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PRACTICE QUESTIONS

Neurology Specialty Examination American College of Veterinary Internal Medicine (ACVIM)

NRCC

Neurology Specialty Exam, Clinical Cases

EDITION

Demo

QUESTIONS

9

FORMAT

Limited Edition PDF

Before you begin

What this is

9 practice questions for Neurology Specialty Examination American College of Veterinary Internal Medicine (ACVIM) NRCC , each with its answer key and an explanation. Answer a question before you read its key — the explanation is worth more once you have committed.

If something looks wrong

Send us three things and we will check it:

- the exam code, NRCC
- the question number
- the email address on your order

Write to **support@mometrix.net**. We reply within one business day.

QUESTION 1

SINGLE CHOICE

A 7-year-old, M/N, Boxer dog is presented for evaluation of an acute onset of cluster seizures. Neurologic examination between events reveals an altered mental status with a left-sided menace response deficit but normal vision (verified by tracking). Fundic examination is unremarkable. MRI of the brain reveals a poorly demarcated, T2-hyperintense, contrast-enhancing mass in the right parietal/piriform lobe that crosses the midline at the level of the corpus callosum. CSF analysis is unremarkable. Which is the MOST likely diagnosis?

- ☐ A Oligodendroglioma
- ☐ B Meningioma
- ☐ C Primary CNS lymphoma
- ☒ D Gliomatosis cerebri

ANSWER D

WHY Gliomatosis cerebri (also called gliomatosis cerebri or focal glioma-like lesions) is characterized by diffuse infiltration of tumor cells through otherwise normal-appearing brain parenchyma, producing a poorly demarcated, infiltrative lesion that often crosses the midline via white matter tracts such as the corpus callosum. In Boxers, glioma is a recognized differential. Oligodendrogliomas and meningiomas are typically more well-circumscribed; meningiomas are extra-axial and dural-based, not crossing midline through white matter. Primary CNS lymphoma is possible in this breed but usually has a more mass-like, periventricular distribution and would often produce abnormal CSF. The imaging description (poorly demarcated, infiltrative, crosses midline via corpus callosum) most strongly supports gliomatosis cerebri.

QUESTION 2

SINGLE CHOICE

A 4-year-old, F/I, French Bulldog is presented for evaluation of progressive pelvic limb ataxia over the past 2 weeks. On examination, the dog is ambulatory with pelvic limb ataxia, delayed postural reactions in the pelvic limbs, and normal thoracic limb function. Spinal hyperesthesia is appreciated over the thoracolumbar junction. Neurologic localization is most consistent with a lesion in which anatomic region?

- ☐ A C1–C5 cervical spinal cord segments
- ☐ B C6–T2 cervical intumescence
- ☒ C T3–L3 thoracolumbar spinal cord segments
- ☐ D L4–S1 lumbosacral intumescence

ANSWER C

WHY The dog has signs confined to the pelvic limbs (ataxia and delayed postural reactions) with normal thoracic limbs, localizing the lesion to the T3–L3 spinal cord segments. A L4–S1 lesion would typically cause lower motor neuron signs (flaccid paresis, reduced withdrawal, hypotonia) in the pelvic limbs, and a C1–C5 or C6–T2 lesion would also produce thoracic limb deficits. The thoracolumbar hyperesthesia further supports a T3–L3 compressive lesion, which in this breed commonly represents Hansen Type I intervertebral disc disease or congenital vertebral malformations.

QUESTION 3

SINGLE CHOICE

A 3-year-old, M/I, Border Collie is presented for evaluation of generalized tonic-clonic seizures that occur approximately every 6 weeks. Between seizures the neurologic examination is normal. CBC, serum biochemistry, and fasting bile acids are within reference intervals. MRI of the brain and CSF analysis are unremarkable. Which statement BEST describes the condition?

- ☐ A The diagnosis is structural epilepsy and anticonvulsant therapy is not indicated
- ☒ B The diagnosis is idiopathic epilepsy and treatment is indicated because seizure frequency exceeds the typical threshold for initiating therapy
- ☐ C The diagnosis is reactive seizure and treatment with antiseizure medication is indicated
- ☐ D The diagnosis is idiopathic epilepsy and treatment is not indicated because the interictal period is greater than 3 months

ANSWER B

WHY Idiopathic epilepsy is a diagnosis of exclusion based on normal interictal neurologic examination, normal diagnostic investigations (CBC, biochemistry, bile acids, MRI, CSF), and consistent age of onset. Current consensus supports initiating chronic antiseizure medication in dogs with idiopathic epilepsy when seizures occur more frequently than approximately every 2–3 months, when severity or cluster activity warrants, or when postictal periods are prolonged. In this case, seizures every 6 weeks exceed that threshold and justify starting therapy. A reactive seizure would require identification of an extracranial metabolic/toxic trigger, which was excluded.

