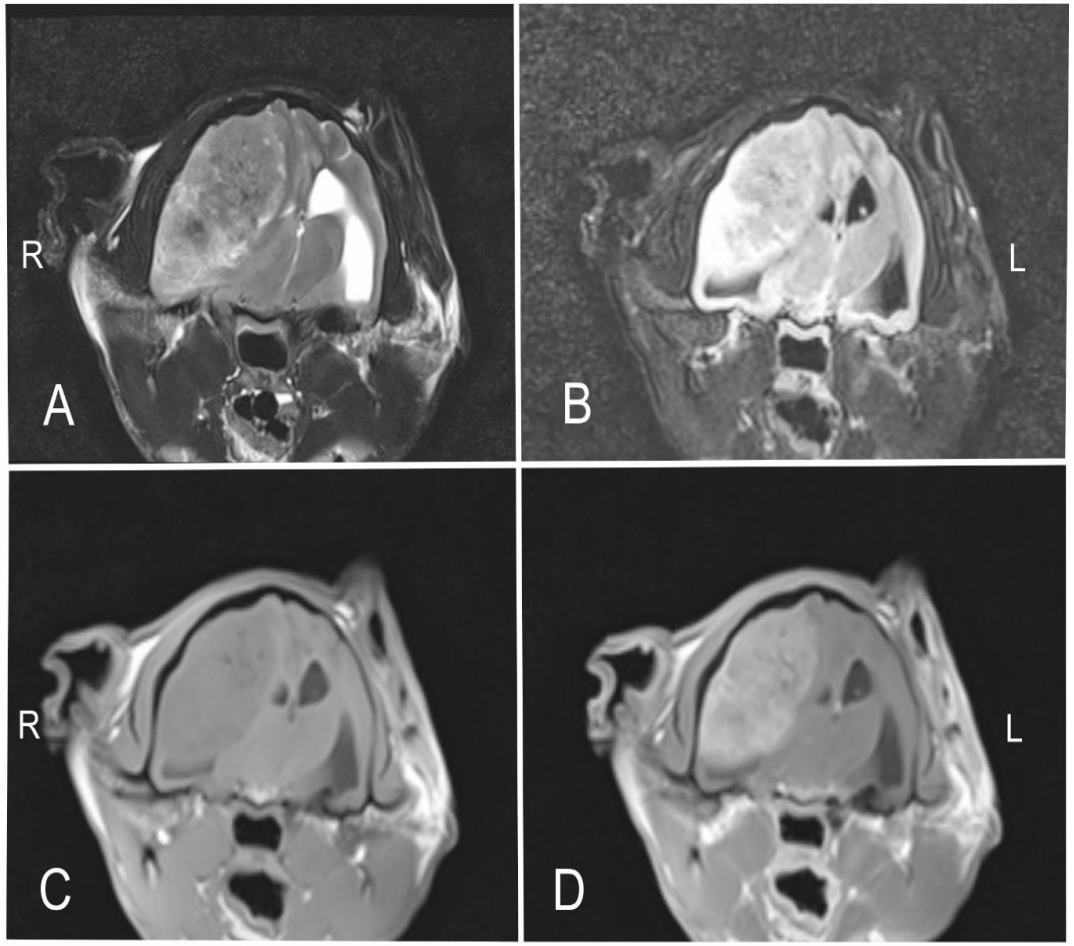
- **Model answer:**

- A: transverse T2
- B: transverse FLAIR
- C: transverse T1
- D: transverse T1 + contrast

Model answer: Imaging findings

There is a single (0.5), large (0.5), irregular (0.5) lesion in the right (0.5) parietal/temporal lobe (0.5) on the level of the lateral geniculate body of the thalamus (1)

The lesion is has a broad contact with the brain surface (1), is well delineated (0.5)→ probably extraaxial (1). It has a mass effect (1) on the adjacent tissue. It is inhomogenously (0.5) T2- (1) and FLAIR (1) hyperintense/isointens with hypointense foci (0.5), T1-hypointens (1) with moderate (0.5) inhomogenous (0.5) contrast uptake (1).



- **What is the most likely diagnosis?**

Meningioma (1mark)

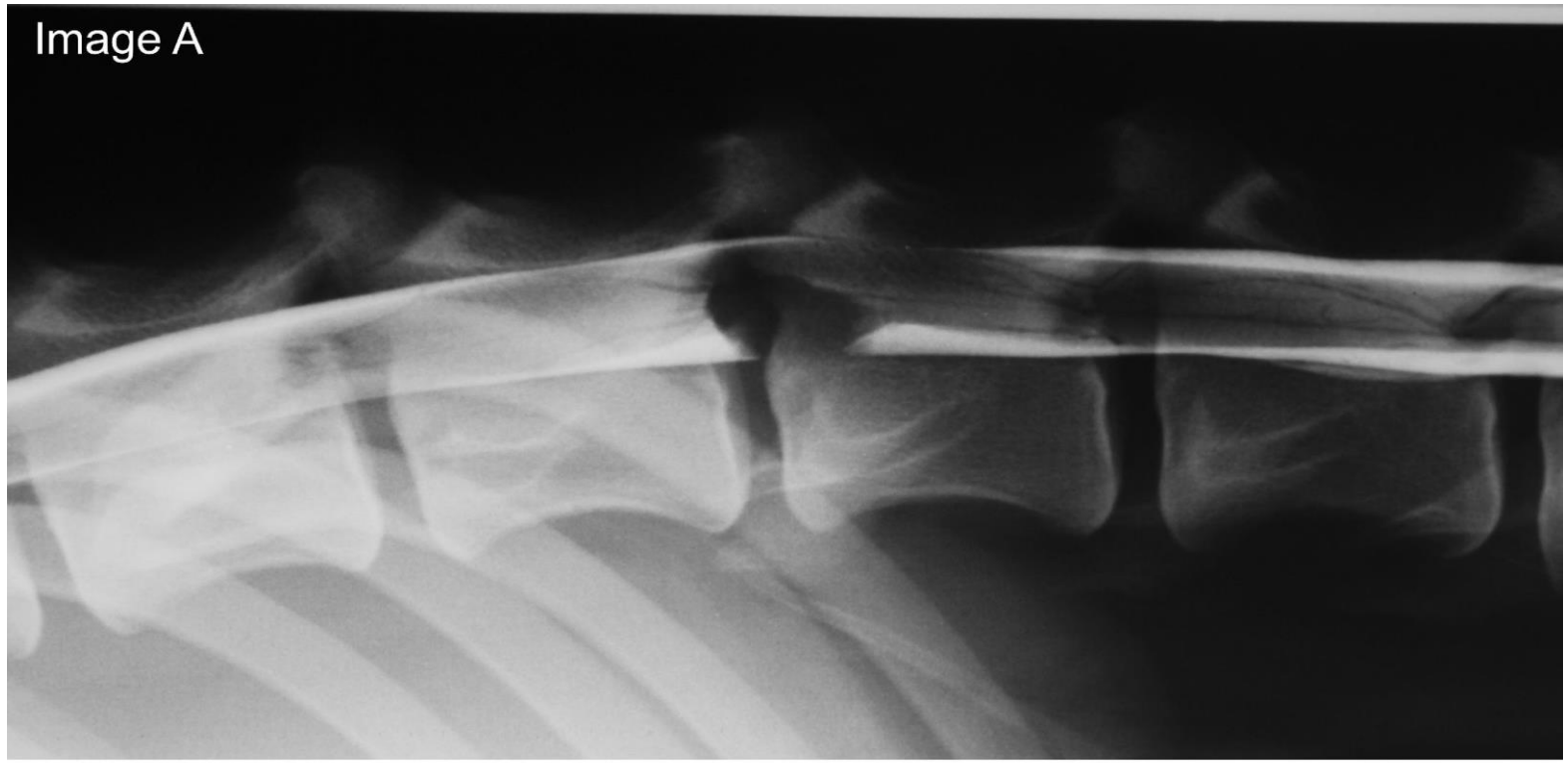
- **List three differential diagnoses (3 marks)**
- Granuloma (mycoplasma), toxoplasma cysts, hematoma, lymphoma, histiocytic sarcoma….

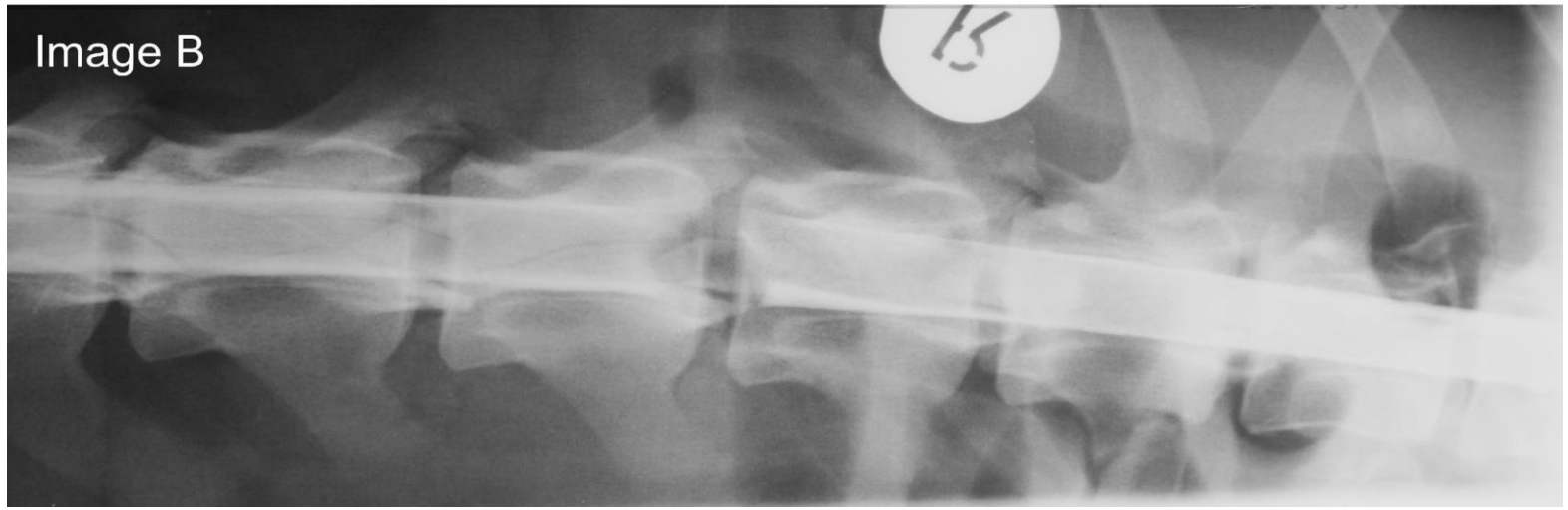
Imaging test case

A two year old German Shepherd dog was presented with a 4-months history of slowly-progressive ambulatory paraparesis. General physical examination was unremarkable. Neurological examination was consistent with a T3-L3 myelopathy

