LESION LOCALIZATION

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LOCALIZATION

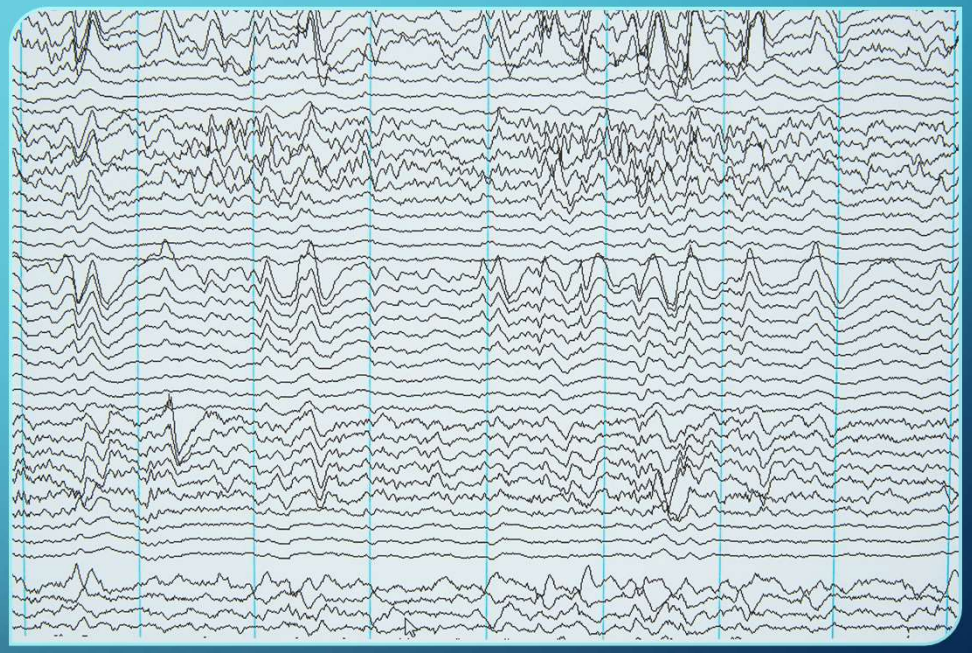
- Forebrain
- Brainstem
- Cerebellum
- Peripheral vestibular syndrome
- Myelopathies
- Cauda Equina
- Neuromuscular

FOREBRAIN

- Affected Neurological Tests
  - Mentation
  - Cranial Nerves (Menace, Nasal septum response)
  - Gait
  - Postural reactions
  - +/- Neck pain
  - (Presence of seizures)

FOREBRAIN DIFFERENTIALS

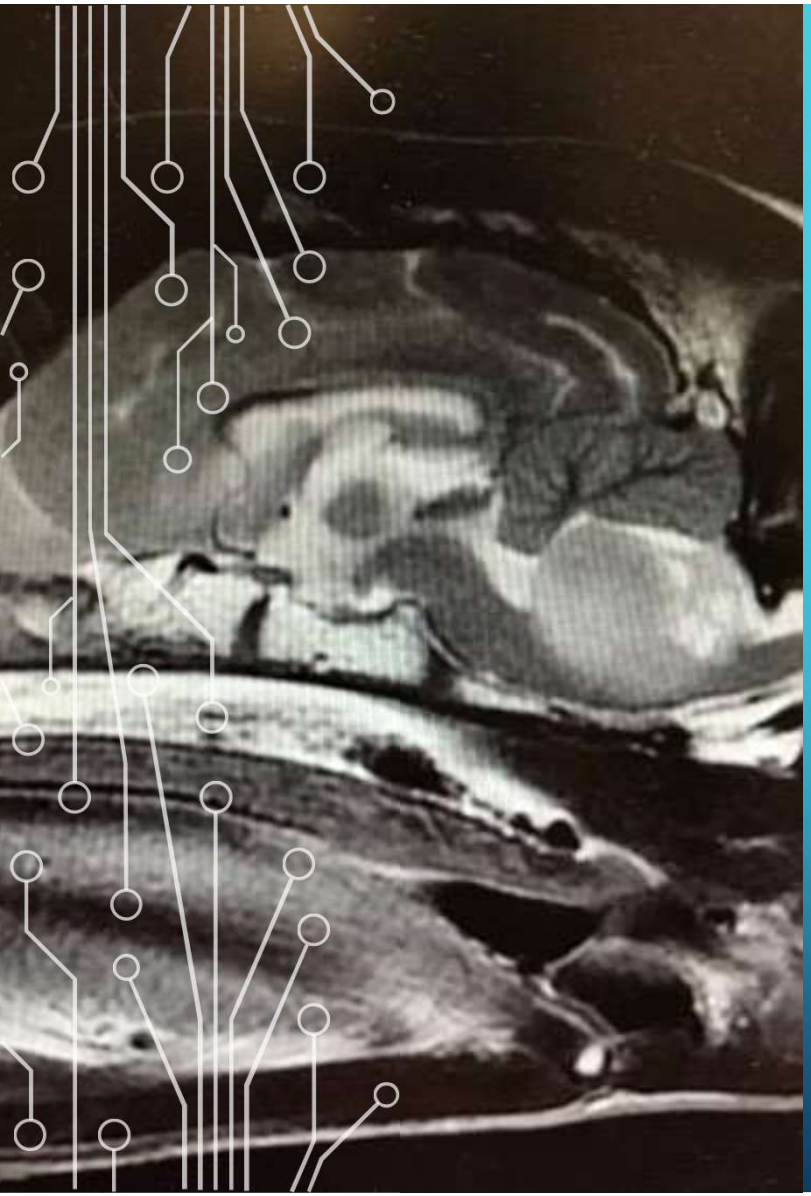
- Vascular – ischemic > hemorrhagic infarcts
- Idiopathic epilepsy
- Trauma or Toxin
- Anomalous (i.e. hydrocephalus, quadrigeminal cyst, etc.)
- Metabolic (i.e. hepatic encephalopathy, hypoglycemia, electrolytes, renal encephalopathy)
- Inflammatory (immune- mediated vs. infectious)
- Neoplasia
- Degenerative



