

Canine Masticatory Muscle Myositis (MMM)

MMM is an autoimmune disease with focal inflammation restricted to the muscles of mastication (temporalis, masseter, pterygoid and rostral digastricus) that are innervated by the mandibular branch of the trigeminal nerve.

Clinical signs:

- Jaw pain or inability to open the jaw
- Atrophy of the muscles of mastication
- Usually the lesions are bilateral; however, they can appear unilateral if one side is more severely affected.
- Breed predisposition: any breed can be affected; however, young large-breed dogs may be predisposed

Diagnosis:

- Rule out other causes for jaw pain and masticatory muscle atrophy (such as corticosteroid usage, trauma to the trigeminal nerve, etc)
- The serum 2M antibody test is the preferred diagnostic test for MMM (this test is an overseas referral test)
 - o Immunosuppressive corticosteroid doses can produce false negatives, especially if administered 7-10 days prior to testing.
 - o End-stage MMM with loss of myofibers and fibrosis can produce a false negative result.
- Muscle biopsy is necessary to confirm polymyositis in patients negative for antibodies against type 2M fibres but where the disease is still suspected. In addition, muscle biopsy is helpful for determining long-term prognosis.
 - o The Temporalis muscle should be biopsied. Take care to not biopsy the overlying frontalis muscle, as this muscle is not affected in MMM.
- CBC, Chemistry & urinalysis
 - o Hyperglobulinaemia, mild anaemia and proteinuria have been documented in dogs with MMM but are not common
 - o CK levels are often elevated in the acute phase, but become normal with chronic disease

A serum 2M antibody test and/or Temporalis muscle biopsy are required to confirm a diagnosis of Canine MMM.

Differential diagnoses:

- Rule out generalized inflammatory myopathies/polymyositis
- Polymyositis (pain and reluctance to open jaw, but not MMM)
- Temporomandibular joint luxation, subluxation or fusion from chronic DJD
- Tetanus
- Craniomandibular osteopathy
- Retrobulbar abscess or other mass
- Extraocular myositis (referred jaw pain)
- Muscular dystrophy
- Foreign body

For more information check out this Compendium article:

<https://www.semanticscholar.org/paper/Masticatory-Muscle-Myositis%3A-Pathogenesis%2C-and-Melmed-Shelton/7dad42b82c7b9e82340fa5cec1288158764e19d8>