



# Ataxia

## ("Drunken"-Appearing Gait or Movement)

### Basics

#### OVERVIEW

- Incoordinated or "drunken"-appearing gait or movement; incoordination of the limbs, head, and/or trunk
- Three clinical types of ataxia may be seen, based on location of nervous system abnormality: (1) sensory or proprioceptive abnormality in which the normal subconscious awareness of the location of the limbs and movement is altered (known as a "proprioceptive disorder"); (2) inner ear or brainstem abnormality in which the pet's sense of balance is altered (known as a "vestibular disorder"); and (3) abnormality of part of the brain, the cerebellum, in which limb movements are not coordinated and may be exaggerated and tremors of the head are present (known as a "cerebellar disorder"); all clinical types produce changes in limb coordination, but vestibular and cerebellar ataxia also produce changes in head and neck movement
- The spine is composed of multiple bones with disks (intervertebral disks) located in between adjacent bones (vertebrae); the disks act as shock absorbers and allow movement of the spine; the vertebrae are named according to their location—cervical vertebrae are located in the neck and are numbered as cervical vertebrae one through seven or C1–C7; thoracic vertebrae are located from the area of the shoulders to the end of the ribs and are numbered as thoracic vertebrae one through thirteen or T1–T13; lumbar vertebrae start at the end of the ribs and continue to the pelvis and are numbered as lumbar vertebrae one through seven or L1–L7; the remaining vertebrae are the sacral and coccygeal (tail) vertebrae

#### SIGNALMENT/DESCRIPTION OF PET

##### Species

- Dogs
- Cats

#### SIGNS/OBSERVED CHANGES IN THE PET

- "Drunken"-appearing gait or movement
- Abnormal movements of the eyes
- Wide stance
- Head tilt—vestibular disorder
- Falling or rolling—vestibular disorder
- "Goose-stepping"—cerebellar disorder

#### CAUSES

##### Nervous System Causes

### ***Spinal Cord (Leading to a Sensory or Proprioceptive Disorder)***

- Degenerative disorder—loss of nervous tissue in the spinal cord (known as “degenerative myelopathy”) in old German shepherd dogs and Pembroke Welsh corgis
- Disorders involving blood vessels (vascular disorders)—condition in which a piece of cartilage breaks off the intervertebral disk and travels in a blood vessel until it blocks blood flow to the spinal cord (known as “fibrocartilaginous embolic myelopathy”)
- Structural abnormalities of the spine (vertebrae) and spinal cord
- Cancer or tumors—multiple myeloma and cancer that spreads (known as “metastasis”) to the spine; primary bone tumors; meningioma; others
- Infectious—bacterial or fungal infection of the intervertebral disks and adjacent bone of the spine (vertebral bodies; condition known as “diskospondylitis”); inflammation of the spinal cord (known as “myelitis”)
- Trauma to the spinal cord—intervertebral disk disease; fracture or luxation of the spine; condition in which the vertebrae in the neck are malformed, leading to narrowing of the spinal canal, or excessive mobility with resulting pressure on the spinal cord (known as “cervical spondylomyelopathy or wobblers syndrome”)

### ***Vestibular—Peripheral Nervous System (Involving the Inner Ear)***

- Infectious disease—middle or inner ear infection (known as “otitis media/interna”); *Cryptococcus* granuloma in cats
- Unknown cause (so-called “idiopathic disease”)—geriatric vestibular disease in dogs; idiopathic vestibular syndrome in cats; inflammatory masses that develop from the middle ear or eustachian tube (known as “nasopharyngeal polyps”) in cats
- Metabolic—inadequate levels of thyroid hormone (known as “hypothyroidism”)
- Cancer or tumors—squamous cell carcinoma, bone tumors
- Trauma