FOREBRAIN

BRAINSTEM

- Affected neurological tests
  - Mentation
  - Cranial Nerves: Physiological nystagmus, Palpebrals, Corneals, Nystagmus, strabismus, Head tilt, Tongue, Gag, History
  - Gait and Posture
  - Postural reactions
  - +/- Pain

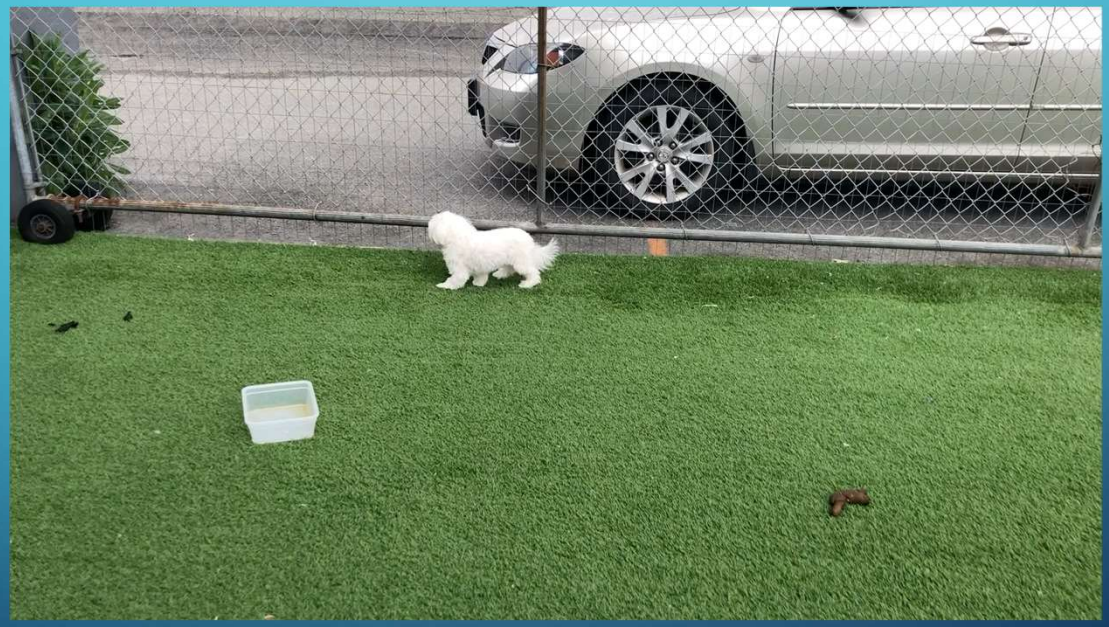


BRAINSTEM DIFFERENTIALS

- Vascular
- Traumatic
- Anomalous (4^{th} ventricular diverticulum)
- Inflammatory
- Neoplasia
- (Degenerative)

