

Masticatory Muscle Myositis (MMM)

What is Masticatory Muscle Myositis?

Masticatory myositis (MM) is inflammation of the muscles of mastication = the chewing muscles (temporalis, masseter, and pterygoid muscles). It occurs primarily in dogs with rare cases reported in cats. Masticatory muscle fibers contain unique myosin fibers, designated as 2M fibers. The inciting cause of the disease is not known but is thought to result from the body's immune system behaving erratically and attacking these special Type 2M fibers (a type of autoimmune disorder).

Dogs of numerous breeds can be affected, although large breed dogs are affected more commonly than small breeds. Both males and females can be affected. German Shepherd dogs seem to be particularly predisposed.

Clinical Signs of MMM

Canine MM is characterized by initial swelling and inflammation of the chewing muscles. During acute stages the masticatory muscles may become swollen and quite painful. The patient may be reluctant to open their mouth or cry out upon opening their mouth. Their appetite may decrease as a result. In some instances, this acute stage may go unnoticed, especially in long-haired dogs. If left untreated, damaged muscle fibers are eventually replaced with scar tissue and severe wasting (atrophy) of the masticatory muscles develops.



Other clinical signs that can be seen in acute stages are protrusion of the eyeballs (exophthalmos) and fever. In chronic cases clinical signs can include inward displacement of the eye (enophthalmos) secondary to muscle atrophy and a mouth that may be completely closed or locked in a partially open position (trismus).

How is MMM Diagnosed?

Diagnosis of MMM is often based on clinical signs alone and can be supported by a positive antibody test (blood test) for Type 2M antibodies. False negative results are possible in a small subset of dogs and/or in dogs that have already begun immunosuppressant treatment.

How is MMM Treated?

The treatment of choice for MMM typically includes daily administration of corticosteroids (i.e. prednisone) over several months. Treatment is often initiated prior to receiving confirmation via the antibody blood test as early treatment is thought to result in a better and more complete response to therapy.

The prednisone will gradually be tapered every 3-4 weeks depending upon the patient's clinical signs. In some cases, the response to prednisone therapy alone is incomplete and a second immunosuppressant medication is added.

Prognosis

The prognosis is often good for dogs diagnosed during the acute stage of the disease before there is significant loss of muscle mass and scar tissue formation. More chronic cases with marked muscle fibrosis may respond partially, although the likelihood of reversing severe muscle atrophy is poor.

Recurrence

Recurrences are possible, especially with inadequate drug dosages or if therapy is weaned too quickly or terminated prematurely. Recurrent clinical signs may be more difficult to manage.

After therapy is finally terminated, the dog should be reassessed several times. These assessments can be made at home with the owner feeling the muscles of mastication for heat and swelling, and manually opening the dog's mouth 2-3 times a week for the next few months.