My horse has what?
Temporohyoid Osteoarthropathy

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It can be frustrating for an owner to observe seemingly unexplainable changes in his or her horse’s behavior, and alarming to watch these changes progress to acute neurologic symptoms. Frustration and alarm may turn to bewilderment when the veterinarian diagnoses the horse with temporohyoid osteoarthropathy.

Temporohyoid osteoarthropathy (THO) is a progressive disease of the middle ear, the temporohyoid joint, the stylohyoid bone, and the base of the skull. There is no age, breed, or sex predilection. The underlying cause of THO is not fully understood. There are many theories as to the cause of THO such as an extension of inflammation and infection from otitis media-interna (inflammation of the inner/middle ear) or guttural pouch infection, trauma, and osteoarthritis. Relatively few horses with THO have a history or evidence of a guttural pouch infection or otitis at the time of the diagnosis. It is possible that THO is the result of degenerative joint disease rather than a bacterial ear infection or guttural pouch infection. Regardless of the cause, inflammation induces bony proliferation at the articulation of the stylohyoid bone with the petrous portion of the temporal bone (located at the base of the skull—see photo). This results in the fusion of the temporohyoid joint. The hyoid apparatus is connected to the tongue and larynx. Therefore fusion of the temporohyoid joint reduces the mobility of these structures. A stress fracture of the petrous temporal bone and/or stylohyoid bone can result from the impaired mobility. This can be caused by eating, vocalization, or normal tongue movement.

Initial symptoms for THO are unfortunately non-specific signs that can point to a variety of possible medical issues or even non-medical behavior problems. Head tossing, ear rubbing, refusing to take the bit, refusing to position the head properly when ridden, pain on palpation at the base of the ear, and non-specific behavior changes are early clinical signs. As it progresses, this disease can cause acute neurologic signs such as ataxia (loss of balance), head tilt, nystagmus (involuntary oscillation of the eyes), and facial nerve damage. Signs of facial nerve damage include the following: drooping (partial or complete paralysis) of the ear on the affected side, deviation of the muzzle away from the affected side, decreased tear production, and the inability to completely close the eyelids on the affected side. Corneal ulceration is a common result of the decreased tear production and the inability to blink properly. Dysphagia (inability to swallow properly) can occur but is rare. Neurologic signs are seen following the development of a stress fracture of the petrous temporal bone or the stylohyoid bone.

Diagnosis is made through an endoscopic examination of the stylohyoid bone and its articulation (temporohyoid joint) within the guttural pouch. Imaging modalities such as skull radiographs, CT, and MRI are also useful diagnostic tools that can be used.

There are two surgical treatments for THO—a partial stylohyoid ostectomy or a ceratohyoidectomy (removal of the ceratothyoide bone). Removal of a portion of the mid body of the stylohyoid bone (partial stylohyoid ostectomy) results in a fibrous non-union in the
bone that should interrupt hyoid forces to the temporohyoid joint is one option. Potential complications include damaging the lingual artery, the hypoglossal or facial nerve, and regrowth of the stylohyoid bone at the surgery site resulting in a recurrence of the clinical signs.

Removal of the ceratohyoid bone removes the mechanical stress on the fused temporohyoid joint also. The complication rate is much lower with this surgery compared to the partial stylohyoidectomy. Ceratohyoidectomy is safer, less technically demanding, and provides a better surgical alternative.

The prognosis and the length of time that the horse will need to convalesce is based on the severity of the clinical signs at the time of diagnosis. In general the prognosis is good. Most horses will return to their intended use. There are cases where the neurologic signs may persist. Rehabilitation can be as long as 2 years but many horses will have an improvement in the clinical signs within 30 to 60 days.

An important consideration is that surgical intervention should not be delayed. Rapid intervention is the key to a successful outcome.