

## Case Report

### A CASE OF *Acanthocheilonema reconditum* IN A DOG

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#### ABSTRACT

*Acanthocheilonema reconditum* is a blood sucking microfilarial parasite of zoonotic importance. It has a wide distribution among the world's continents and can cause cutaneous and subcutaneous problems. This is the first recorded case reported in Malaysia of *A. reconditum* in a dog, during a routine blood evaluation taken for an export quarantine evaluation at a private veterinary hospital. Incidental skin lesions were present. This species of microfilaria should be considered based on its geographic distribution as a differential for itching and erythema in a dog and due to its zoonotic significance.

**Keywords:** *Acanthocheilonema reconditum*, dog and zoonosis

#### INTRODUCTION

Abundance of vectors and favourable climatic conditions in addition to presence of suitable hosts are recognised as key determinants of the success of *Acanthocheilonema reconditum* [1]. Many vector borne parasitic diseases i.e. filariasis, leishmaniasis and onchocerciasis are known to cause different cutaneous lesions [2] like pruritic dermatitis, erythema, papules, focal and multifocal alopecia, crusting and nodules [3]. Circulating microfilariae of *Dirofilaria repens*, *D. immitis* and *A. reconditum* are common microfilarial vector born parasite that have been associated with cardiac and subcutaneous lesions [1]. *A. reconditum* has been described in humans and has been considered as a zoonotic parasite causing cutaneous disease [4]. *A. reconditum*'s life cycle starts with ingestion of the vector (fleas and lice) infested with L3 stage of larva [4]. The adult *A. reconditum* resides subcutaneously and releases microfilariae in blood that is subsequently ingested by the vectors while feeding on the dog [5].

#### CASE REPORT

A 5 year and 3 months old spayed beagle was presented for a routine export evaluation. From the history, the owner had mentioned that the pet had a short history of gastritis, was active and alert apart from intermittent symptoms of itching and erythema without alopecia. The pet was fed on a heart worm prevention program according to American Heartworm Society [6] and was on routine monthly frontline spot on. Eight month earlier, a blood sample was taken and confirmed on a blood smear examination as negative for microfilaria and other blood parasites. Haematology and biochemistry results were normal using the acid phosphatase staining method [7].

The veterinarian suspected atopic allergy, however the

8-month timeline and the sudden onset of skin lesions was not in line with the pathogenesis of atopic allergy. This patient had been in Malaysia for a number of years and no filaria were detected in the previous blood samples. Skin scrapings, hair pluck and sticky tape evaluations confirmed a low population of *Microsporum gypseum*. Two out of the 3 blood smear impressions confirmed the presence of uncommon microfilaria larvae. The country of destination (South Africa) requested for blood sample report from approved laboratory to clarify the filaria status. Due to export requirements for clarification, the blood sample was submitted to a veterinary diagnostic laboratory at University of Pretoria (South Africa), where that filaria *A. reconditum* was confirmed in the blood sample. Treatment was based on filaria treatment protocol according to American Heartworm Society [6]. A dose of ivermectin had been administered also after 2 weeks from starting heartworm protocol. Malacetic shampoo plus chlorhexidine are also given as a broad spectrum action to cover any suspected infection.

#### DISCUSSION

*A. reconditum* (Grassi 1889) (Spirurida, Onchocercidae) is a vector-borne parasite of dogs [4]. It is the sole or prevalent inhabitant in dogs. The information about *A. reconditum* is scarce despite its wide distribution in the world. The geographical distribution of *A. reconditum* widely covers the world's regions like the Mediterranean Basin, Middle East, South Africa, South America and Oceania [4, 5]. Intermediate host is a mandatory step to complete the life cycle of *A. reconditum* [5]. Fleas like *Ctenocephalides canis*, *C. felis*, *Pulex irritans*, *P. simulans*, *Echidnophaga gallinae* and lice like *Heterodoxus spiniger*, *Linognathus setosus* plays a major role in vectoring *A. reconditum* [4].

Nevertheless, not much data is presently available on *A. reconditum*. It is not yet clear if infective larval stage are transmitted through the ingestion of infected vectors or through vector's bites [5]. In this case under current study, it had been diagnosed positive for *A. reconditum* and atopic allergy. The positive result of *A. reconditum* based on the result of the acid phosphatase staining method [7].

It was not possible for the authors to confirm if the skin itching and erythema were caused by which of them exactly. *A. reconditum* can be treated with the heartworm protocol [6] however further protocol for others parasites and for skin lesions also should be conducted.

## CONCLUSION

Microfilaria (*A. reconditum*) in dogs should be considered as one of the differentials during diagnosis of skin lesions, especially with a history of dirofilariasis and/or ectoparasites. Laboratory examinations should be done to exclude and/or confirm the possibility of *A. reconditum*.

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