QUESTION 4

SINGLE CHOICE

A 9-year-old, F/S, Miniature Schnauzer is presented for evaluation of progressive weakness over 4 weeks. On examination, generalized appendicular weakness is present with mild muscle atrophy. The dog is ambulatory but stiff-gaited. Reflexes are preserved but diminished. The gag reflex is reduced bilaterally and regurgitation is reported. Megaesophagus is identified on thoracic radiographs. Serum acetylcholine receptor antibody titers are pending. Which is the MOST appropriate immediate therapeutic intervention while awaiting titer results?

- ☐ A Administer edrophonium IV as a therapeutic trial
- ☒ B Initiate pyridostigmine orally and feed upright
- ☐ C Initiate prednisone at immunosuppressive doses
- ☐ D Initiate phenobarbital to control generalized activity

ANSWER B

WHY The clinical presentation (older Miniature Schnauzer with generalized weakness, preserved but weak reflexes, dysphagia/regurgitation, and megaesophagus) is highly suggestive of acquired myasthenia gravis. While awaiting acetylcholine receptor antibody titers, symptomatic management with oral anticholinesterase therapy (pyridostigmine) and upright feeding to reduce aspiration risk is appropriate. Edrophonium is used as a short-acting IV diagnostic trial (Tensilon test) and is not appropriate for ongoing therapy. Immunosuppressive prednisone is reserved for confirmed cases refractory to symptomatic therapy or as adjunctive treatment, but is not first-line and may worsen megaesophagus-related complications acutely. Phenobarbital has no role in this condition.

QUESTION 5

MULTIPLE CHOICE

A 5-year-old, M/N, mixed-breed dog is presented for evaluation of acute, non-progressive, right hemiparesis with right facial paresis. MRI shows a well-demarcated, T2-hyperintense lesion in the left rostral thalamus with restricted diffusion on diffusion-weighted imaging (DWI) consistent with infarction of the left middle cerebral artery territory. Which of the following are appropriate considerations in this patient? (Choose two.)

- ☒ **A** Evaluation for an underlying cause of ischemic stroke (e.g., endocrine disease, proteinuria, cardiac disease)
- ☐ **B** Initiation of long-term oral glucocorticoids as standard treatment for canine ischemic stroke
- ☒ **C** Antiplatelet therapy (e.g., clopidogrel) may be considered based on evidence in dogs with stroke
- ☐ **D** Performing a CSF tap prior to MRI is required to confirm ischemic stroke

ANSWER A - C

WHY Canine ischemic stroke should prompt evaluation for underlying predisposing conditions, including hyperadrenocorticism, hypothyroidism, protein-losing nephropathy, hypertension, and cardiac disease. Antiplatelet therapy such as clopidogrel may be considered for secondary prevention of recurrent ischemic events in dogs based on published retrospective data. Glucocorticoids are NOT indicated as standard treatment for canine ischemic stroke, which is non-inflammatory. CSF analysis is not required to confirm ischemic stroke; MRI with DWI sequences is the diagnostic modality of choice, and CSF is typically performed only when the diagnosis is uncertain or when inflammatory disease must be excluded.

QUESTION 6

SINGLE CHOICE

A 6-year-old, M/N, German Shepherd Dog is presented for evaluation of progressive paraparesis over 6 months and recent fecal incontinence. Neurologic examination reveals ambulatory paraparesis, ataxia, and delayed pelvic limb postural reactions with normal thoracic limb findings. Spinal hyperesthesia is appreciated over the caudal lumbar region. A neurologic exam finding that would BEST differentiate an L4–S1 lesion from a T3–L3 lesion in this dog is:

- ☐ A Presence or absence of pelvic limb ataxia
- ☐ B Withdrawal reflex quality in the pelvic limbs
- ☒ C Patellar reflex quality in the pelvic limbs
- ☐ D Cutaneous trunci reflex level

ANSWER C

WHY The patellar reflex is mediated primarily by the femoral nerve, which originates from L4–L6 spinal cord segments. In an L4–S1 lesion, the patellar reflex may be diminished or absent due to involvement of L4–L6; in a T3–L3 lesion, the patellar reflex is normal or exaggerated (upper motor neuron pattern). Both lesions produce pelvic limb paresis and ataxia and can both affect the withdrawal reflex (which involves L4–S1). The cutaneous trunci reflex evaluates thoracic spinal cord segments, not L4–S1. Therefore, patellar reflex quality is the best localizing test to differentiate L4–S1 from T3–L3 in this scenario.

