MASTICATOR MUSCLE MYOSITIS IN A DOG – A CASE REPORT

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Canine Masticatory Muscle Myositis (MMM) is an immune mediated myopathy which is characterized by focal myositis of the masticatory muscles, the jaw and temporal muscles which leads to trismus in dogs (Brogdon, 1991). This disease is most common in German Shepherds, Labrador retrievers, Doberman Pinschers, Sharper, Beagles and other large breeds (Blomme *et al.*, 2001). This condition is limited to the masticatory muscles because they have a molecular structure called II M (2M) muscle fibers, which are found nowhere else in the dog's body. Disease results when there is production of antibodies which specifically target these 2 M muscle fibers. A case report of MMM in a two year old Doberman Pinscher dog and its successful treatment is presented here.

A two year old male Doberman Pinscher dog was referred to the University Veterinary Hospital, Mannuthy with a history of inappetence and difficulty in taking food. Clinical examination revealed fever (104.8°F), oedema of face and swollen submandibular lymphnodes. The dog showed signs of pain when tried to open its mouth and the animal was reluctant to eat. Wet film and blood smear examinations revealed no blood parasites. The animal was treated with oxytetracycline @ 10 mg/kg BW intravenously and Tab. Robinax 500 mg twice daily orally for 5 days. There was reduction in oedema and pain after 5 days but the animal was not able to open its mouth. Examination of the animal revealed trismus and hollowing of the temporal fossa suggestive of atrophy of muscles, resulting in skull like contour of head (Plate1). Radiographic examination of head revealed no abnormalities of bone, teeth or tempero-mandibular joint. The animal was examined under general anaesthesia for other possible causes of pain and trismus but revealed no abnormalities. The mouth could not be opened even under general anaesthesia. Multiple biopsy specimens were collected from the temporal fossa, but the muscles were highly atrophied and only thin flap of muscular tissue could be obtained from temporal fossa. Muscle biopsy specimens were subjected to histopathological examination after staining with haematoxylin and eosin.

Based on the clinical signs, tentative diagnosis of MMM was made. The dog was treated with oral prednisolone @ 2 mg/kg BW twice daily for a period of 2 weeks. During the course of the treatment the animal was maintained on fluid diets. Animal showed rapid improvement in clinical signs and it was able to open the mouth close to normal range after two weeks. The dose of prednisolone was reduced to 1 mg/kg BW for further two weeks. The dog became normal after 4 weeks with normal prehension and chewing (Plate 4). Then the dose of prednisolone was tapered to 0.25 mg/kg BW for two more weeks and stopped the treatment.

Histopathological examination revealed large areas of chronic proliferative fibrosis with loss of muscular tissue (Plate 2). Characteristic inflammatory cells of chronic reaction such as plasma cells and lymphocytes and presence of blood vessels were also observed (Plate 3). These findings were suggestive of masticatory muscle myositis. Results of the histopathological examination of muscle biopsy and response to the treatment confirmed the diagnosis. No history of recurrence was reported for further one year of observation.

Masticatory muscle myositis is a neuromuscular disease in which masticatory muscles are inflamed and it is painful and difficult or impossible for the dog to open its mouth. There are several reports of such cases in dogs with similar clinical manifestations (Quiroz-Rothe *et al.*, 2002; Evans *et al.*, 2004). Andersen and Harvey (1993) reported two forms of the disease as acute eosinophilic myositis and a chronic atrophic myositis. This condition is reported both in male and female dogs and there is age predilection where young and middle aged dogs are commonly affected (Lewis, 1994). Skull like contour of head is chronically affected dogs is also described by

Shelton *et al.* (1987). Eventhough surgical biopsy of the temporalis or massetter muscle and serum assay for circulating auto antibodies against type 2 M fibres are the recommended tests for diagnosis (Shelton *et al.*, 1985), serum assay could not be performed as this kits are not available. Immunosuppressive doses of corticosteroids are the drug of choice for this condition regardless of muscle atrophy or the amount of fibrosis (Quiroz-Rothe *et al.* 200s; Pitcher *et al.*, 2007) and it was found to be useful in this case also.

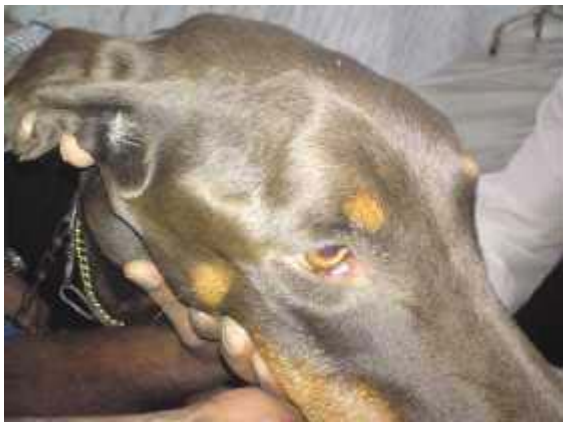

Plate1. Hollowing of the temporal fossa and skull like contour of head

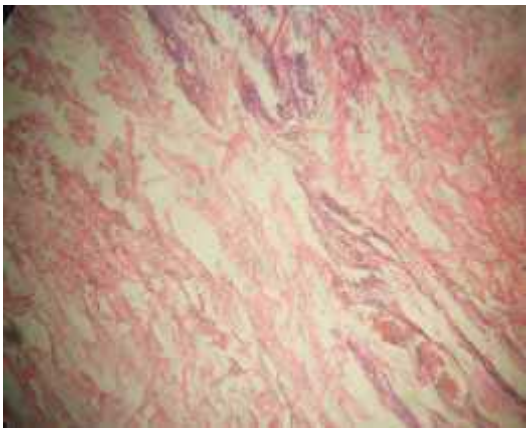

Plate 2.Areas of chronic proliferative fibrosis with loss of muscular tissue

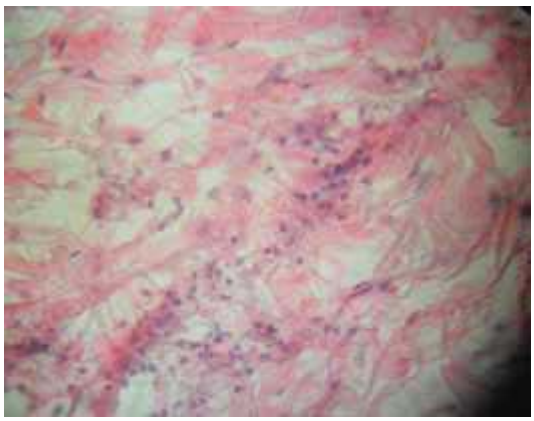

Plate 3. Characteristic inflammatory cells of chronic reaction such as plasma cells and lymphocytes

Plate 4. Dog after recovery

Summary

A case of masticatory muscle myositis (MMM) in a two year old Doberman Pinscher dog and its diagnosis by clinical signs, histopathology of muscle biopsy and response to treatment with prednisolone is presented. The present finding warrants the need for including Masticatory muscle myositis in the differential diagnosis of disorders in dogs with trismus and abnormal jaw function.

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