BUSH VETERINARY NEUROLOGY SERVICE

Welcome to the latest edition of the BVNS Neurotransmitter

Neurotransmitter

Mya's Story

W Bush, VMD, DACVIM (Neurology)

PRESENTING COMPLAINT

- Right thoracic limb sliding out to the side and occasional stumbling and knuckling on RTL
- Droopy right eye
- Possible leaning to the left and less energy than her sister

MENTATION

(level of awareness, presence of confusion)

- Quiet, but seemingly normal. She kept raising her paw for attention.

GAIT - NORMAL

MEET MYA

Mya is a seven-year-old rescued Doberman. She and her sister were placed into foster care. Since she was young, there has been a bump on the left side of the top of her head.

General exam is normal with exception of firm bony protrusion from the left frontal bone (over frontal sinus).

POSTURE

(body position, things noted by just looking at patient)

- Occasional / possible left head tilt
- Occasionally holds right thoracic more than right pelvic limbs abducted (away from midline)
- Bump over her left frontal sinus
- Ptosis on right eye

POSTURAL REACTIONS

(ability to correct position of a limb)

- Very slow paw flip test on right side (worse on the thoracic limb

CRANIAL NERVES

- Ptosis OD
- No positional strabismus when head elevated
- No inducible vestibular signs

HYPERAESTHESIA – NONE APPRECIATED

WHAT DOES IT MEAN WHEN THE GAIT IS NORMAL AND THERE IS MARKED POSTURAL DEFICIT ON THE RIGHT SIDE?

There is a lesion is within the left forebrain.

DOES THE OCCASIONAL HEAD TILT INDICATE A VESTIBULAR LESION? WHY OR WHY NOT?

The absence of a positional strabismus or any consistent vestibular makes a vestibular lesion very unlikely.

WHAT IS THE LIKELY CAUSE OF PTOSIS IN THIS CASE?

Mandibular nerve lesion involving the pterygoid muscle.

WHAT IS THE LIKELY CAUSE OF THE UNILATERAL MANDIBULAR NERVE LESION (MASTICATORY MUSCLE ATROPHY)?

Never Type 2 M autoantibodies - most often a peripheral nerve sheath tumor.

CAN YOU EASILY MAKE THIS ONE LESION?

No – I localize to the right mandibular nerve (possibly brainstem) and the left forebrain.

DIFFERENTIALS

Left forebrain (postural deficit, normal gait):Neoplasia, inflammation, malformation, unknown, infection, infarct(s)
Right mandibular nerve +/- brainstem (temporalis and pterygoid atrophy): Neoplasia (nerve sheath tumor, meningioma, lymphoma), inflammation, unknown, infection, infarct(s)

PLAN

CBC, Chem, Contrast MRI of the brain +/- CSF

RESULTS

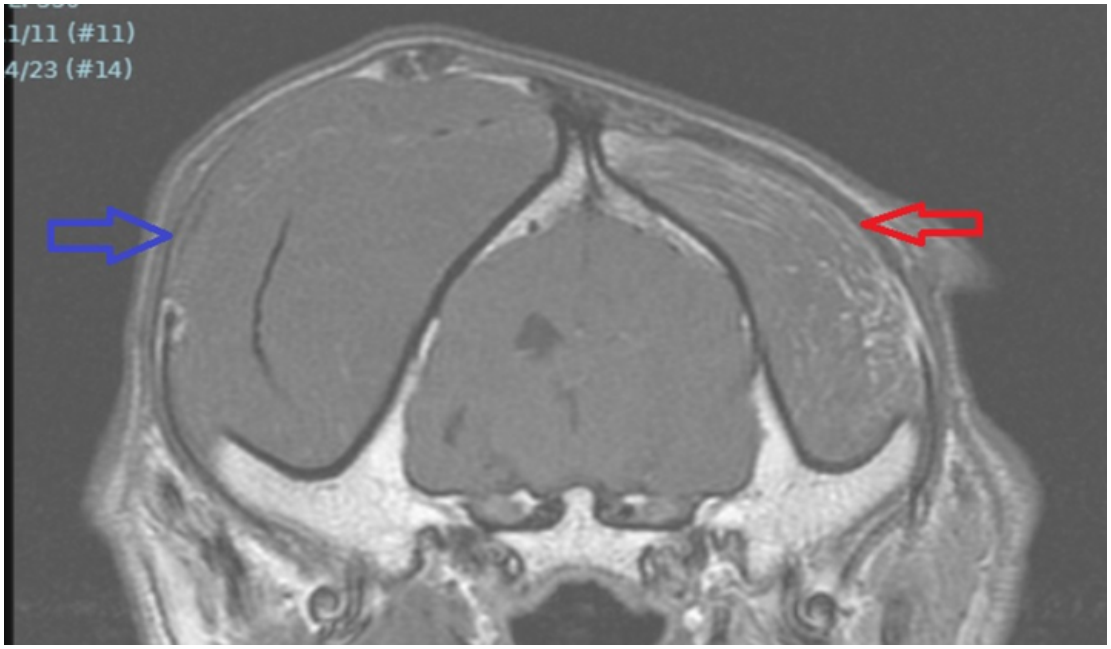
CBC, Chemistry – normal
MRI of the brain:

1. Boney lesion within left frontal bone and loss of brain from the left forebrain – past trauma most likely.
2. Masticatory muscle atrophy and no lesion noted within the brainstem or mandibular nerve– cause not determined, inflammation/infection possible, recommend CSF analysis.

CSF analysis: normal – infection and inflammation not likely

DIAGNOSIS

1. Head trauma and hydrocephalus ex vacuo (fluid where there was brain).
2. Unknown / Idiopathic right mandibular nerve lesion with neurogenic masticatory muscle atrophy.