### ***Vestibular—Central Nervous System (Involving the Brainstem)***

- Infectious disease—feline infectious peritonitis (FIP); canine distemper virus; rickettsial diseases
- Inflammatory, idiopathic (unknown cause), or immune-mediated disorders
- Nutritional—thiamine deficiency (thiamine is a B vitamin)
- Toxic—metronidazole (an antibiotic)

### ***Cerebellar***

- Degenerative—loss of nervous tissue in the cerebellum (dogs—Kerry blue terriers, Gordon setters, rough-coated collies, Australian kelpies, Airedale terriers, Bernese mountain dogs, Finnish harriers, Brittanys, border collies, beagles, Samoyeds, wirehaired fox terriers, Labrador retrievers, Great Danes, chow chows, Rhodesian ridgebacks; cats—domestic shorthairs); diseases in which normal body metabolism for certain compounds is altered (known as “storage diseases”) often have involvement of the cerebellum
- Structural abnormalities of the cerebellum—underdevelopment of the cerebellum (known as “cerebellar hypoplasia”) secondary to perinatal infection with panleukopenia virus (cats); malformed cerebellum due to herpesvirus infection (newborn puppies); arachnoid or epidermoid cyst located near fourth ventricle
- Tumor or cancer—any tumor of the central nervous system (primary or secondary) localized to the cerebellum
- Infectious disease—canine distemper virus; feline infectious peritonitis; and any other central nervous system infection affecting the cerebellum
- Inflammatory, idiopathic (unknown cause), or immune-mediated disorders
- Toxic—metronidazole (an antibiotic)

### ***Metabolic Causes***

- Low red blood cell (RBC) count (known as “anemia”)
- RBC count above the normal ranges (known as “polycythemia”)
- Electrolyte disturbances—especially low levels of potassium in the blood (known as “hypokalemia”), low levels of calcium in the blood (known as “hypocalcemia”), and low levels of sugar or glucose in the blood (known as “hypoglycemia”)

### ***Miscellaneous Causes***

- Medications—acepromazine; antihistamines; anti-seizure medications
- Breathing difficulties
- Heart and circulatory difficulties

## RISK FACTORS

- Intervertebral disk disease—dachshunds, poodles, cocker spaniels, and beagles
- Wobbler syndrome (also known as “cervical spondylomyelopathy”)—Doberman pinschers and Great Danes
- Fibrocartilaginous embolism (condition in which a piece of cartilage breaks off the intervertebral disk and travels in the blood vessel until it blocks blood flow to the spinal cord)—young, large-breed dogs and miniature schnauzers
- Underdevelopment of the dens, part of the second cervical vertebra (known as “dens hypoplasia”) and dislocation of the joint between the first and second cervical vertebra (condition known as “atlantoaxial luxation”)—small-breed dogs, poodles
- Chiari-like malformation—Cavalier King Charles spaniels, small-breed dogs

## Treatment

### HEALTH CARE

- Usually outpatient, depending on severity and sudden (acute) onset of clinical signs
- Avoid drugs that could be contributing to the problem; may not be possible in pets on medications to control seizures

### ACTIVITY

- Exercise—decrease or restrict if spinal cord disease is involved

## Medications

- Not recommended until the source or cause of the problem is identified

## Follow-Up Care

### PATIENT MONITORING

- Periodic examinations (including the nervous system) to assess condition
- Monitor gait for increasing dysfunction or weakness; if gait or weakness worsens or paralysis develops, other testing is warranted

### PREVENTIONS AND AVOIDANCE

- Avoid drugs that could be contributing to the problem; may not be possible in pets on medications to control seizures

### POSSIBLE COMPLICATIONS

- Spinal cord—progression to weakness and possibly paralysis
- Low blood sugar (hypoglycemia)—seizures
- Cerebellar disease—head tremors and bobbing
- Brainstem disease—stupor, coma, death

### EXPECTED COURSE AND PROGNOSIS

- Depend on underlying cause

## Key Points

- Incoordinated or “drunken”-appearing gait or movement; incoordination of the limbs, head, and/or trunk
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