BRAINSTEM

BRAINSTEM



BRAINSTEM

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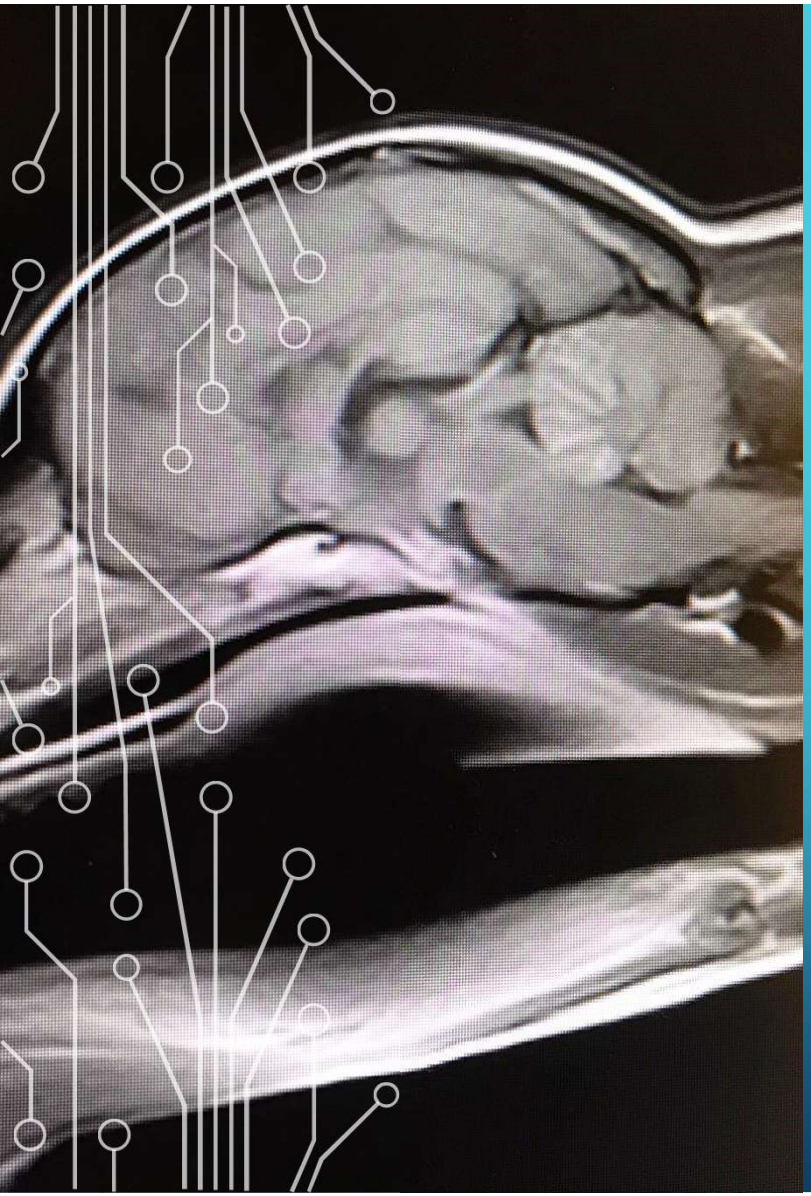


CEREBELLUM

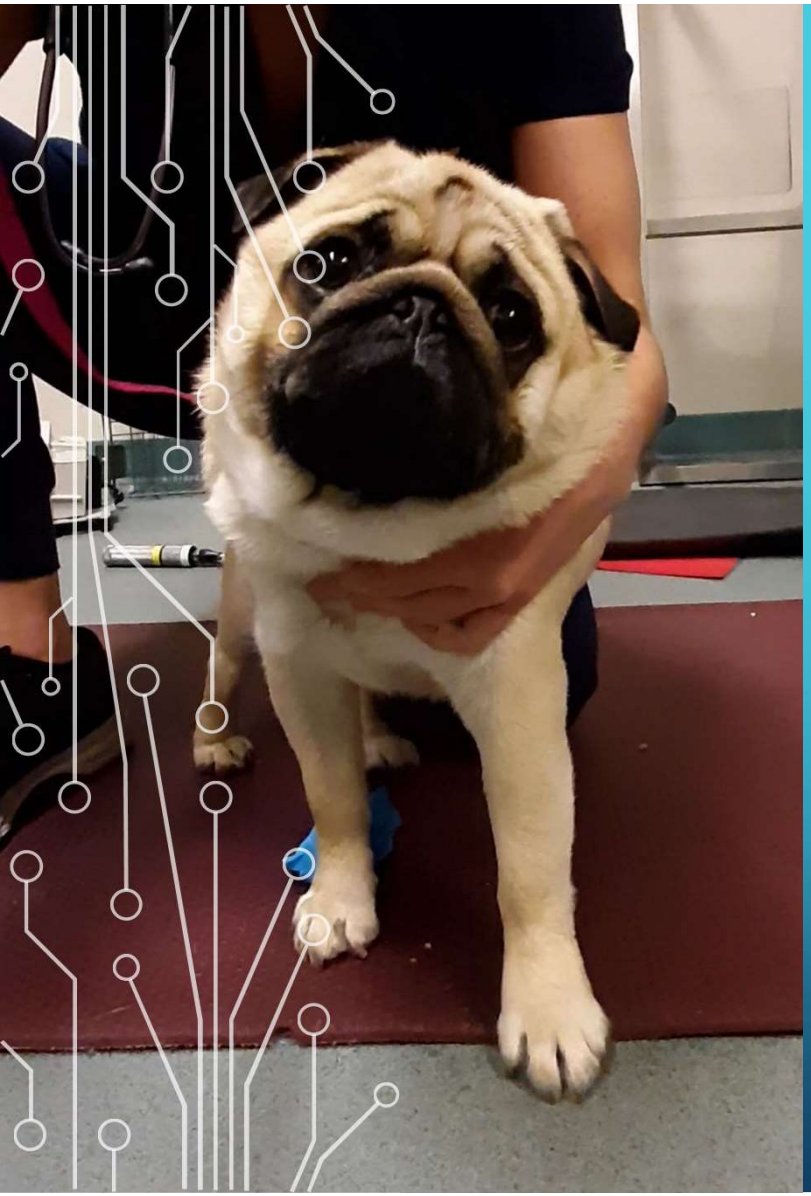
- Affected neurological tests:
  - Cranial Nerves: Menace, Strabismus, Nystagmus, Head tilt
  - Gait and Posture: Hypermetria, Intention tremors, Ataxia, Titubation
  - Postural reactions: Debate- hopping only vs. paw placement
  - +/- Neck pain

CEREBELLUM DIFFERENTIALS

- Vascular
- Trauma or Toxin (metronidazole)
- Anomalous (cortical atrophy, 4th ventricular diverticulum)
- Metabolic/ degenerative (i.e. cortical degeneration/ abiotrophy)
- Inflammatory (immune- mediated- MUE, IC vs. infectious)
- Neoplasia

