

# FACIAL NERVE PARESIS/PARALYSIS

## BASICS

### OVERVIEW

- Dysfunction of the facial nerve, causing weakness (known as “paresis”) or paralysis of the muscles of the ears, eyelids, lips, and/or nostrils
- The facial nerve is the seventh cranial nerve (known as cranial nerve VII); the cranial nerves are the nerves that originate in the brain

### SIGNALMENT/DESCRIPTION of ANIMAL

#### **Species**

- Dogs and cats

#### **Breed Predispositions**

- Paralysis of unknown cause (so called “idiopathic paralysis”)—cocker spaniels, Pembroke Welsh corgis, boxers, English setters, and domestic longhair cats

#### **Mean Age and Range**

- Adults

### SIGNS/OBSERVED CHANGES in the ANIMAL

- Messy eating; food left around mouth; food falling from the side of mouth
- Excessive drooling
- Lack of symmetry of the face
- Eye—inability to close the eyelids; may have discharge containing mucus and/or pus; may have inflammation of the moist lining of the eye (known as “conjunctivitis”) or inflammation of the cornea (known as “keratitis”)
- Drooping of the ear and lip on the same side of the head
- Collapse of the nostril
- Decreased or absent reflexes of the eyes and eyelids (menace response and palpebral reflex)
- Long-term (chronic) facial nerve paresis/paralysis—patient may have deviation of the face toward the affected side due to scarring of the muscles of the face (known as “muscle fibrosis”)
- Occasionally spasms may be observed in half of the face; these patients have a “grinning” appearance to one side of the face—at times the face will appear normal, only to begin “grinning” appearance again
- When secondary to brainstem disease—altered mentation (such as drowsiness or sleepiness [known as “somnia”]) or stupor); other cranial nerve and gait abnormalities may be noted

### CAUSES

#### **One-Sided (Unilateral) Peripheral Facial Nerve Weakness or Paralysis**

- Unknown cause (so called “idiopathic disease”)
- Metabolic disease—inadequate levels of thyroid hormone (known as “hypothyroidism”)
- Inflammatory disease—inflammation of the middle ear or inner ear (known as “otitis media-interna”) in dogs and cats; inflammatory masses that develop from the middle ear or eustachian tube (known as “nasopharyngeal polyps”) in cats
- Tumors or cancer
- Trauma—fracture of the skull near the ear; injury to the facial nerve as it leaves the skull, near the ear
- Secondary to surgical removal of the external ear canal (so called “iatrogenic disease”)

#### **Two-Sided (Bilateral) Peripheral Facial Nerve Weakness or Paralysis**

- Unknown cause (so called “idiopathic disease”)—rare
- Inflammatory and immune-mediated disease—inflammation of several nerve roots and nerves (known as “polyradiculoneuritis”), including coonhound paralysis; diseases involving a number of nerves (known as “polyneuropathies”), myasthenia gravis (a disorder of neuromuscular transmission characterized by muscular weakness and excessive fatigue)
- Metabolic disorder—disease involving multiple nerves related to the presence of cancer somewhere in the body (known as “paraneoplastic polyneuropathy”)
- Toxic disorder—botulism
- Tumor of the pituitary gland
- Infectious disease—Lyme disease (borreliosis) in people; not proven in dogs at this time

#### **Central Nervous System Problems that Lead to Facial Nerve Weakness or Paralysis**

- Most are one-sided (unilateral) facial nerve weakness (paresis) or paralysis
- Inflammatory disease—infectious disease (such as viral, bacterial, fungal, rickettsial, or protozoal infection) and noninfectious disease (such as inflammation of the brain and spinal cord and the membranes covering them [known as “meninges”]) characterized by nodular, inflammatory lesions [known as “granulomatous meningoencephalomyelitis”]

- Tumor or cancer—primary brain tumor; cancer that has spread to the brain (known as “metastatic cancer”)

#### **RISK FACTORS**

- Long-term (chronic) ear disease

## **TREATMENT**

#### **HEALTH CARE**

- Outpatient—facial paralysis of unknown cause (idiopathic facial paralysis)
- Inpatient—initial medical work up and management of generalized (systemic) or central nervous system disease

#### **DIET**

- No change required

#### **SURGERY**

- Surgery may be indicated in some cases of inflammation of the middle ear (otitis media) to drain the middle ear (procedure known as “bullae osteotomy”)—in patients with disorders of the middle ear
- Surgery may be necessary to remove inflammatory masses that develop from the middle ear or eustachian tube (nasopharyngeal polyps) in cats

## **MEDICATIONS**

Medications presented in this section are intended to provide general information about possible treatment. The treatment for a particular condition may evolve as medical advances are made; therefore, the medications should not be considered as all inclusive.

- Treat specific disease, if possible
- Facial weakness (paresis) or paralysis of unknown cause (idiopathic disease)—none specific; effectiveness of steroids in treatment is unknown, although used very commonly in people to treat Bell’s palsy
- Tear replacement with artificial tears—if Schirmer tear test (technique to measure watery portion of tears) value is low; if the patient has eyelid(s) turned outward, away from the eyeball (known as “ectropion”) or protrusion of the eyeball (known as “exophthalmia”)

## **FOLLOW-UP CARE**

#### **PATIENT MONITORING**

- Reevaluate early for evidence of superficial loss of tissue on the surface of the cornea (the clear outer layer of the front of the eye), frequently with inflammation (known as a “corneal ulcer”)
- Assess monthly for reflexes of the eye and eyelids (menace response, palpebral reflex) and lip and ear movements to evaluate return of function and condition of affected eye, although damage usually is permanent

#### **POSSIBLE COMPLICATIONS**

- Dry eye (known as “keratoconjunctivitis sicca” or “KCS”)
- Superficial loss of tissue on the surface of the cornea (the clear outer layer of the front of the eye), frequently with inflammation (corneal ulcers)
- Severe deviation of the face toward the affected side due to scarring of the muscles of the face; deviation of the lips may develop

#### **EXPECTED COURSE AND PROGNOSIS**

- Depend on cause
- Facial nerve weakness (paresis) or paralysis of unknown cause (idiopathic disease)—prognosis guarded for recovery
- Improvement may take weeks or months or may never occur

## **KEY POINTS**

- Clinical signs may be permanent, but as muscle scarring (fibrosis) develops, a natural “tuck up” reduces lack of symmetry of the face; drooling usually stops within 2 to 4 weeks
- The other side of the face can become affected
- Eye care: the cornea on the affected side may need frequent lubrication or application of artificial tears; extra care may be needed if the animal is a breed with naturally protruding eyes (exophthalmos); check regularly for corneal ulcers
- Most animals tolerate this nerve deficit well