

# Inflammatory Muscle Disorders of the Chewing Muscles and the Muscles of the Eye

## Basics

### OVERVIEW

- “Masticatory muscles” are muscles involved with chewing; they include the temporalis muscle (located on the side of the head, inserting on to the lower jaw)—it raises the lower jaw (mandible) to close the mouth; the masseter muscle (located at the cheek and angle of the lower jaw [mandible])—it raises the lower jaw (mandible) to close the mouth; and the pterygoid muscle (located on the side of the head, inserting on the lower jaw)—it drops the lower jaw (mandible) to open the mouth
- “Myopathy” is the general term for a disorder of muscle
- “Myositis” is the medical term for inflammation of the muscles
- “Extraocular” is defined as being adjacent to the eyeball, but outside of the eyeball
- Masticatory myositis—localized inflammation of the muscles of chewing (known as “mastication”) that involves the temporalis, masseter, and pterygoid muscles; it does not involve the muscles of the legs
- Extraocular myositis—localized inflammation of the muscles adjacent to the eyeball only; spares the muscles of chewing (mastication) and muscles of the legs

### GENETICS

- Unknown
- As with auto-immune diseases in general, the appropriate genetic background must exist
- Masticatory myopathy—muscle disorder seen in Cavalier King Charles spaniels; they have a familial (runs in certain families or lines of animals) form and can be affected at less than 6 months of age
- Extraocular myositis—muscle disorder seen in golden retrievers, may have a genetic susceptibility

### SIGNALMENT/DESCRIPTION OF PET

#### Species

- Dogs (common)
- Cats (rare)

#### Breed Predispositions

- Various
- Masticatory myositis and myopathy—rottweiler, Doberman pinscher, Samoyed, and Cavalier King Charles spaniel develop severe forms
- Extraocular myositis—golden retrievers

#### Mean Age and Range



- No obvious age susceptibility

### **Predominant Sex**

- None obvious

## **SIGNS/OBSERVED CHANGES IN THE PET**

- Masticatory myopathy—muscle disorder with signs usually related to abnormalities of jaw movement and jaw pain; usually requires laboratory testing to confirm diagnosis
- Masticatory myopathy—sudden (acute) or long-term (chronic) pain when opening the jaw; marked jaw pain with manipulation and/or persistent contraction of the masseter muscles with inability to open the mouth (known as “trismus” or “lockjaw”); inability to pick up a ball or get food into the mouth; sudden (acute) swelling of the muscles; progressive loss of muscle mass (known as “muscle atrophy”); protrusion of the eyes (known as “exophthalmos”) or if muscle atrophy is present, eyes may be sunken (known as “enophthalmos”); inability to open the jaw under anesthesia
- Extraocular myositis—marked protrusion of both eyes (known as “bilateral exophthalmos”); impaired vision

## **CAUSES**

- Immune-mediated disorder

## **RISK FACTOR**

- Appropriate genetic background
- Possible previous bacterial or viral infection
- Vaccination may worsen active disease

# **Treatment**

## **HEALTH CARE**

- Outpatient
- Feeding tube—may be required with severe restrictions in jaw mobility; requires good hygiene and supportive care

## **DIET**

- Masticatory myopathy—may require liquid food or gruel until jaw mobility is regained; may need a feeding tube to facilitate fluid and caloric intake

## **SURGERY**

- Not indicated, except for placement of feeding tube (if necessary)

# **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

- Steroids—administered at levels to decrease the response of the immune system (known as “immunosuppressive dosages”), tapered as jaw mobility, swelling, and serum creatine kinase (a muscle enzyme) levels return to normal; maintained at lowest alternate-day dosage that prevents restricted jaw mobility; treat for a minimum of 6 months
- If the dog does not tolerate the side effects of steroids—institute a lower dose of steroids and combine with another drug (such as azathioprine, a chemotherapeutic drug that is used to decrease the immune response)

# **Follow-Up Care**

## **PATIENT MONITORING**

- Masticatory myopathy—monitor for return of jaw mobility and decreased serum creatine kinase (a muscle enzyme) levels
- Extraocular myositis—monitor for decreased swelling of extraocular muscles

## **POSSIBLE COMPLICATIONS**

- Steroids—undesirable side effects (such as increased urination)
- Recurrence of clinical signs—treatment stopped too early
- Poor clinical response—inadequate dosages of steroids
- Inability to move the eyeball (known as “restrictive strabismus”)—extraocular myositis

### **EXPECTED COURSE AND PROGNOSIS**

- Masticatory myopathy—jaw mobility should return to normal, unless the condition is long-term (chronic) and severe scarring (known as “fibrosis”) develops; good prognosis if treated early with adequate dosages of steroids
- Extraocular myositis—good response to steroids; good prognosis unless long-term (chronic) with inability to move the eyeball (restrictive strabismus)

### **Key Points**

- Long-term steroid therapy may be required
- Residual loss of muscle mass (muscle atrophy) and restricted jaw movement may occur with long-term (chronic) disease of the chewing (masticatory) muscles

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