PERIPHERAL VESTIBULAR SYSTEM

- Affected neurological tests
  - Cranial nerves: Strabismus, Nystagmus, Head tilt
  - Gait and Posture
  - +/- CN VII, +/- Horner's syndrome (especially cats)



PERIPHERAL VESTIBULAR SYSTEM DIFFERENTIALS

- Idiopathic (geriatric/ 'old dog' vestibular syndrome)
- Toxin (ear medications)
- (Anomalous) – congenital deafness
- Inflammatory- otitis interna
- Neoplasia
- Degenerative- primary secretory otitis media (PSOM)

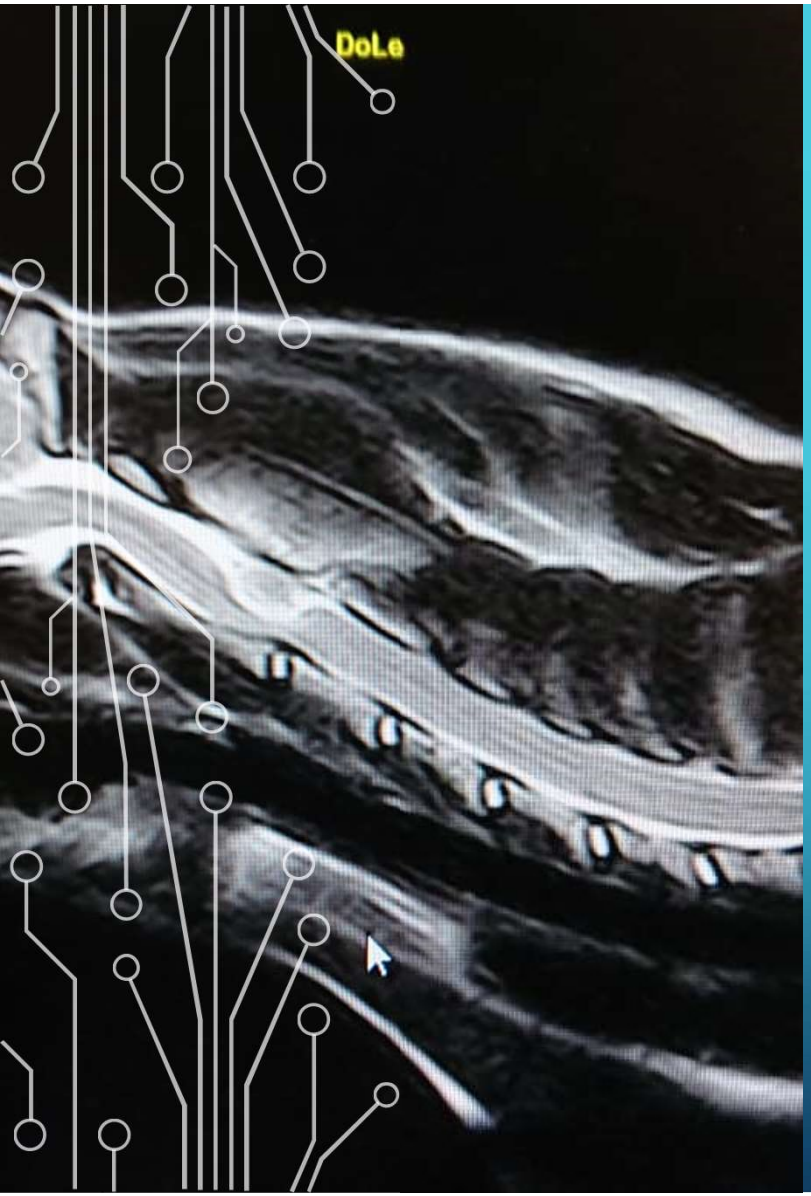
PERIPHERAL VESTIBULAR SYSTEM

C1-C5 MYELOPATHIES

- Affected neurological tests:
  - Gait and Posture: Tetraparesis, ataxia, hemiparesis
  - Postural reactions
  - +/- Spinal reflexes (withdrawals in the thoracic limbs sometimes lie)
  - +/- Neck pain
  - +/- Horner's syndrome

C6-T2 MYELOPATHIES

- Affected neurological tests
  - Gait and Posture- Two engine gait, possibility of thoracic limbs showing only paresis, vs. pelvic limbs ataxia and paresis
  - (Cranial nerves- Horner's syndrome)
  - Postural reactions
  - +/- Spinal reflexes (TL withdrawals +/- cutaneous trunci)
  - +/- Neck pain
  - +/- Nociception



CERVICAL MYELOPATHY DIFFERENTIALS

- Vascular (i.e. fibrocartilaginous embolism- FCE vs. less likely hemorrhage)
- Trauma (fracture/ luxation/ 'traumatic disc')
- Anomalous (i.e. Cervical spondylomyelopathy, spinal arachnoid diverticulum, AA instability, etc.)
- Inflammatory- infectious (diskospondylitis, other vs. immune-mediated MUE, [SRMA])
- Neoplasia
- Degenerative (intervertebral disc herniation)