1.1 Complete the following table for images A and B (please use bullet points avoiding unnecessary repetition, each similar description will only count once)

	A	B
Imaging modality		
Imaging plane		
Anatomical level		
Lesion description and localization		





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	A	B
Imaging modality		
Imaging plane		
Anatomical level		
Lesion description and localization		

- **What is the most likely diagnosis (2.5 marks)**

- **List three specific etiologic differential diagnoses for the lesion showed in the images above (only the three first mentioned will count) (4.5 marks)**

Model answer (13 marks)

	A	B
Imaging modality	Radiography + myelogram (1) (also accept contrast study)	
Imaging plane	Lateral/laterolateral (0.5)	Ventrodorsal/dorsoventral (0.5)
Anatomical level	Thoracic spine (thoracolumbar transition) Th 13-L3 (1)	Thoracic spine (thoracolumbar transition) TH 12-L3/4 (1)
Lesion description and localization	Well circumscribed/well defined (1) contrast filling defect/interruption of continuous contrast columns (1) at the transition of L1 and L2 (1) ventral contrast column has a golf tee appearance (1, suggestive for intradural (1)-extramedullary (1) mass (1)	Lateralized (1) to the left (1)

Model answer

- **What is the most likely diagnosis**
- Spinal nephroblastoma (2,5 marks)

- **List three specific etiologic differential diagnoses for the lesion showed in the images above (only the three first mentioned will count)**
- Lymphoma (1,5 marks), meningioma (1,5 marks), peripheral nerve sheath tumor (1,5 marks) (also accept granuloma, haematoma, sarcoma…..)

Neuropathology

- A thorough knowledge about basic reactions of the central nervous system on any kind of insult (trauma, infection, ischemia, inflammation, tissue degradation, etc.) is expected, as well as thorough knowledge about pathological changes/hallmarks associated with specific CNS diseases on the macroscopic and microscopic level.
- You may be asked to interpret images (describe pathological changes), outline the pathogenesis, state additional diagnostic tests, provide pathological/morphological and/or the etiological possibilities.

Lesion description: Macro + micro

Number and size : single, two, three, multiple, disseminated, small, large

Location: in the frontal lobe, within the ventricle, in the vertebral body

Delineation: well-defined ill-defined, well-demarcetad ill-demarcated

Adjacent tissue: next to the habenulae, in the flocculonodular lobe, within the dentate nulceus of the cerebellum

Tissue morphology/cut surface : mucinous, gelatinous,

Colour: discoloration, red, greyish, green, black

Mass effect/loss of tissue

Lesion characterization: deviation from normal anatomy, malacia, hemorrhage, inflammation, status spongiosus

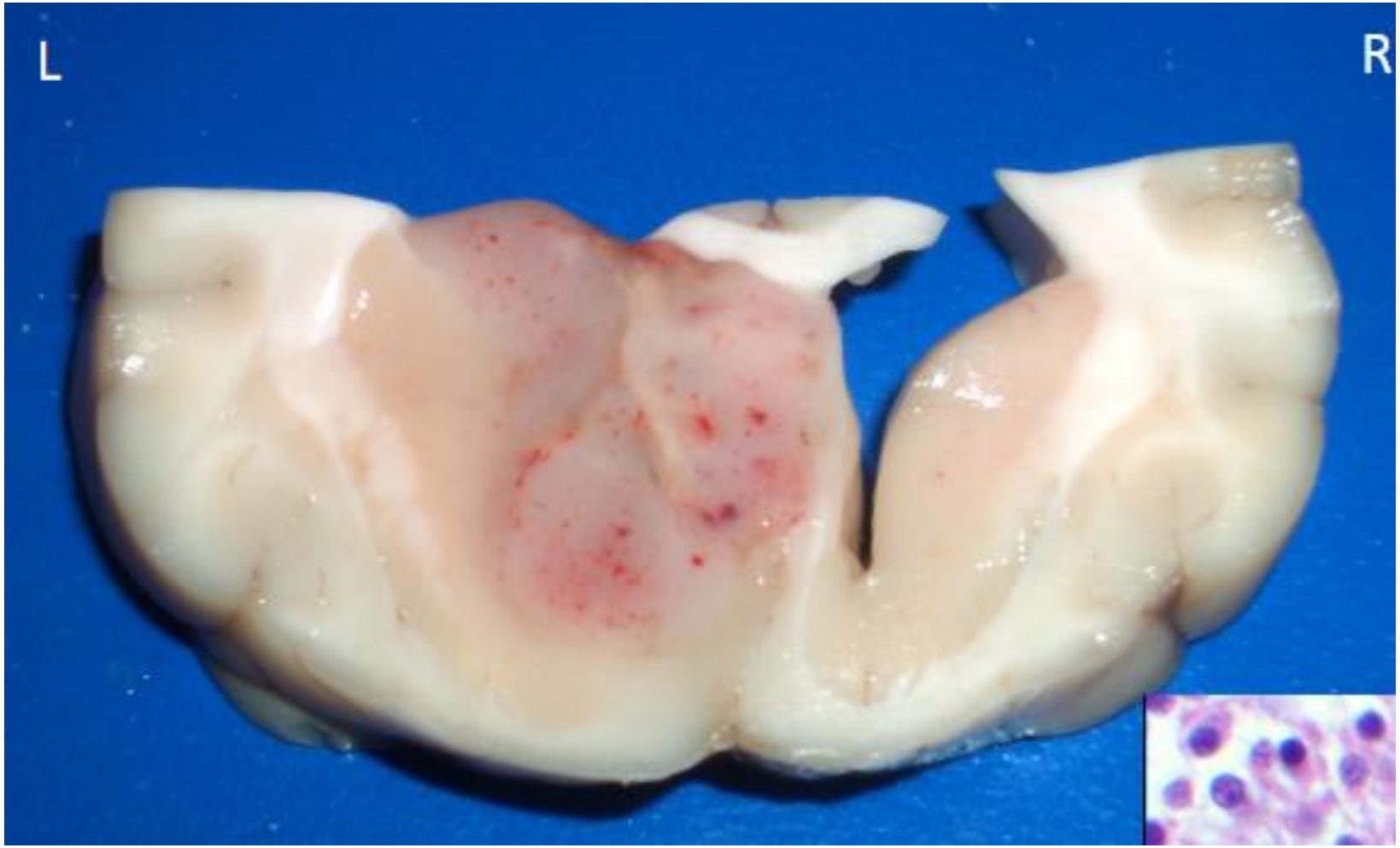
Vandevelde Higgins Oevermann: Veterinary neuropathology, chapter 1.4 characterization of lesion patterns

Lesion description: Micro

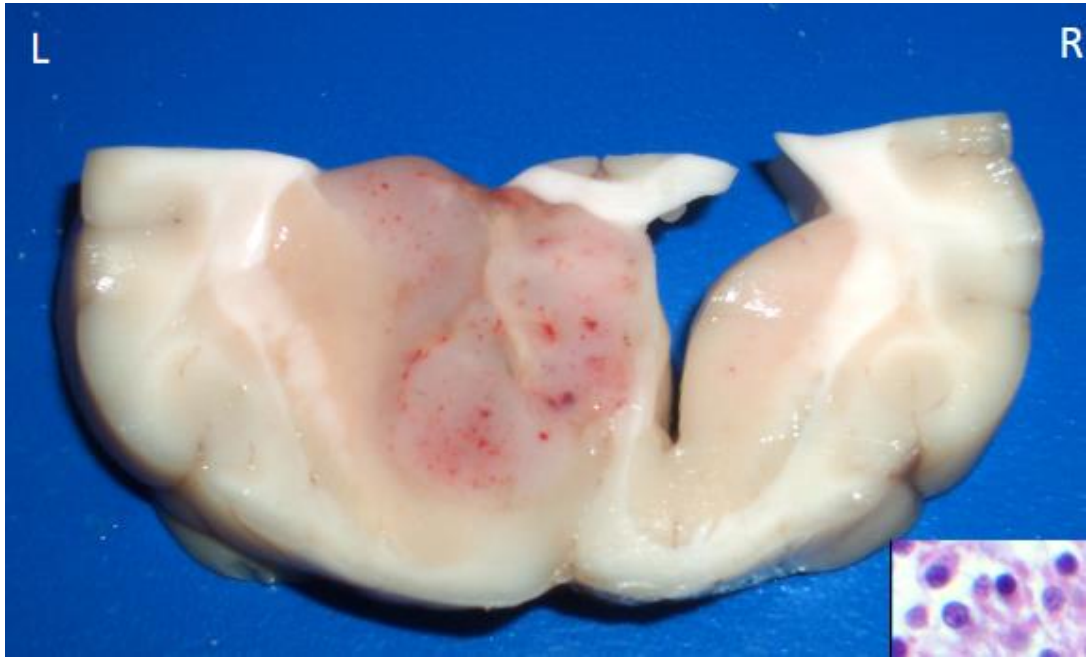
- Malacia, neuronal death, status spongiosus, perivascular cuffing, hypercellularity, accumulation of material in the cells, selective loss of neurons, selective loss of myelin