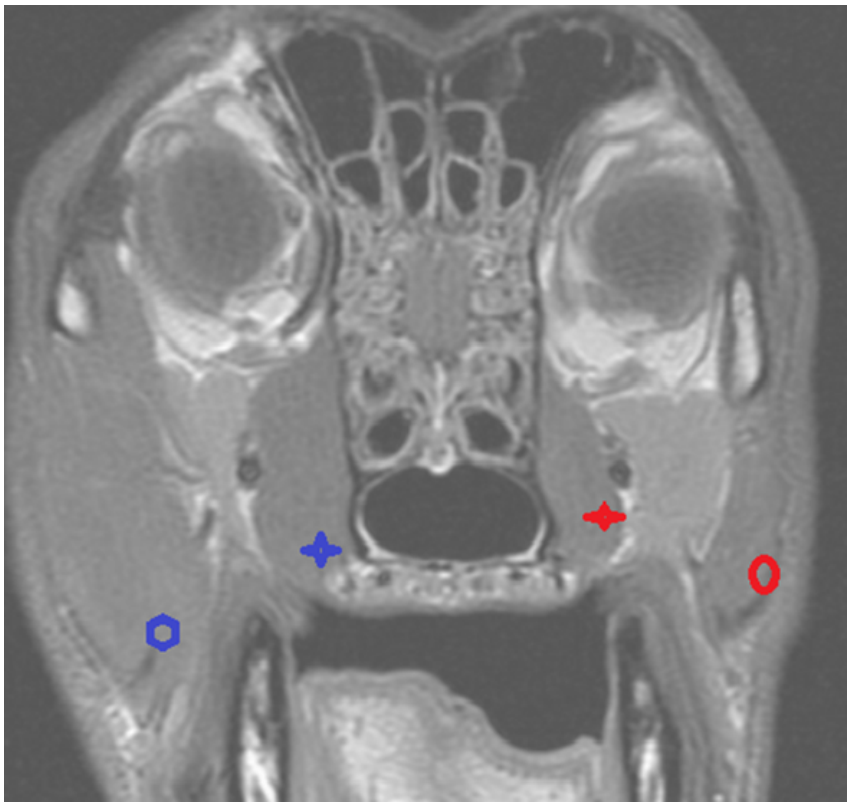


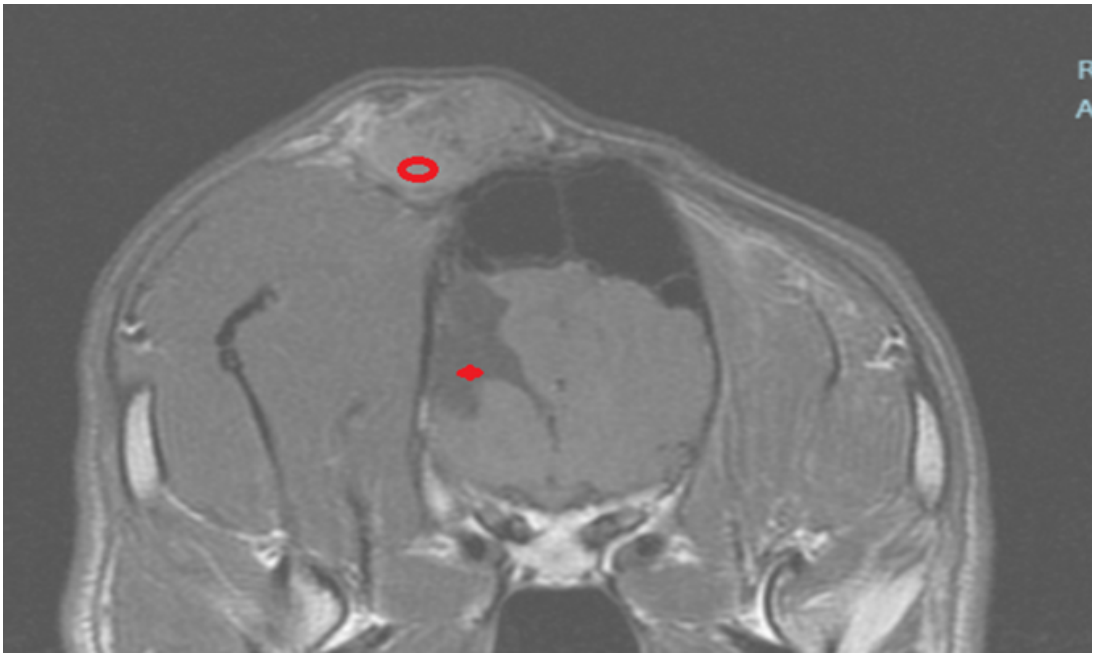
Marked temporalis muscle asymmetry on MRI:
Blue Arrow – normal temporalis muscle on left
Red Arrow – atrophied temporalis muscle on right

Red star – atrophied pterygoid muscle on right
Red circle – atrophied masseter muscle on right

Blue star – normal pterygoid muscle on left
Blue circle – normal masseter muscle on the left

Mandibular nerve lesion inferred from masticatory muscle atrophy - ptosis is from pterygoid muscle atrophy (notice how it abuts the right eye)





Red circle – boney mass over depressed left frontal sinus
Red star – fluid space in left parietal and frontal lobes

Head trauma leading to bone callus and loss of brain (hydrocephalus ex vacuo)

IMPORTANT POINTS

- Normal gait with markedly abnormal postural reactions indicates a lesion on the side opposite the postural deficit.
- Ptosis can be from pterygoid muscle atrophy.
- Elevating the head and looking for positional strabismus is a good way to evaluate for vestibular disease.
- Unilateral masticatory is never from immune-mediated masticatory myositis and often from a nerve sheath tumor.
- Multifocal localizations are confusing and often from inflammatory disease, but not always!