QUESTION 7

SINGLE CHOICE

An 11-year-old, F/S, domestic shorthair cat is presented for evaluation of a single generalized seizure. CBC, biochemistry, total T4, and blood pressure are within reference intervals. MRI reveals a well-demarcated, contrast-enhancing, extra-axial mass at the level of the temporal bone with a broad dural attachment and a dural tail sign. Which is the MOST likely diagnosis?

- ☒ **A Feline meningioma**
- ☐ B Pituitary macroadenoma
- ☐ C Feline intracranial lymphoma
- ☐ D Gliomatosis cerebri

ANSWER A

WHY Feline meningioma is the most common primary brain tumor in older cats and classically appears as a well-demarcated, contrast-enhancing, extra-axial mass with a broad dural base and a dural tail sign on MRI. Pituitary macroadenomas are located at the level of the pituitary fossa and typically cause endocrine signs (e.g., acromegaly or Cushing-like signs) in addition to neurologic signs. Feline intracranial lymphoma is typically more infiltrative and often intra-axial or periventricular. Gliomatosis cerebri is a diffuse, infiltrative glioma and is uncommon in cats.

QUESTION 8

SINGLE CHOICE

A 3-year-old, M/N, German Shepherd Dog is presented for evaluation of progressive exercise intolerance, intermittent regurgitation, and generalized muscle atrophy. The gag reflex is reduced. Megaesophagus is identified on thoracic radiographs. Serum acetylcholine receptor antibody titers are elevated. Which is the MOST likely diagnosis?

- ☒ **A** Focal myasthenia gravis with megaesophagus
- ☐ **B** Generalized myasthenia gravis
- ☐ **C** Polymyositis
- ☐ **D** Hypoadrenocorticism-associated weakness

ANSWER A

WHY Dogs with focal myasthenia gravis typically present with megaesophagus and dysphagia/regurgitation with or without mild generalized weakness, while dogs with generalized myasthenia gravis have severe, episodic, fatigable weakness in addition. In this case, exercise intolerance and generalized muscle atrophy are present, raising the question. However, classically, megaesophagus-dominant presentations with mild or absent appendicular weakness represent focal MG. Because the dominant presenting sign in this patient is megaesophagus with mild systemic signs, focal MG with megaesophagus is most likely. Polymyositis would not typically elevate AChR antibody titers and would more commonly produce CK elevation. Hypoadrenocorticism is not associated with positive AChR antibody titers or megaesophagus as a primary feature.

QUESTION 9

MULTIPLE CHOICE

A 2-year-old, M/N, domestic shorthair cat is presented for evaluation of progressive ataxia, head tremors, and behavioral changes over 3 weeks. MRI shows bilateral, symmetric T2 hyperintensity of the cerebellum and brainstem with mild contrast enhancement. CSF analysis reveals a lymphocytic pleocytosis with elevated protein. Which of the following differential diagnoses should be considered? (Choose two.)

- ☒ **A** Feline infectious peritonitis (FIP)-related meningoencephalitis
- ☒ **B** Cryptococcal meningoencephalitis
- ☐ **C** Idiopathic epilepsy with normal MRI
- ☐ **D** Cerebellar cortical abiotrophy

ANSWER **A • B**

WHY The clinical picture (young cat, progressive central neurologic signs, CSF lymphocytic pleocytosis with elevated protein, MRI inflammatory changes) is consistent with an infectious/inflammatory meningoencephalitis. FIP and cryptococcosis are both important infectious causes of feline meningoencephalitis and should be on the differential list. Idiopathic epilepsy is a disease of dogs and is not applicable here; the MRI is abnormal, so idiopathic epilepsy is not the diagnosis. Cerebellar cortical abiotrophy produces progressive cerebellar signs without inflammatory MRI changes or CSF pleocytosis and is primarily described in certain dog breeds rather than cats.