What Is Your Neurologic Diagnosis?

Signalment: An 8.5-year-old sexually intact Staffordshire Terrier.

History: Two weeks prior to original admission, the owners noticed muscle atrophy on the right side of the head. On the second admission 5 weeks later, the atrophy was worse, but additional signs were not noticed by the owners.

Physical examination: The only physical abnormalities noticed were severe muscle atrophy of the temporalis, masseter, digastricus, and pterygopalentine muscles on the right side of the head.

Neurologic examination

Observation

Mental	Alert	X	Depressed		Disoriented		Stupor		Coma		
Posture	Normal	X	Head tilt		Tremor		Falling				
Gait	Normal	X	Ataxia		Pelvic Limbs		All 4		Circling		
Paresis	Pelvic Limbs		Tetra		Hemi		Mono				
Other	Substantial muscle atrophy right side of head										

Postural reactions

Key: 4=exaggerated, clonus; 3=exaggerated; 2=normal; 1=diminished; 0=none; NE=not evaluated.

	LF	RF	LR	RR
Wheelbarrow	2	2		
Hopping	2	2	2	2
Ext postural thrust			2	2
Proprioceptive pos	2	2	2	1
Hemistand/walk	2	2	2	2
Placing–tactile	2	2		
Placing–visual	2	2		

Spinal reflexes

	LF	RF	LR	RR
Quadriceps			2	2
Extensor carpi	2	2		
Flexion	2	2	2	2
Crossed extensor	2	2	2	2
Perineal			2	2

Cranial nerves

	L	R		L	R
II, VII–Vision menace	2	2	VIII–Nystagmus, resting	2	2
II, III–Pupils resting	2	2	VIII–Nystagmus, change	2	2
Stim L	2	2	V–Sensation	2	2
Stim R	2	2	VII–Facial mm	2	2
II–Fundus	2	2	V, VII–Palpebral reflex	2	2
III, IV, VI–Strabismus, resting	2	2	IX, X–Gag	2	2
III, IV,VI, VIII–Strabismus, position	2	2	XII–Tongue	2	2

Comments CN

Substantial muscle atrophy on the right side attributed to damage to cranial nerve (CN) V
Enophthalmos, right eye

Sensation (Locate and describe abnormal)

Hyperesthesia	2	
Superficial pain	2	
Cutaneous reflex	2	
Deep pain	2	

What is the problem? Where is the lesion? What are the most probable causes of this problem? What is your plan to establish a diagnosis? Please turn the page.

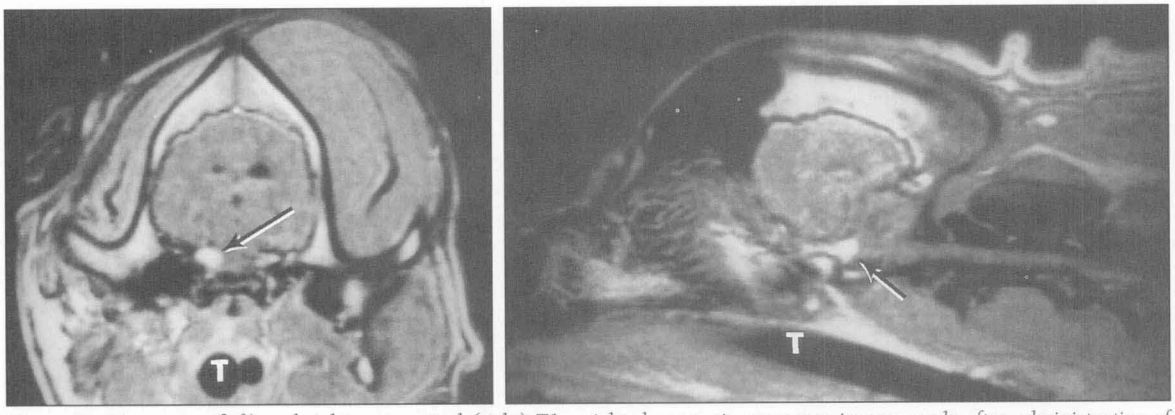

Figure 1—Transverse (left) and right parasagittal (right) T1-weighted magnetic resonance images made after administration of contrast medium. A well-defined intensely enhancing area (arrows) is evident in both views. Left—The mass is evident adjacent to the right petrous temporal bone. Notice the marked muscle atrophy and intensity of the right temporalis muscle, compared with the left muscle. Right—The mass is adjacent to the right ventrolateral portion of the calvarium. T = trachea.

Assessment

Anatomic diagnosis

Problem	Rule out location
Profound and progressive muscle atrophy of the right muscles of mastication	Right trigeminal nerve (CN V), mandibular branch
Enophthalmos of the right eye	Loss of floor of the orbit caused by profound muscle atrophy

Likely location of one lesion

CN V, mandibular branch

Etiologic diagnosis

Rule out disease process	Diagnostic plan (in order of priority)
Trigeminal neuropathy (ie, neurofibroma, trauma) Osteitis from otitis media Encephalitis Myopathy	Following preanesthetic workup protocol: 1) Electromyography (EMG) to rule out myopathy 2) CSF tap to rule out encephalitis 3) Radiography of head or computed tomography of bullae to rule out otitis media 4) Magnetic resonance imaging (MRI) of brain to rule out neoplasia

Comments: Myositis or myopathy is unlikely because of the unilateral nature of the disease. Otitis media may involve CN VIII and possibly CN VII, but is unlikely to involve CN V without the others. Cranial nerve V is not particularly susceptible to injury, and there is no history of trauma. The onset of signs was insidious, which is suggestive of a slow-to-moderate growing neoplasia, possibly a plaque-like meningioma or a neurofibroma.

Test results

Abnormal laboratory data: The preanesthetic data were suggestive of mild dehydration.

Imaging and electrodiagnostic procedures: EMG revealed denervation of affected muscle group. CT did not reveal lesions of the bullae. MRI of the brain revealed a linear contrast-enhancing mass in the trigeminal canal (Fig 1).

Presumptive diagnosis: Neurofibroma of CN V.

Prognosis with treatment: Poor prognosis for a cure, but good quality of life possible for several months to a year if treated with radiation.

Therapeutic plan: Return in 3 weeks to begin radiotherapy.

This report was submitted by Stephen T. Simpson, DVM, MS, and Lisa Klopp, DVM, from the Department of Small Animal Medicine and Surgery, and John T. Hathcock, DVM, MS,Department of Radiology, College of Veterinary Medicine, Auburn University, AL 36849.

This feature is sponsored by the American College of Veterinary Internal Medicine on behalf of the specialty of neurology. Contributors to this feature should contact Dr. J. H. Audin (1-800/248-2862, ext 258) for case submission forms. Completed forms will be sent to Dr. Stephen Simpson at Auburn University for his review.