- Which cells are involved: neurons, glia, granular cells, pyramidal neurons

Canine: mongrel dog, 11 years old, female
Sudden onset of seizures two weeks prior to admission. Died in status epilepticus. 1. Determine the plane and anatomical level of this brain section (2 marks) and describe the lesion



Model answer:



- 1.1.: transverse section (0.5)
- at the level of the caudate nuclei/

septum pellucidum/ claustrum/

accumbens nucleus/ internal capsule (1.5)

(give 1 mark for frontal lobe/ lateral ventricles)

- 1.2. Well defined (0.5), mucinous/ gelatinous (0.5) mass/ space-occupying lesion/ lesion with mass effect (1) in the region of the left (0.25) lateral ventricle (0.25) and caudate nucleus (0.25), accumben snucleus (0.25), septum pellucidum (0.25); (give maximum of 0.5 all together for caudate nucleus, accumbens nucleus, septum pellucidum; (give 0.25 marks if only surrounding parenchyma/brain tissue is mentioned)...with multiple small haemorrhages/ multifocal red discolouration (0.5) and midline shift, septum deviation (0.25) to the right (0.25)

3) Describe the cellular morphology depicted in the above histological image (2 marks)

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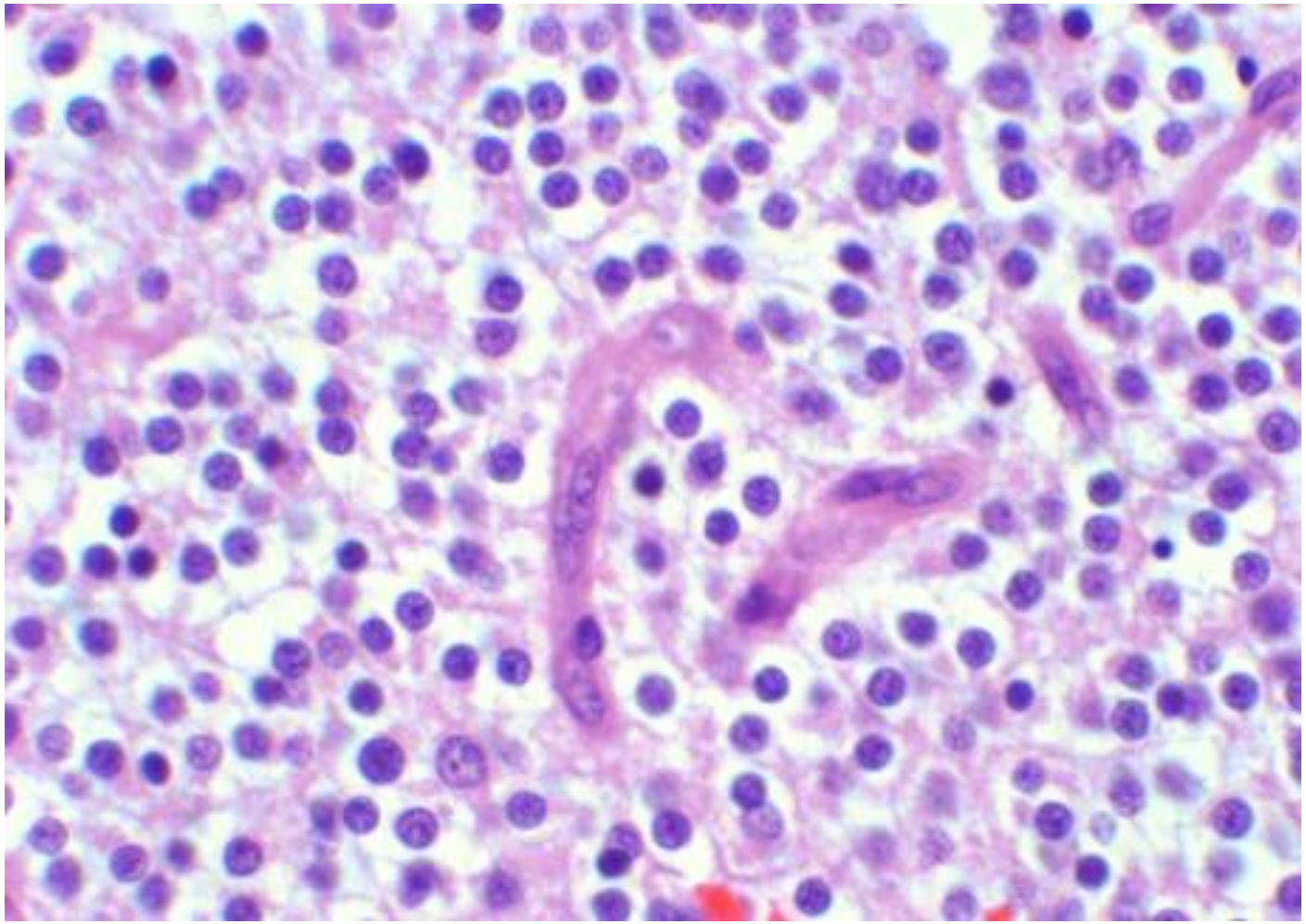
4) What is

your diagnosis? (2 marks)



Model answer micro

- **3) Describe the cellular morphology depicted in the above histological image (2 marks)**
- clear cell/ honey comb (2)
- *also accept descriptions such as: nuclei are round, dark staining, centrally located in clear cytoplasm, cells have well defined cellular margins, fried egg appearence*
-
- **4) What is your diagnosis? (2 marks)**

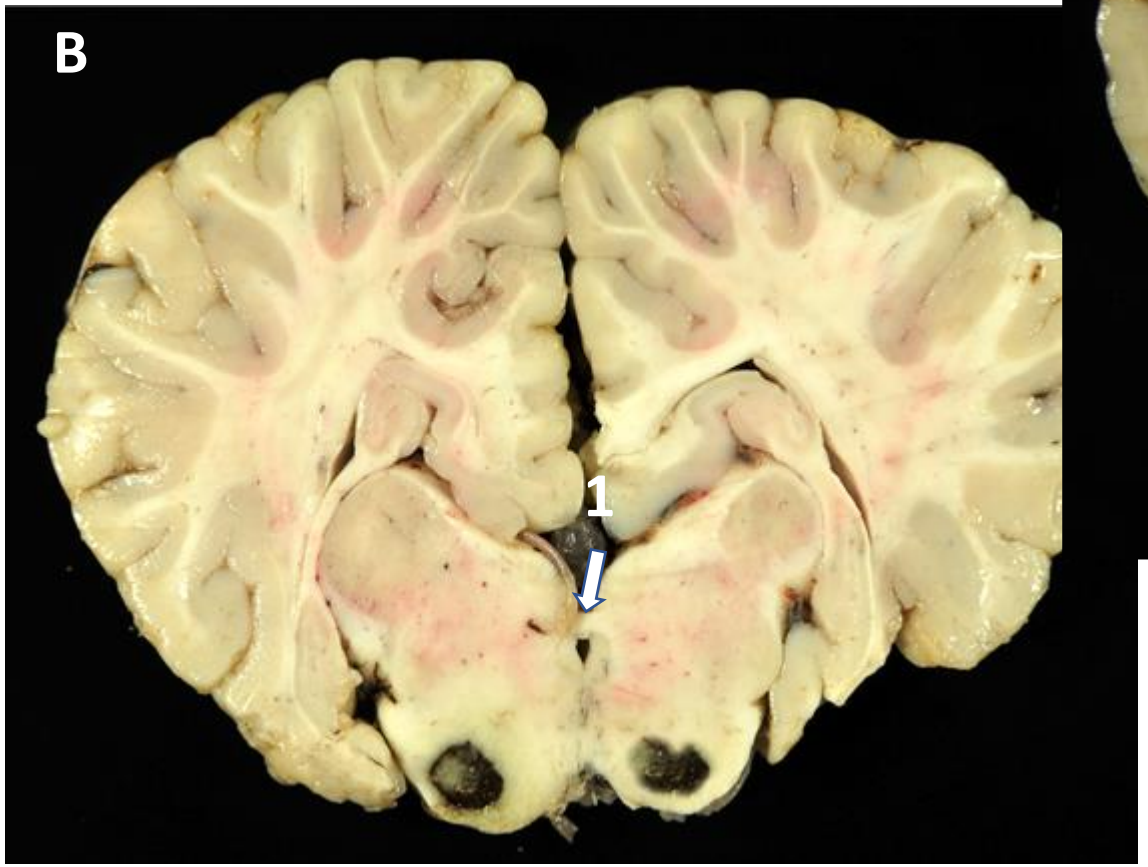
- oligodendroglioma (2);
- *give 1 mark for glial tumour/ glioma; give 0.5 marks for tumour*

