angell animal medical center

Masticatory Muscle Myositis

Evan Mariotti, DVM, DACVIM

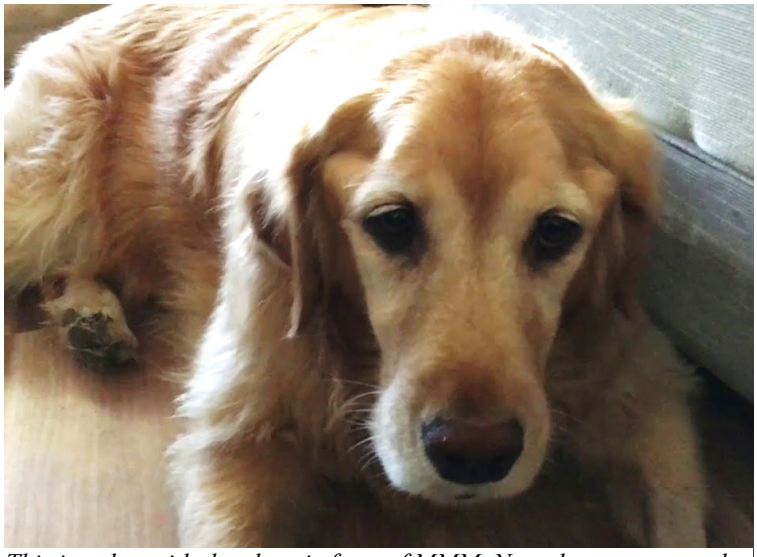
angell.org/internalmedicine

internalmedicine@angell.org

617-541-5186

Masticatory muscle myositis is a common immune mediated disorder involving only the muscles of mastication. The muscles of mastication are composed of a unique myofiber that is not present in other skeletal muscles. IgG is directed against these muscle fibers (type 2M). The breeds affected are mostly large breed dogs, but the German shepherd dog, retriever breeds, and Doberman pinschers are overrepresented. The affected dogs are primarily young or middle aged dogs, but the diagnosis has been made in puppies as young as 3 months.

Clinical signs include fever, painful swelling of the temporalis and masseter muscles, and potentially lymphadenopathy. Palpation of the temporalis and masseter muscles lead to pain as well as opening of the mouth. Progression of the disease leads to marked muscle atrophy of the temporalis and masseter muscles. The chronic inflammation leads to fibrosis and impedes full opening of the mouth though it is not painful. Dogs are usually brought in when they transition from the acute (painful) to the chronic (muscle atrophy) phase of the disease. There are some cases where the dogs are unilaterally affected, but the majority of cases are bilateral. Some dogs can also have exophthalmia, protrusion of the third eyelids and ocular discomfort.



This is a dog with the chronic form of MMM. Note the severe muscle wasting of the temporalis muscle.

The diagnosis is based on clinical signs listed above and ruling out other differentials for pain on opening the mouth (retrobulbar abscess or mass, dental disease and abnormalities of the temporomandibular joint). The atrophy of the temporalis muscles should be differentiated from neuropathies, endocrine diseases and cancer cachexia. A complete blood count may reveal a mild nonregenerative anemia and a neutrophilic leukocytosis. The chemistry panel may show an increase in creatine kinase (CK), AST and globulins. Autoantibodies against 2M muscle fibers are seen in 85-90% of dogs with the acute phase but may not be present in dogs with the chronic phase. EMG can show myositis of the

muscles of mastication to differentiate this from polymyositis. A biopsy of the muscles of mastication confirms the disease.

The treatment includes oral prednisone at 2-4mg/kg/d. This reduces the pain in association with the disease and improves the ability to open the mouth. When clinical signs are improving, the prednisone is tapered gradually over 6 months, the lowest possible dose with a goal of every-other-day treatment. Additional immunosuppressive drugs may be indicated if there is a necessity to taper the prednisone more rapidly, relapses when trying to taper the prednisone or inadequate response on prednisone alone. Other drugs include Azathioprine 2mg/kg PO q24h then q48h when the patient shows signs of improvement, Cyclosporine 5mg/kg PO q12h, Mycophenolate 10mg/kg PO q12h or Leflunomide 2-3mg/kg PO q24h. If choosing Leflunomide, a CBC should be done monthly while on this drug in addition to a Leflunomide trough level after 10 days of being on this drug. The prognosis is good if the affected dogs are treated aggressively.