COMPANION OR PET ANIMALS

Polymyositis as an unexpected presentation of canine leishmaniasis

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SUMMARY
We describe a rare case of a dog with visceral leishmaniasis and clinical, electromyographical and muscle biopsy diagnosis of polymyositis without parasites on muscle biopsy.

BACKGROUND
Canine and human leishmaniasis caused by the protozoan parasite Leishmania infantum is common and endemic in Brazil,1 but there are few published cases where polymyositis is related to Leishmania, and in most of these, myositis is related to the presence of the parasite.2 In 2009, evidence emerged that muscle damage is related to immunological alterations induced by Leishmania infection.3 The aim of this report was to describe a dog with leishmaniasis with typical polymyositis without parasites on muscle biopsy.

CASE PRESENTATION
A 6-year-old male dog was examined with a 30-day history of tetraparesis and recent aphonia. On examination, he was conscious but presented apathy, prostration, increased abdominal volume, muscle atrophy in all four limbs, flaccid tetraparesis with no spinal reflexes and normal tenderness.

INVESTIGATIONS
Bone marrow aspirate clot revealed several amastigote forms of L. infantum (figure 1A,B). Motor conduction studies on the median and sciatic nerves showed normal latencies and velocities. Electromyographical examination was performed with concentric needle electrodes on the left semitendinosus and biceps brachii muscles. At rest, increased insertional activity with frequent fibrillation potentials, positive sharp waves and complex repetitive discharges were seen. Mild effort induced by cutaneous stimuli evoked a clear myopathic pattern with short-duration, low-amplitude polyphasic motor unit potentials. Muscle biopsy performed on the right semitendinosus and biceps brachii muscles showed a myopathic pattern, extensive necrotic areas, phagocytosis, atrophy, degeneration, internal nuclei, random variation in fibre size, endomysial and perimysial fibrosis and mononuclear inflammatory infiltrates (figure 1C), but amastigote forms were not found. The owner opted for euthanasia. Autopsy revealed a disseminated visceral form of leishmaniasis.

OUTCOME AND FOLLOW-UP
The owner opted for euthanasia.

DISCUSSION
After introduction into host skin through the bite of the Phlebotomus, an insect common in our geographical region (São Paulo state, Brazil), Leishmania parasites are phagocyted by macrophages and replicate as round non-motile amastigotes. After macrophage lysis, the released amastigotes are taken up by additional macrophages spreading the disease throughout the internal organs.4 Our autopsied patient had disseminated visceral leishmaniasis, but no amastigote forms were seen on muscle biopsy; therefore, his muscle damage must have been related to immunological alterations probably induced by L. infantum infection, immune complex deposition and/or autoantibody

Learning points
► Canine and human leishmaniasis caused by the protozoan parasite Leishmania is common and endemic in different countries of the world.
► Polymyositis is an autoimmune disease.
► Polymyositis was an unexpected presentation of canine leishmaniasis in this patient.
Visceral leishmaniasis has been described in different countries around the world, including the USA and Canada, so we agree with Paciello et al. that for all cases of human or animal polymyositis of unknown aetiology, it is necessary to consider this diagnosis.

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