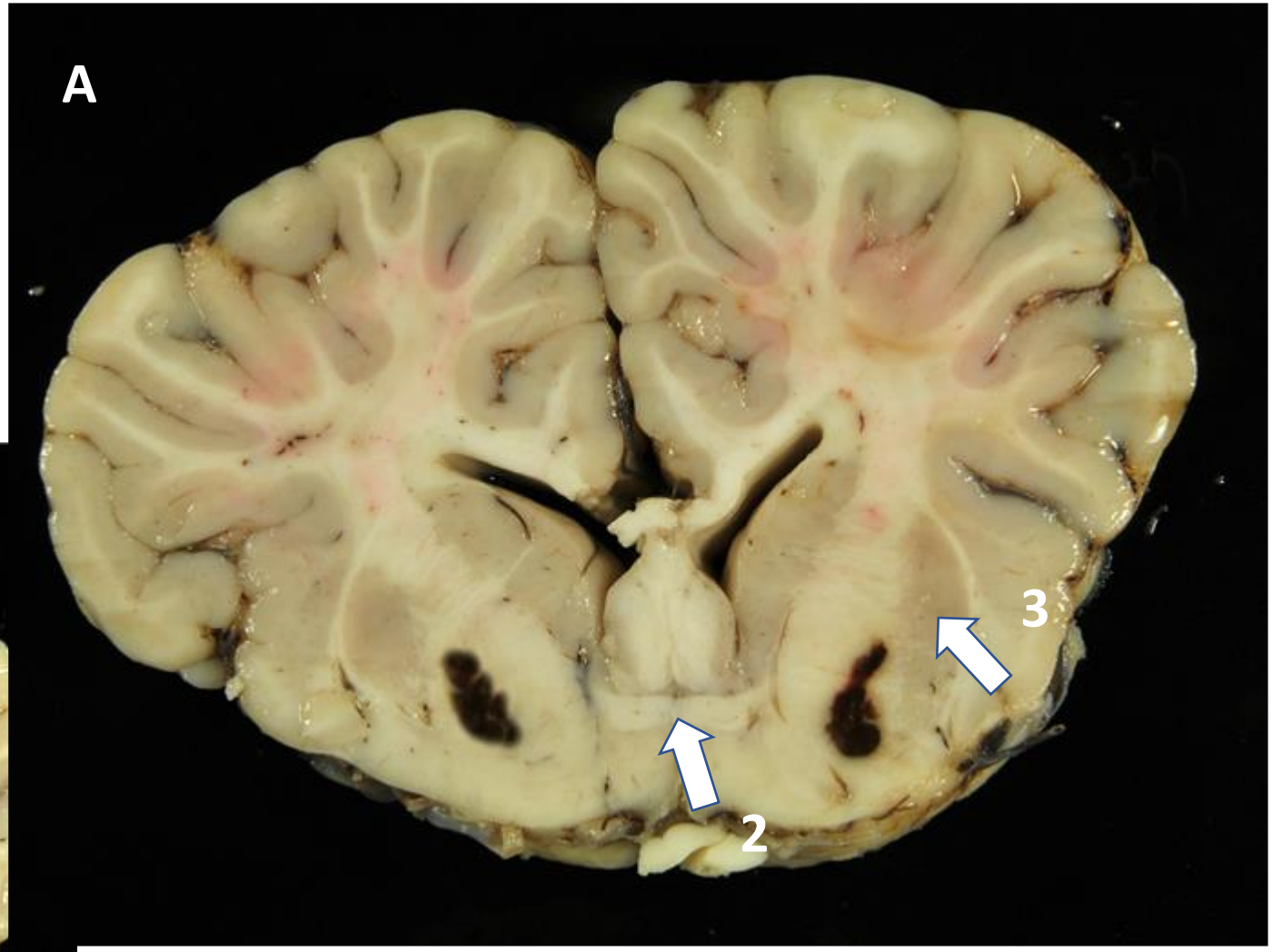
Neuropathology test case 1

Transverse brain sections of a Quarter horse, 6 years old,

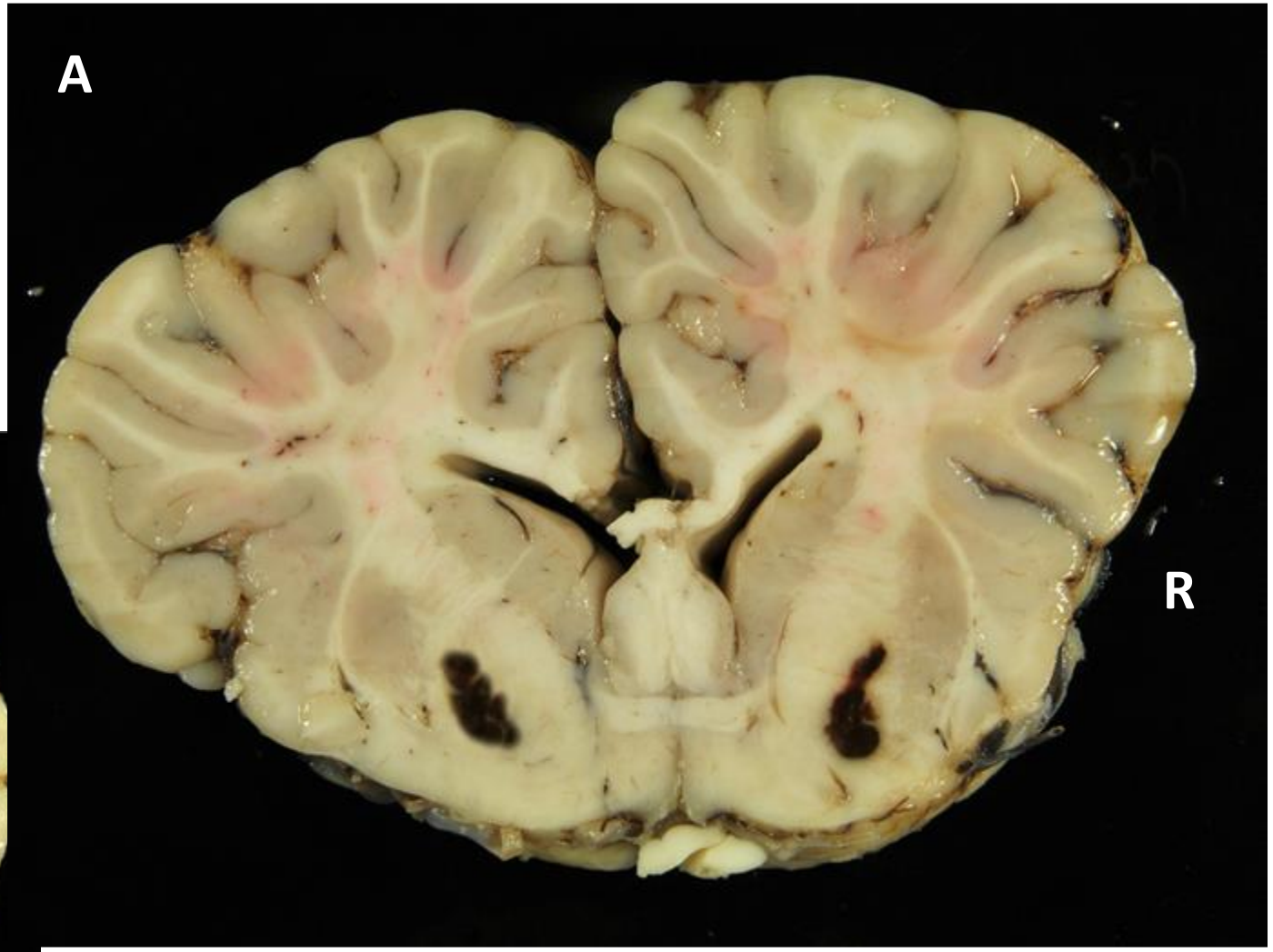
Medical history: hypertonus of facial muscles, retracted lips, curling of the tongue, circling, proprioceptive deficits, inabillity to eat and drink, euthanized.

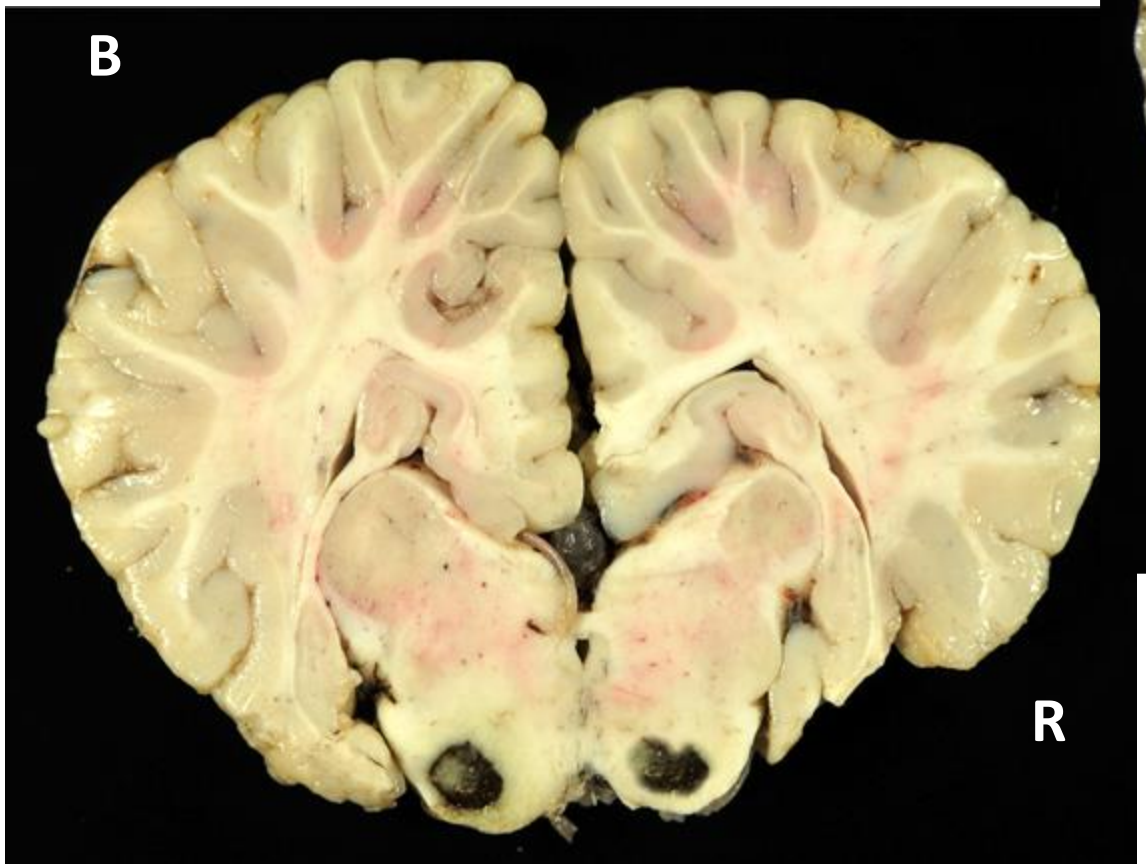
- 1.1 Name the anatomical structures highlighted by the arrows (1.5 marks)