CERVICAL MYELOPATHIES

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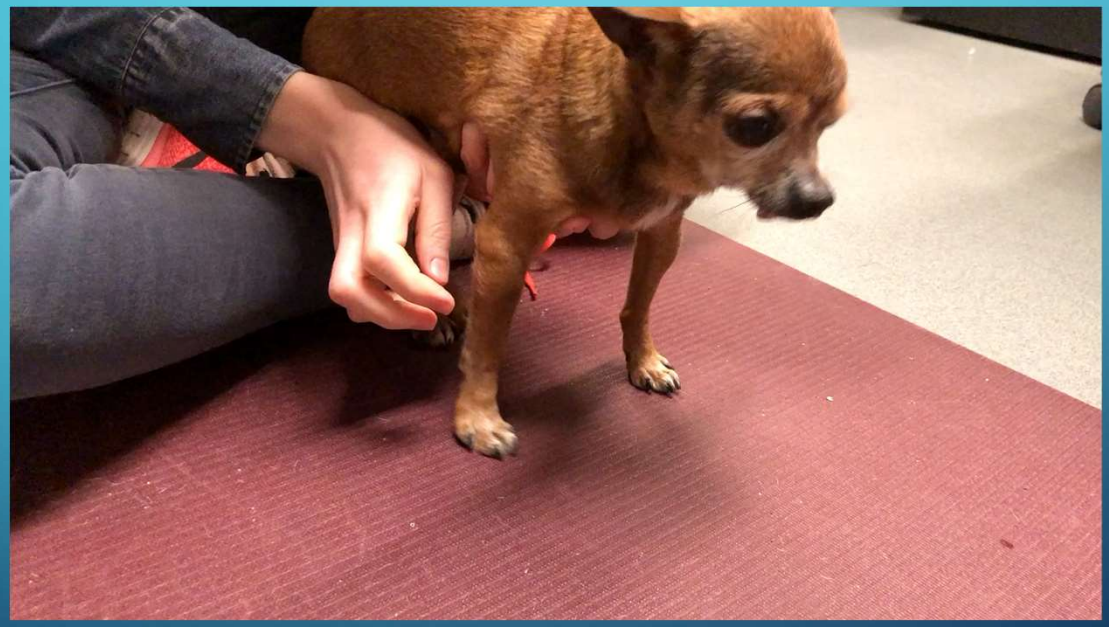
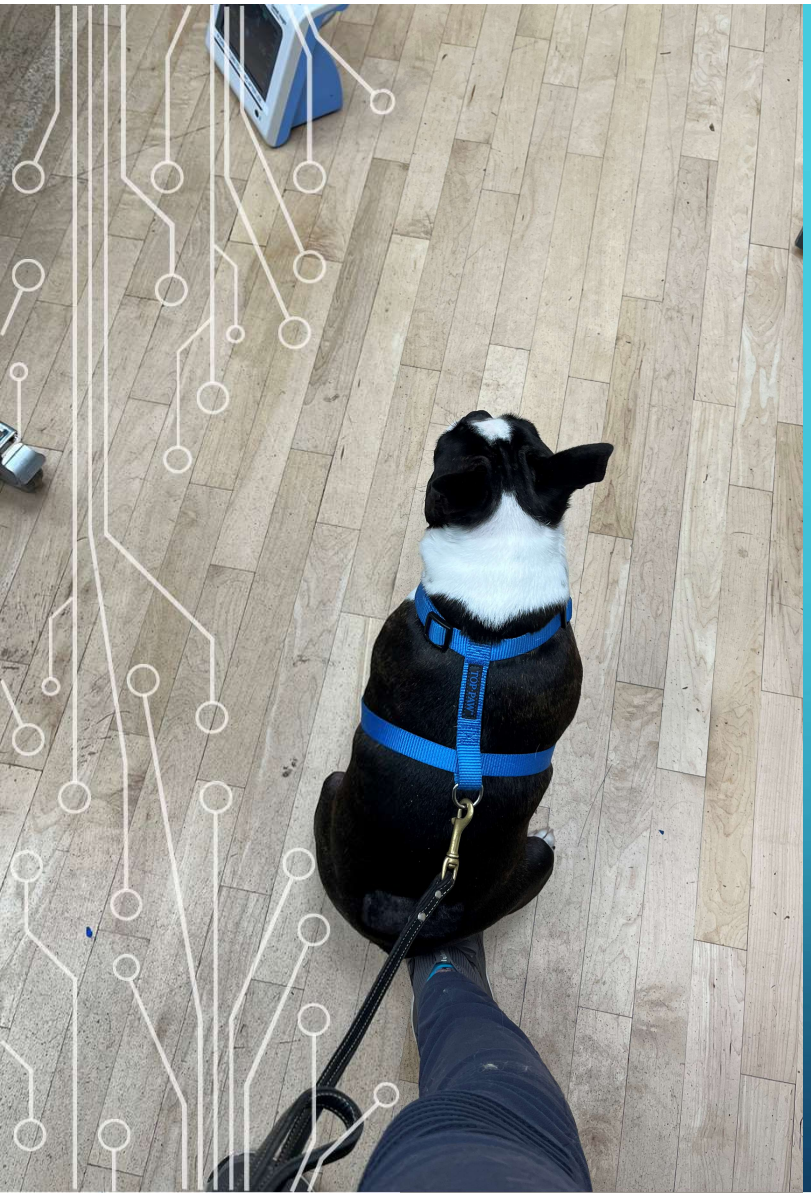
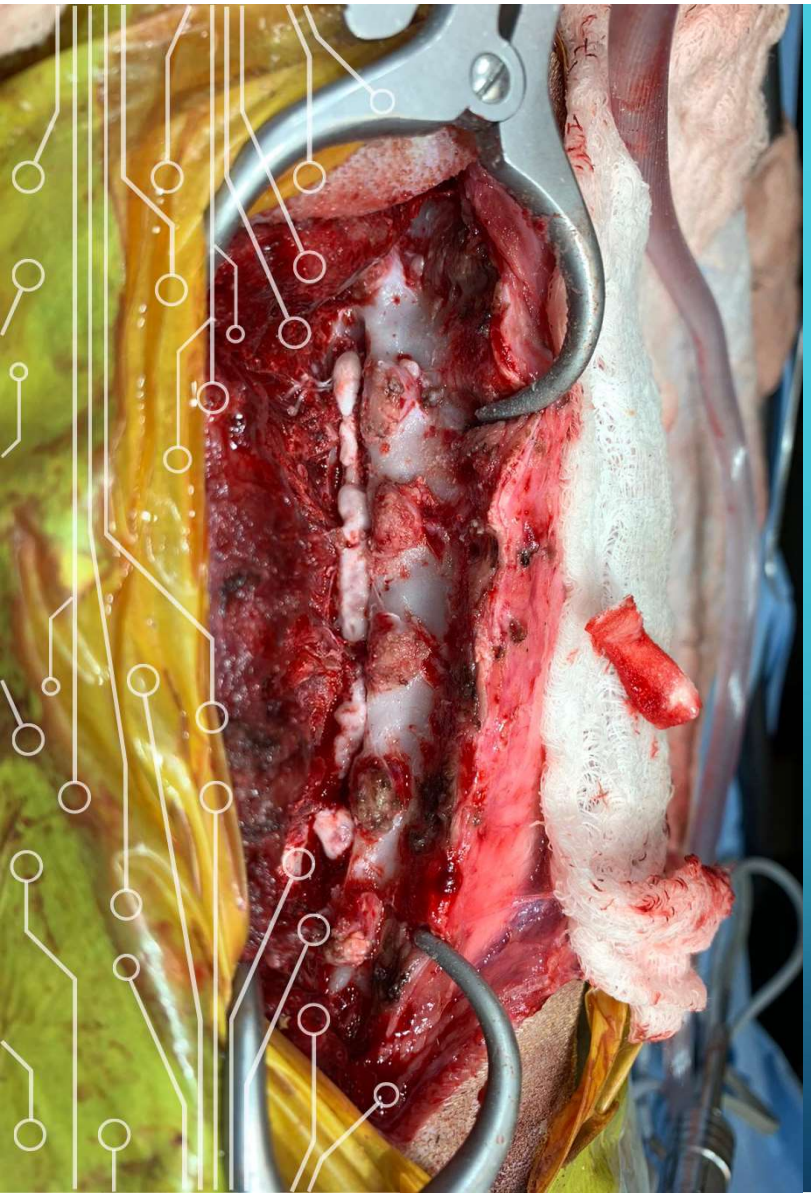


