

VESTIBULAR DISEASE

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Distinguishing central from peripheral vestibular disease is one of the easier tasks in veterinary neurology. Thankfully so, as both forms of vestibular disease share the same dramatic element. Often acutely, an owner will discover her pet looking upside down, or worse yet, rolling. Rarely will you have such an opportunity to quickly diagnose the problem and, in the case of peripheral vestibular disease, reassure the owner.

Universal signs of vestibular disease are head tilt, falling, strabismus, and nystagmus. These signs alone will not distinguish lesion location, but are almost always caused by a lesion in either the peripheral or central vestibular system.

Peripheral vestibular disease involves the labyrinth in the petrosal bone, and the vestibulocochlear nerve (CN VIII). Because of the proximity of sympathetic branches of the oculomotor nerve (CN III) and the facial nerve (CN VII), they can be affected in diseases of this area.

Peripheral vestibular disease is common in veterinary medicine, especially in older dogs (so called Idiopathic Old Dog Vestibular Disease), or in any dog with inner or middle ear disease. Idiopathic Feline Vestibular Syndrome is similar to Old Dog Vestibular Disease in its benign, idiopathic origin and 2-3 week course to recovery. Except in rare cases of neoplasia of the ear or CN VIII, peripheral vestibular disease generally carries a good prognosis.

Signs of peripheral vestibular disease are (including the universal signs), horizontal or rotary nystagmus that does not change when the position of the head is changed, an ataxia without proprioceptive deficits, and normal mental status (alert, aware). Less commonly a facial paralysis, deafness, and or Horner's may be seen. Dogs with peripheral vestibular disease rarely have an urge to roll continuously.

Central Vestibular Disease occurs when the lesion lies in the brainstem or in the pathway of CN VIII to the cerebellum. Because the trigeminal nerve (CN V), the abducent nerve (CN VI), and the facial nerve (CN VIII) enter the brainstem close to the eighth cranial nerve, they may be affected as well. Additionally, the proprioceptive pathways, and limbic system may be affected if the lesion in the brainstem is large.

Central vestibular disease is less common than peripheral and can be caused by space occupying lesions as well as focal inflammation. Because there is little room for swelling in the brainstem, small lesions can cause dramatic clinical signs. Focal granulomatous meningoencephalitis in small breed dogs frequently affects the brainstem, and can mimic a tumor.

Signs of central vestibular disease are (including the universal signs), a vertical or changing nystagmus (changes direction or type with a change in head position), proprioceptive deficits, and altered mental status. Less commonly, but also distinguishing, are lack of facial sensation or jaw tone and medial strabismus (resting). It is not unusual for a dog with central vestibular disease to feel a profound urge to roll.

It is important to remember that dogs with severe peripheral vestibular disease may be profoundly awkward, and postural reactions may be difficult to assess. Additionally, the nausea that accompanies both peripheral and central vestibular disease may cause lethargy, which should not be confused with mental dullness. Because recovery from peripheral vestibular disease is generally fairly rapid, if there is a question as to whether proprioceptive deficits or mental dullness exists, wait 24-48 hours and reassess. If the lesion is in the peripheral vestibular system, you should already be seeing marked improvement. With central disease, signs may be getting worse.

Most of the signs of vestibular disease are on the same side as the lesion, the head tilt, facial paralysis, or hemiparesis is usually ipsilateral. There are exceptions with specific lesions but it is much more important to distinguish central from peripheral than to remember these rules. If you localize the lesion to the periphery, you are going to look in both ears. If the lesion is central, advanced diagnostics, or the specialists will localize it for you.

It is easy to become as alarmed as an owner when presented with a frightened and flailing vestibular patient. Remembering the three main signs associated with central vestibular disease (changing or vertical nystagmus, proprioceptive deficits, and altered mental status) will allow you to quickly assess the situation. In the case of the idiopathic peripheral syndromes of cats and dogs, a couple days of quiet darkness will work wonders, and you will look like a hero for "curing" the patient. In the less common cases of central vestibular disease, a quick referral, prior to the administration of steroids, will make achieving a diagnosis easier.