B
1


A
2
3

1.2 List all pathological findings (5 marks)





Neuropathology case 1

- **1.3. What is your presumptive diagnosis:**

- **1.4. Name the toxin that causes the disease**

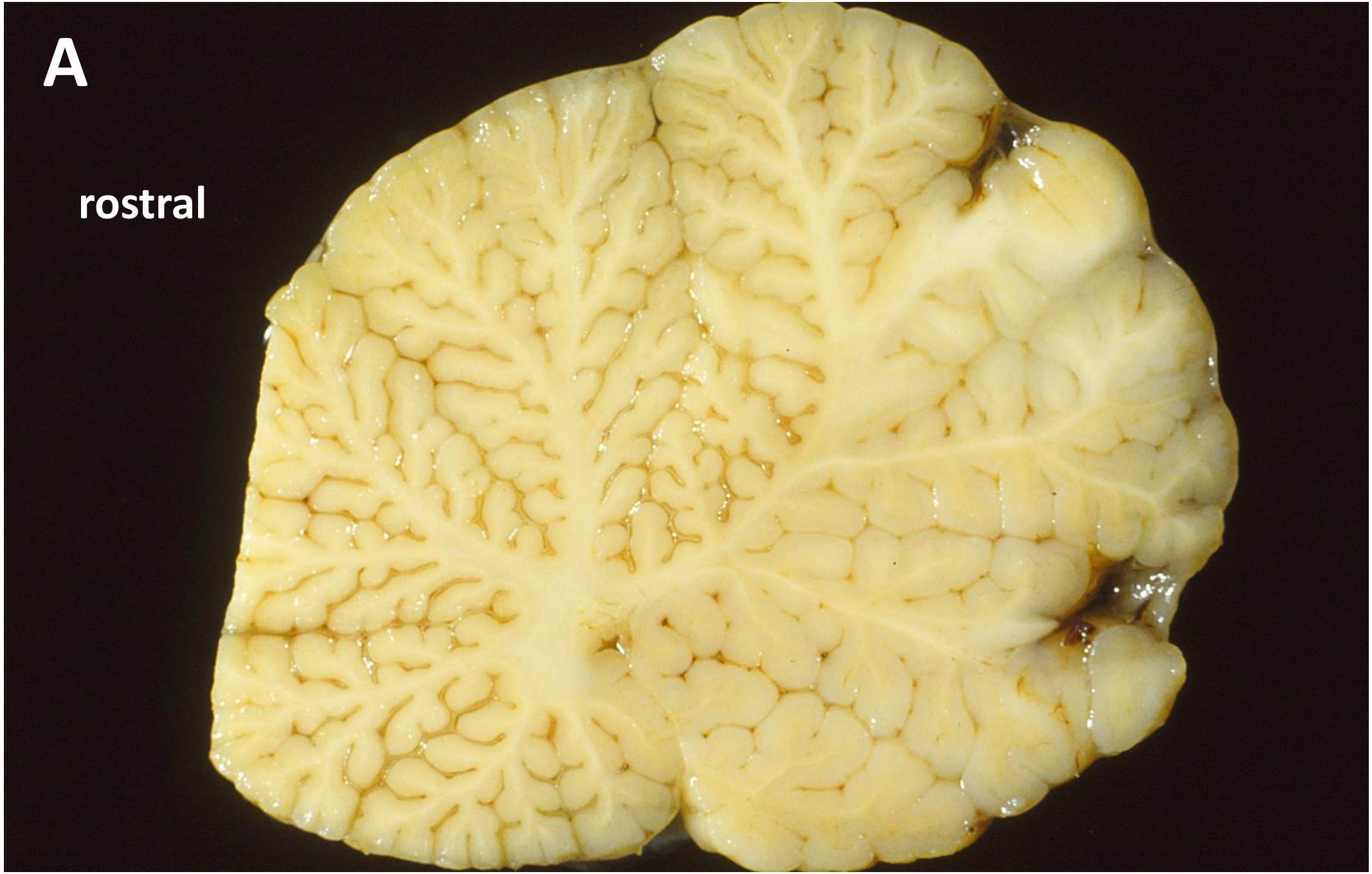
1.5. Name the natural origin of the toxin

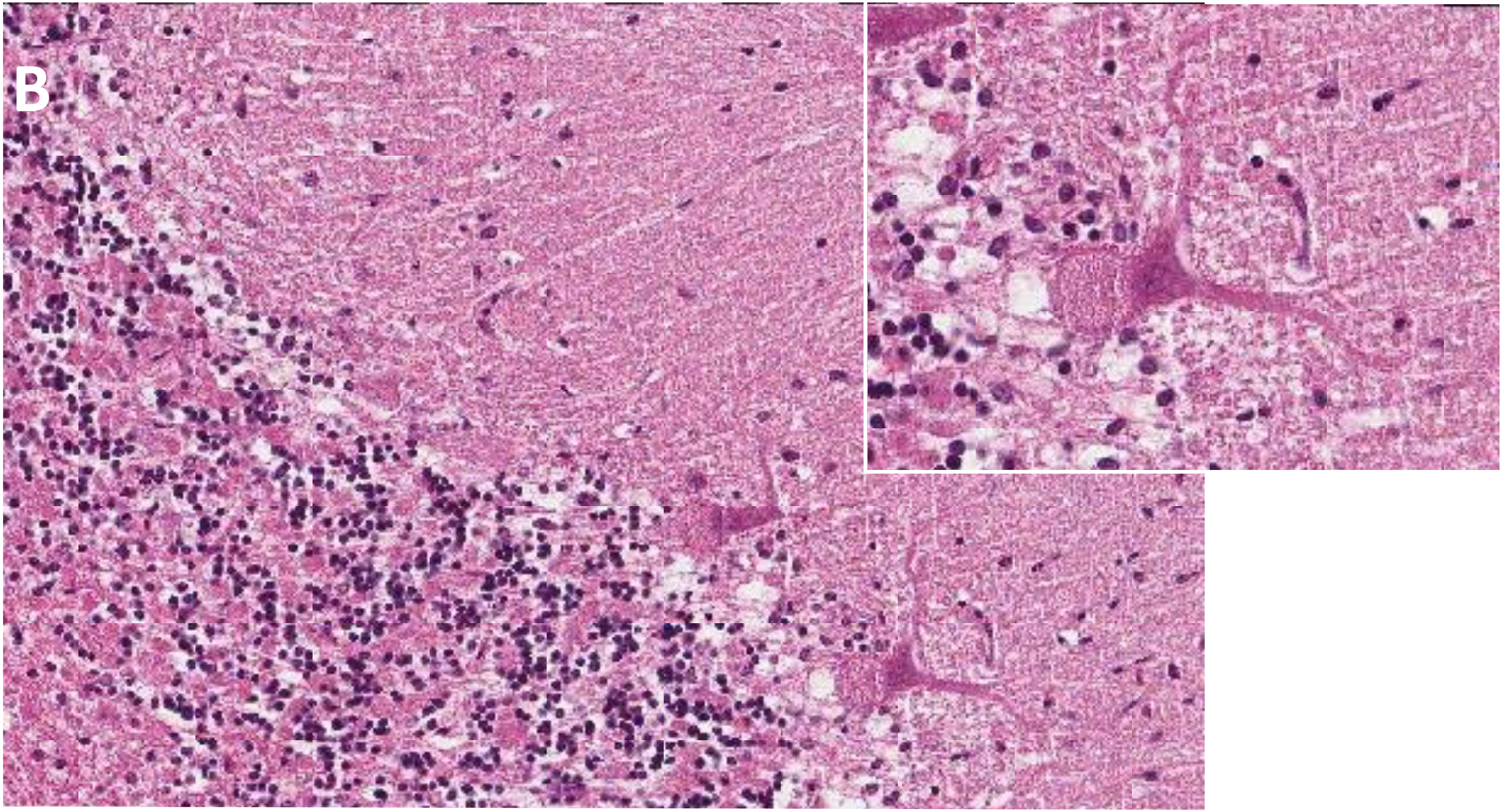
Neuropath test case 2

- Chihuahua 8 months old, female intact,
- Behavioral changes, aggressive, head pressing, visual deficits in the night

Sagittal section of the cerebellum:

- 1.1 Describe the pathological findings in image A (macro) and B
- 1.2. What is your diagnosis based on all findings