CERVICAL MYELOPATHIES



T3-L3 MYELOPATHY

- Affected neurological tests
  - Gait and Posture
  - Postural reactions (PL only)
  - +/- Cutaneous trunci
  - +/- Spinal pain
  - +/- Nociception



T3-L3 MYELOPATHY DIFFERENTIALS

- Vascular (FCE > hemorrhage)
- Trauma
- Anomalous (i.e. “pug dog myelopathy”, vertebral malformations, SAD, etc.)
- Inflammatory (infectious vs. immune- mediated)
- Neoplasia
- Degenerative (IVDH, Degenerative myelopathy)

T3-L3 MYELOPATHIES

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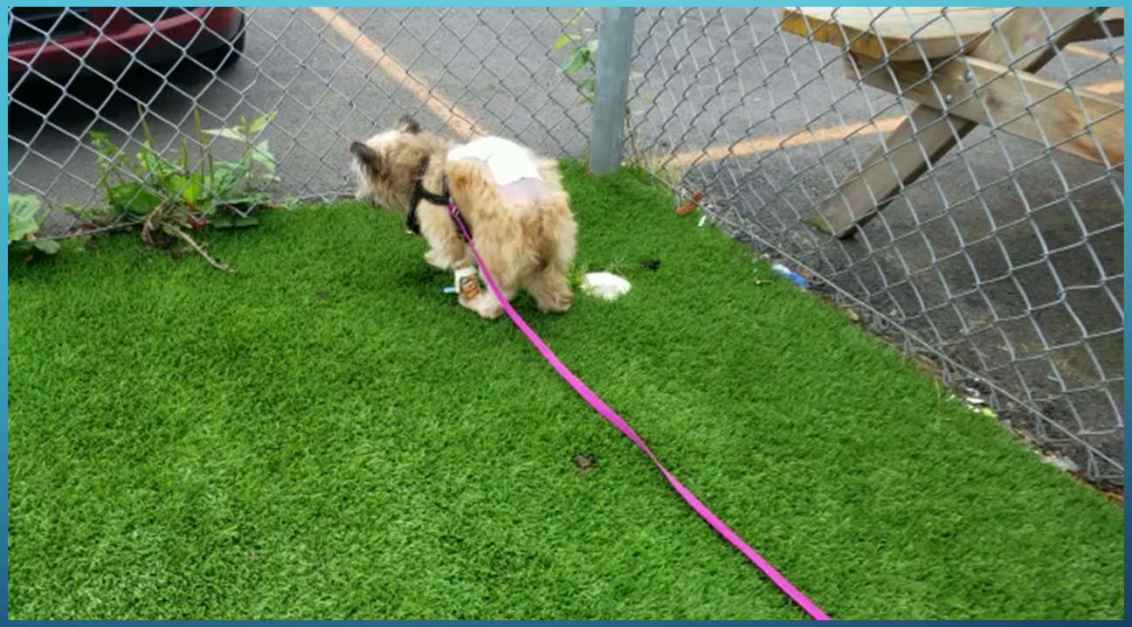
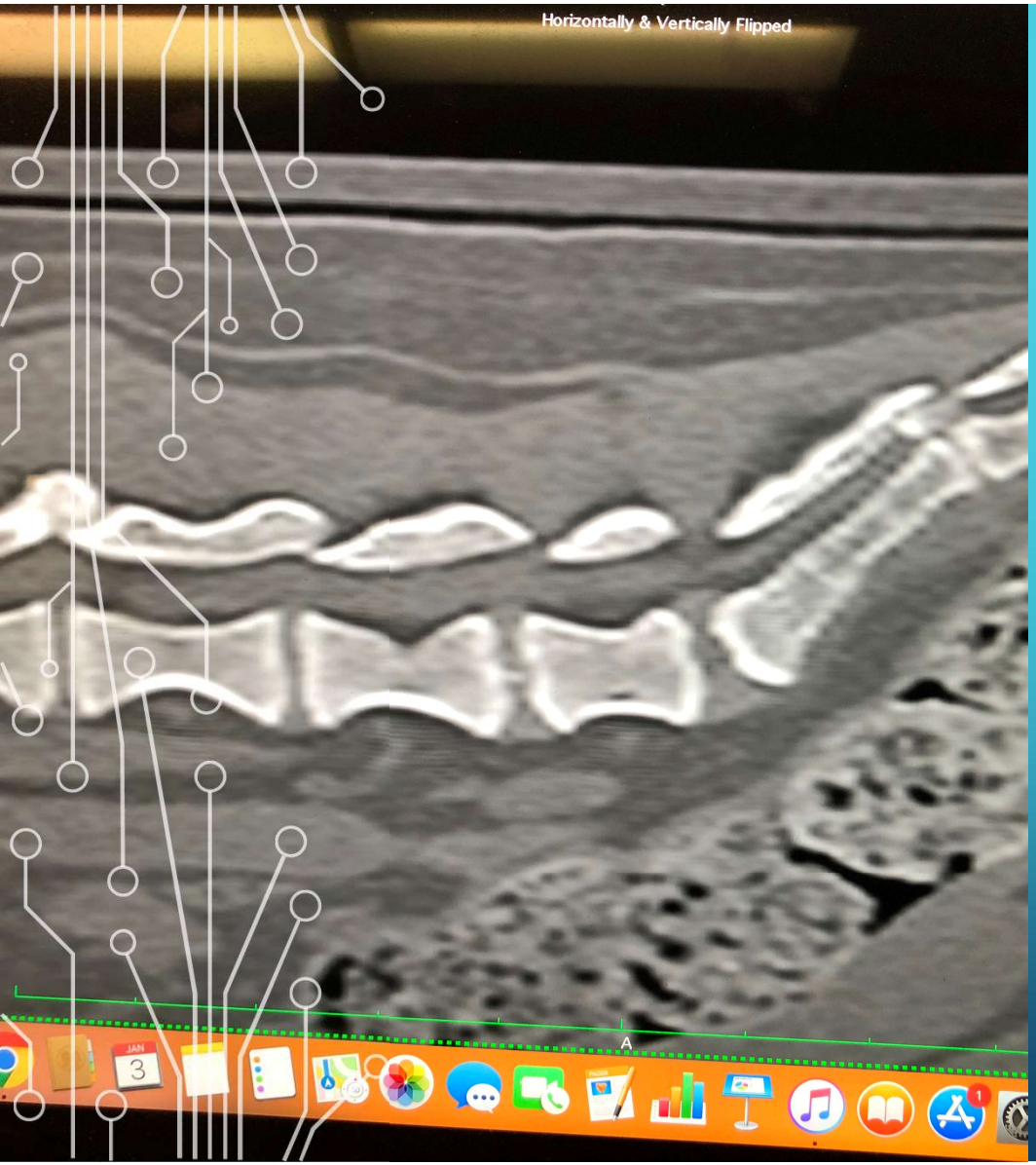
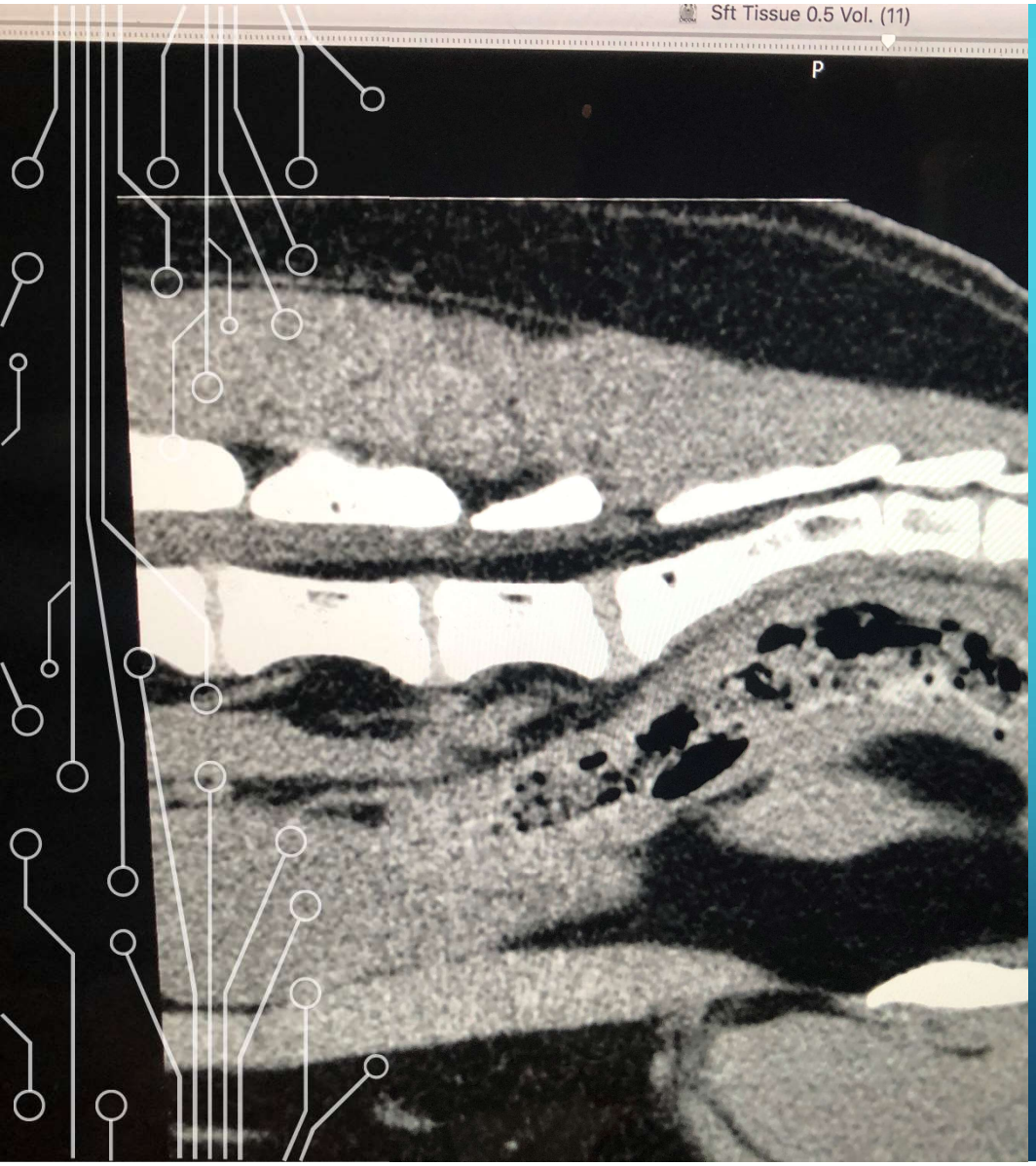