A
rostral

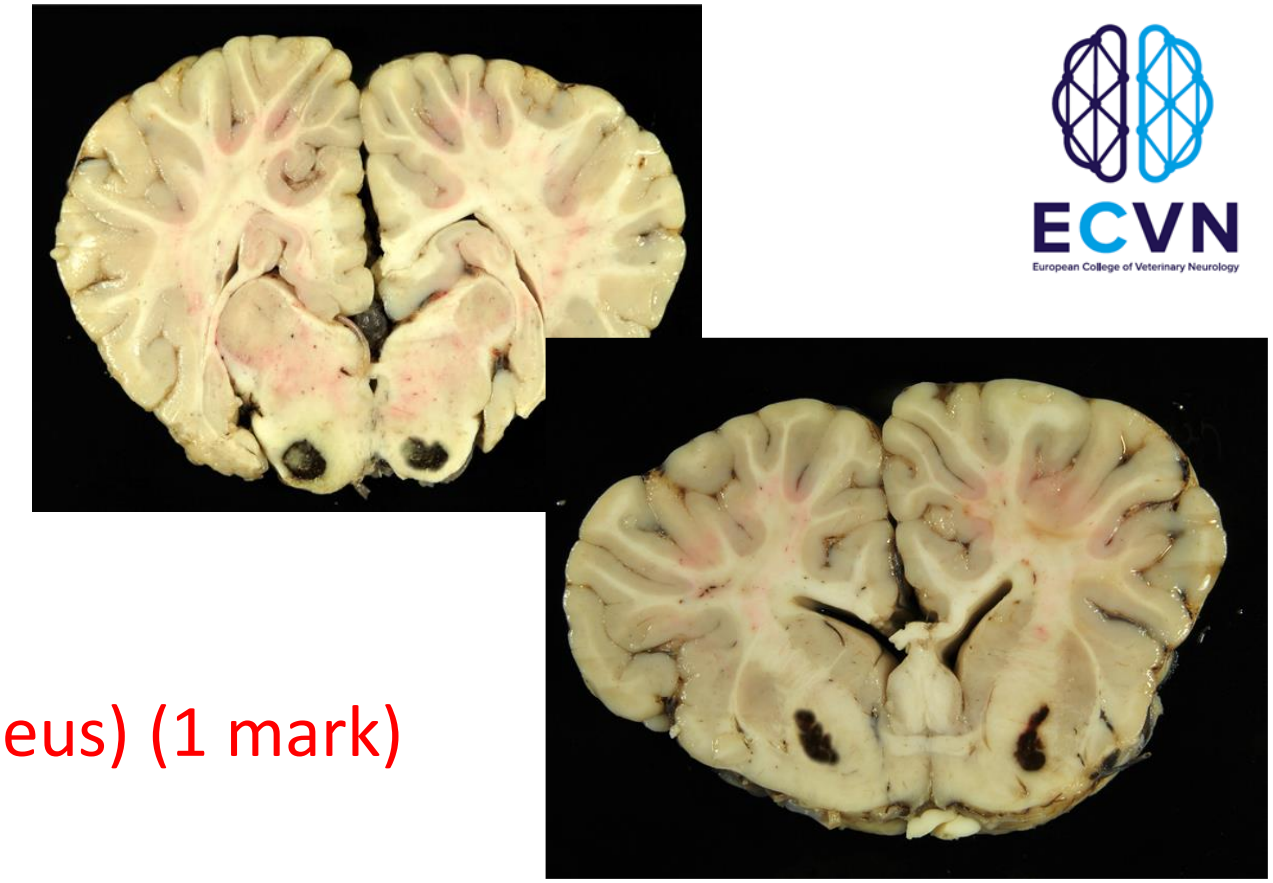

B

Neuropathology test case 2

- Name a breed of the dog that has a genetic predisposition for the disease and an **early** onset of clinical signs (<1-2 years) (chihuahua not accepted)

- Name a breed of the dog that has a genetic predisposition for the disease and an **late** onset of clinical signs (>3-4 years)

Model answer case 1



- Anatomical structures
- 1: caudal commissure (1 mark)
- 2: rostral commissure (1 mark)
- 3: putamen (accept lentiform nucleus) (1 mark)

- A+ B: Two (0.5) bilateral (0.5) symmetrical (0.5) focal (0.5), well defined (0.5), black, dark colour (0.5) lesions in the globus pallidus on both sides (0.5) in both cerebral peduncles/substantia nigra (0.5)

Model answer case 1

- **1.3. What is your presumptive diagnosis:**

Equine nigropallidal encephalomalacia (1 mark) also accept toxic equine parkinsonism

- **1.4. Name the toxin that causes the disease**

Sesquiterpen-lactone, dihydromethylpyrane, subluteolide, janerin, cynaropicrin, acroptilin, solstitialin (1 mark)

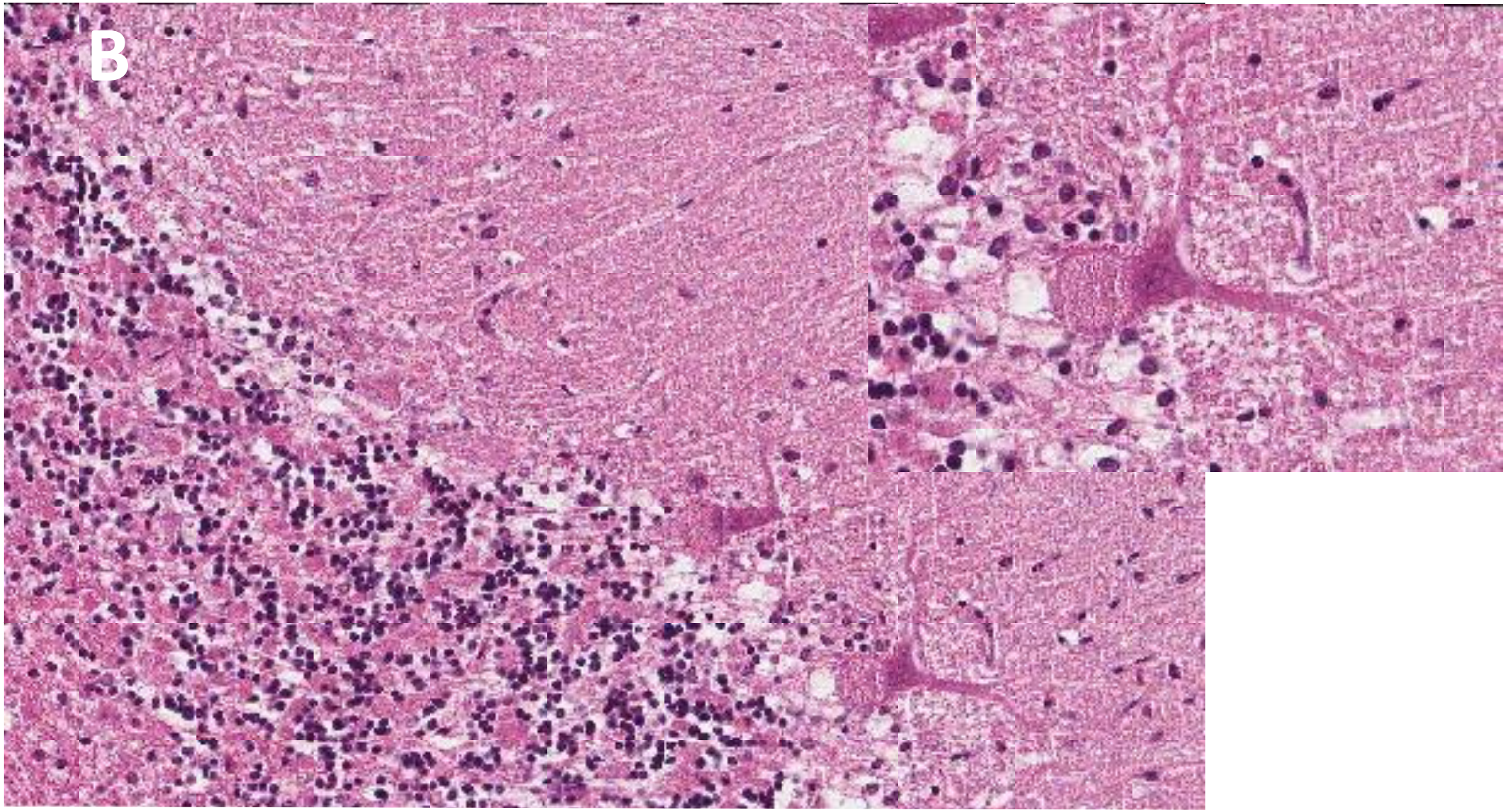
1.5. Name the origin of the toxin

Yellow star thistle intoxication (1 mark), also accept Russian knapweed, Malta star thistle, creeping knapweed

Model answer case 2

- **Pathological findings (8 marks)**
- **A:** atrophy (0.5) of cerebellar foliae (0.5) in the rostral lobe of the cerebellum (0.5)
- B: paucity of Purkinje cells (1), swelling (enlargement) of somata/cell body or remaining PC (1), granular (0.5) eosinophilic (0.5) inclusions (1) in the cytoplasma (0.5)
- hypocellularity within the granular cell layer (1 extra mark)
- Peripheral displacement of the nuclei (1 extra mark)

- Diagnosis: Ceroid lipofuscinosis (1 marks), 0.5 mark for storage disease



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Model answer case 2

- Name a dog breed that has a genetic predisposition for the disease and an **early** onset of clinical signs (Chihuahua is not accepted) (1mark)

American Bulldog, Australian Cattle Dog, Australian Shepherd, Border Collie, Chinese Crested dog….

- Name a dog breed that has a genetic predisposition for the disease and an **late** onset of clinical signs (1mark)

Labrador Retriever, Tibetan Terrier, Cocker Spaniel….

Electrodiagnostics

- Candidates should have in depth knowledge of performing various electrophysiological tests such as EMG, NCV studies (motor/sensory), F waves, evoked potentials (BAER, electroretinograms, visual evoked potentials etc) and electroencephalograms… and other tests.
- Candidates must be able to interpret electrodiagnostic recordings listed above(small and large animals).

1.1 You are presented with the following electrodiagnostic findings in a dog with suspected neuromuscular disease. Interpret the findings of the following tests (20 marks).

Side	Muscle	Insertional activity	Fibrillations	Positive sharp waves
Left	Plantar interossei	**Increased**	**2+**	**2+**
Left	Gastrocnemius	**Increased**	**2+**	**2+**
Left	Cranial tibial	**Increased**	**2+**	**2+**
Left	Semimembranosus	**Increased**	**2+**	**2+**
Left	Biceps femoris	**Increased**	**2+**	**2+**
Left	Middle gluteal	Normal	Normal	Normal
Left	Quadriceps	Normal	**1+**	**1+**
Left	Palmar interossei	**Increased**	**3+**	**3+**
Left	Flexor carpi ulnaris	**Increased**	**3+**	**3+**
Left	Ext carp rad long	**Increased**	**3+**	**3+**
Left	Triceps	**Increased**	**2+**	**2+**
Left	Temporalis	Normal	Normal	Normal

1) State how increased insertional activity differs from abnormal spontaneous activity (fibrillations and positive sharp waves) in its cause and appearance (4marks)

- Model answer:
- **Cause:** Increased insertional activity is caused by stimulation of abnormal myocytes by needle insertion; insertional activity arises from mechanically stimulated myofibres. Abnormal spontaneous activity is caused by discharge of abnormal (= denervated, hypersensitive or myofibres with irritated muscle membranes) myocytes without the need for stimulation.
- **Appearance:** Increased insertional activity appears as a burst of electrical activity that is greatest after needle insertion and decreases/stops over time, is abrupt in onset and termination, no waxing and waning. Abnormal spontaneous activity is persistent and independent of needle insertion.

2) The table summarizes stimulation points and recording sites from a dogs` limbs. Which two nerves have been tested in this ENG table? (2 marks) Electroneurography (ENG)

Stimulation site	Recording site	Onset (ms)	P-T Amp (mV)	Dist (cm)	Velocity (m/s)	Residual latency (ms)	F-latency (ms)
LIMB 1							
Site 2: Proximal to calcaneus	Pedal interosseous	3.1	0.3	15.0	63	1.83 (normal <2.2)	17.2 (normal 13.45)
Site 1: Sciatic notch		5.5	0.2				
LIMB 2							
Site 2: Accessory carpal	Palmar interosseous	2.1	0.8	9.0	53	1.16 (normal <2.2)	20.0 (normal 13.95)
Site 1: Ulnar notch		3.8	1.1				

Correct answer:

Limb 1: Scitaic-tibial

Limb 2: Ulnar

3) Calculate the following parameters. Please include the calculation process that you need to reach the answers and the results:

- **Distance from accessory carpal cathode to inverting recording electrode (3 marks)**
- **Correct answer:**
- Residual latency = CMAP onset latency - (distance/ distal conduction velocity)
- Distance = (CMAP onset latency - residual latency) x distal conduction velocity = (2.1 - 1.16) x 53 = 49.82mm. (3 marks for correct answer but 1 mark for residual latency equation and 1 mark for transforming to distance equation if the answer is incorrect)

Calculate the F-ratio for the hindlimb (2 marks)

- **Correct answer:**
- **b) F-ratio = central latency/M latency = (F latency – M latency – 1)/(2xM-latency)**
- **F-ratio = (17.2-3.1-1)/(2 x 3.1) = 13.1/6.2 = 2.11**
- **(2 marks for the correct answer and 1 if the answer is wrong but the equation correct)**

4) What is meant by the pause time (1mark) in the next table and why is this important in repetitive nerve stimulation (1 mark)?

Stim frequency	Amp 1 (mV) P-T	Amp 5 (mV) P-T	Amp % Dif	Train Length	Pause time (min:sec)
Left palmar interosseous					
3Hz	0.85	0.80	-5.9	10	01:00
5Hz	0.83	0.82	-1.9	10	01:00
10Hz	0.84	0.74	-11.9	10	01:00
Left pedal interosseous					
3Hz	0.32	0.30	-6.3	10	01:00
5Hz	0.31	0.28	-9.6	10	01:00
10Hz	0.32	0.27	-15.6	10	01:00

- **Correct answer:**
- **Pause time = time delay between trains of stimulation**
- **Importance = ensures enough time is taken to replenish Ach reserves between tests, if lower, higher decrement in normal cases.**

5. State your most likely diagnosis for this case from the following DDx list (2 marks)

A) Myasthenia gravis

B) Polyradiculoneuritis

C) Distal denervating disease

D) Polymyositis

E) Botulism

F) Chronic inflammatory demyelinating polyneuropathy

Correct answer: B

6) Briefly state why the other differential diagnosis would be incorrect (5marks):

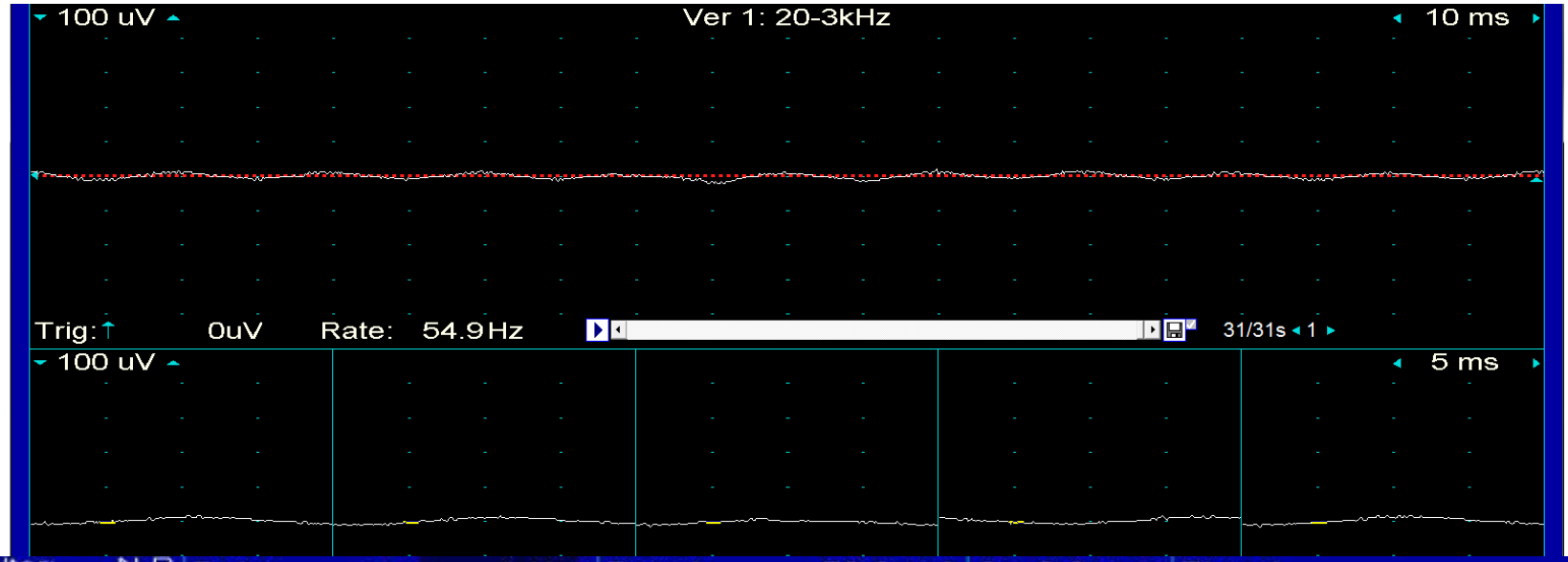
- A)MG = incorrect: no decrement with RNS (0.5) and inconsistent with generalized EMG changes (0.5)
- B) PRN = correctC) DDD = incorrect: normal residual latency (0.5) and f--wave analysis suggests proximal segment disease
- D) Polymyositis = incorrect: F--wave analysis suggests neuropathy/radiculopathy (1); incorrect to say that the reduced CMAP amplitude is inconsistent with myosi=s as this can be seen with severe muscle disease
- E) Botulism = incorrect: no increment with RNS (0.5) and EMG changes not seen in botulism (0.5) or F--wave = proximal neuropathy/radiculopathy (0.5; max 1 mark for this sec=on)
- F) CIDP = incorrect: no reduction in MNCV (1). Spontaneous actvity is possible for this disease because extensive demyelination = axonal loss.

EDX test question

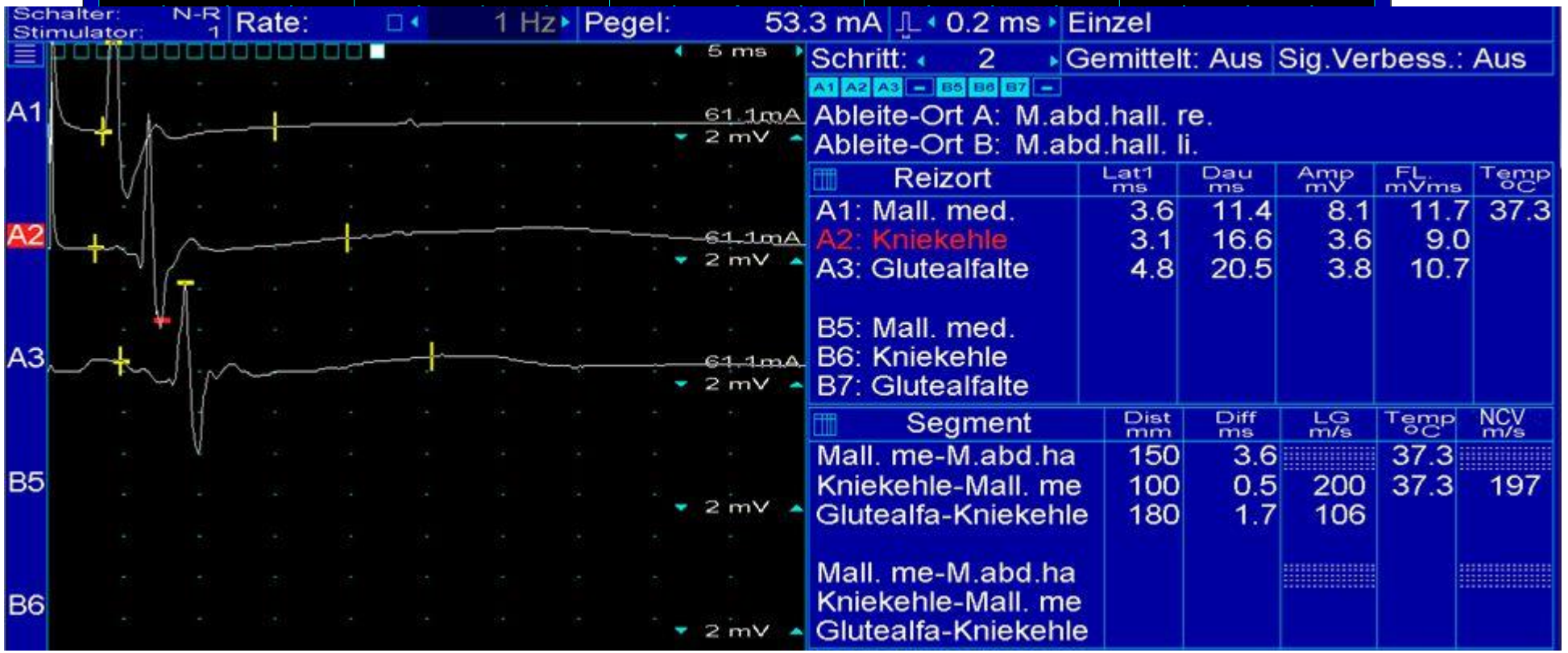
- 8 years old golden retriever with a sudden onset of hindlimb weakness. Neuroexam is normal.