T3-L3 MYELOPATHIES



L4-S2 MYELOPATHY/ CAUDA EQUINA

- Affected neurological tests
  - Gait and Postural
  - Postural reactions
  - Spinal reflexes (Patellar, PL withdrawals, perineal)
  - +/- Pain
  - +/- Nociception (less commonly)



L4-S2 MYELOPATHY/ CAUDA EQUINA DIFFERENTIALS

- (Vascular- FCE overall less common in this area)
- Trauma
- Anomalous (OCD of the LS junction, tethered cord syndrome)
- Inflammatory (infectious vs. immune- mediated)
- Neoplasia
- Degenerative (DLSS, IVDH)

L4-S2 MYELOPATHY/ CAUDA EQUINA

NEUROMUSCULAR

- Includes neuropathies, myopathies and junctionopathies
- Affected neurological tests:
  - (Cranial nerves)
  - Gait and Posture (Tone)
  - Spinal reflexes
  - +/- Pain
  - +/- RARELY nociception

NEUROMUSCULAR DIFFERENTIALS

- (Vascular)
- “Idiopathic”
- Trauma
- Anomalous/ Degenerative
- Metabolic
- Inflammatory
- Neoplasia

NEUROMUSCULAR- MYASTHENIA GRAVIS

NEUROMUSCULAR- CUSHING'S MYOPATHY

NEUROMUSCULAR- TETANUS

NEUROMUSCULAR- DIABETIC NEUROPATHY

NEUROMUSCULAR- MYOTONIA

NEUROMUSCULAR- MYOTONIA

NEUROMUSCULAR- TICK PARALYSIS

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QUESTIONS?

PLEASE DO NOT SHARE THE VIDEOS AND PHOTOS OF PATIENTS FROM THESE SLIDES ON SOCIAL MEDIA