- 1. Name the following three edx tests, list and interpret the findings (5 marks)

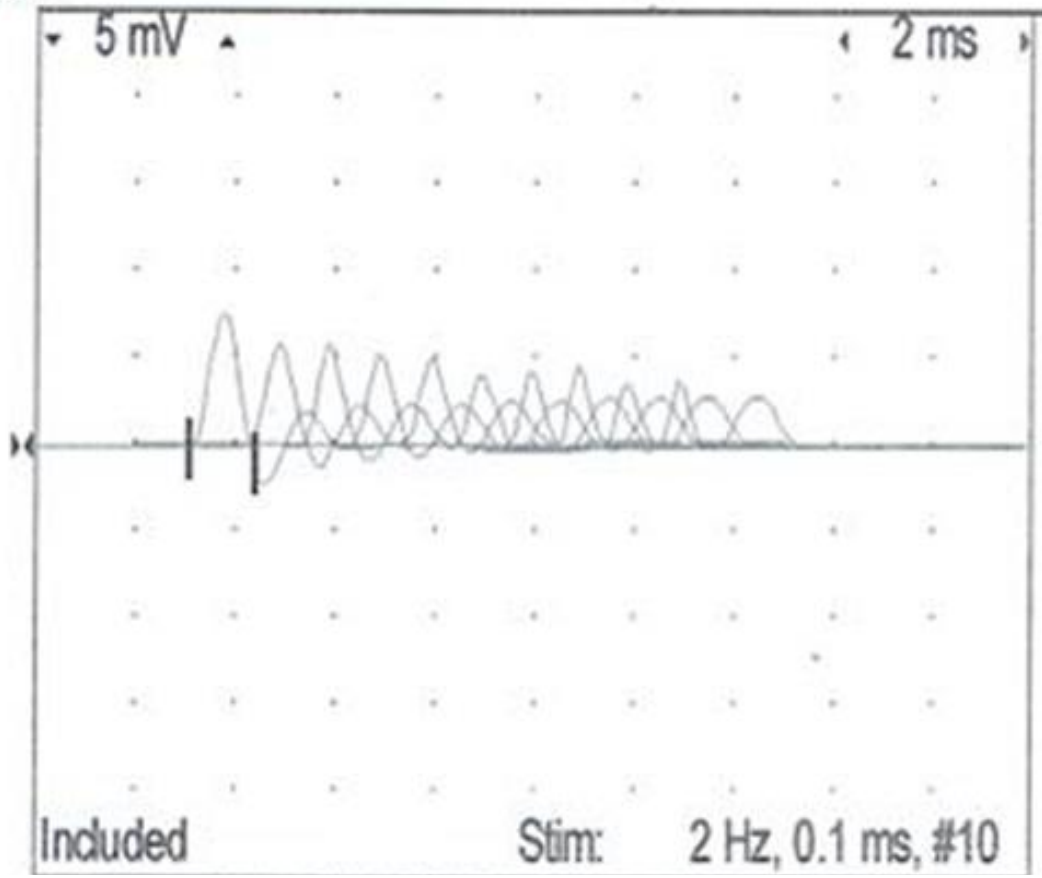
Test 1


100 uV
Ver 1: 20-3kHz
10 ms
Trig:↑ 0uV Rate: 54.9 Hz
31/31s 1
100 uV
5 ms

Test 2


Schalter: N-R
Stimulator: 1
Rate: 1 Hz
Pegel: 53.3 mA
0.2 ms
Einzel
5 ms
Schritt: 2
Gemittelt: Aus
Sig.Verbess.: Aus
A1 A2 A3 B5 B6 B7
Ableite-Ort A: M.abd.hall. re.
Ableite-Ort B: M.abd.hall. li.
A1
A2
A3
B5
B6
61.1mA
2 mV
Reizort | Lat1 ms | Dau ms | Amp mV | FL mVms | Temp °C
A1: Mall. med. | 3.6 | 11.4 | 8.1 | 11.7 | 37.3
A2: Kniekehle | 3.1 | 16.6 | 3.6 | 9.0
A3: Glutealfalte | 4.8 | 20.5 | 3.8 | 10.7
B5: Mall. med.
B6: Kniekehle
B7: Glutealfalte
Segment | Dist mm | Diff ms | LG m/s | Temp °C | NCV m/s
Mall. me-M.abd.ha | 150 | 3.6 | | 37.3 |
Kniekehle-Mall. me | 100 | 0.5 | 200 | 37.3 | 197
Glutealfa-Kniekehle | 180 | 1.7 | 106
Mall. me-M.abd.ha
Kniekehle-Mall. me
Glutealfa-Kniekehle

Test 3



Foot Switch: Ready / Stimulate / Stop

Stim Mode: Train / Single

Stim Freq:	2 Hz	No. in Train:	10
Stim Dur:	0.1 ms	Stim Rjct:	0.5 ms
Stim Site:	after		
Time:	11:50:30	Stop Watch:	0:10
Comment:			

Pot No.	Peak Amp mV	Amp Decr %	Area mVms	Area Decr %	Stim Level
1	7.92	0	4.83	0	221V
2	6.30	20	3.58	26	221V
3	6.17	22	3.27	32	221V
4	5.37	32	3.04	37	221V
5	5.00	37	2.87	41	221V
6	4.17	47	2.37	51	221V
7	4.36	45	2.14	56	221V
8	4.70	41	2.14	56	221V
9	3.86	51	1.91	60	221V
10	4.17	47	1.79	63	221V

2. What is your top differential diagnosis based on the findings

3. Which additional edx test could be done after test 3 to confirm your suspicion? What would be your finding that supports the diagnosis?

4. Name two differential diagnoses and the mechanism by which the disease affects test 3

5. What is the gold standard for diagnosis of this disease in adult dog?

6. Which ancillary test should be performed after EDX?

7.What complication of the diesease is associated with high mortality

Model answer

- Normal EMG (1.5 marks)
- Normal NLG (1.5 marks)
- Repetetive nerve stimulation (0.5): Decrease of the amplitude (decrement) (1 mark) from stimulation 1-6 (0.5)

2. What is your top differential diagnosis?

Correct answer: acquired (1) myasthenia gravis (1)

3. Which additional edx test could be done after test 3 to confirm your suspicion? What would be your finding that supports the diagnosis

Correct answer: Repetetive stimulation after cholinesterase-inhibitors (1.5 marks), reversal of the decrement (1.5)

(single msucle fiber stimulation)

4. Name two differential diagnoses for the findings in the edx tests and the mechanism by which the disease affects test 3

- **Botulism** (1): prevention of Ach release (1) by blocking of SNARE (1) on presynaptic nerve terminals (1)
- **Lambert Eaton Myasthenic Syndrome** (1): antibodies against voltage-gated calcium channels (VGCC) (1) on presynaptic nerve terminals (1)
- Hyperthyroidism (1) thyreotoxic myopathy (1)

5. What is the gold standard for diagnosis of this disease in adult dog?

Correct answer: Antiacteylcholine receptor antibodies (2 marks)

6. Which ancillary test should be performed?

Correct answer: Radiography of the chest (megaesophagus, thymoma) (2 marks)

7.What complication of the diesease is associated with high mortality

Correct answer: Aspiration pneumonia

Marking of the questions

- The questions are graded by the exam committee during the exam period allowing us to confer if any answers are ambiguous.
- All papers are graded anonymously.
- Negative points for wrong answers are not given. It is therefore not advisable to leave a question unanswered.
- Each part question is marked for all candidates by the same examiner to maintain consistency.
- All borderline candidates are second marked.

Assessing the assessment

- Prior to the examination, all papers are standard set by the examination committee using the modified Angoff-method. This gives us a suggested pass mark for each paper as well as identifying easy and difficult questions. This serves as a guideline for the pass mark and any adjustments which need to be made once all the results have been collated.
- Sentinel questions are compared between different examination cohorts once marking is complete to identify whether it is a particularly weak or strong cohort. This allows us to establish if new questions are more difficult than expected.
- Every question is statistically analysed for its difficulty and discrimination for that particular cohort. This allows some comparison between cohorts when questions have been re-used as well as identifying questions that may be poorly written and have resulted in a low pass rate.
- Adjustments are made to the questions or the pass mark while candidates are still anonymised.

Feedback

- All failing candidates will receive a feedback summary which will show broad subject areas where the candidate was strong or weak.
- Upon request, examiners will provide subsequent feedback on how to improve specific areas.
- All content of the exam is confidential. Therefore feedback will not go into the specifics of a question.
- For candidates that have failed three times, a one-to-one meeting will be arranged to look at the actual exam paper in detail.