

Internal Parasite



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Introduction

As volunteer wildlife carers, we encounter many different challenges when rehabilitating animals in our care. One of the challenges is to identify and diagnose symptoms early. Our ability to do so is based on our own practical experience, knowledge and resources.

The following paper describes the experience and approach to treating a male, Brown Falcon *Falco berigora* named GT. This falcon was illegally transported into Western Australia. Shortly after arriving into WA, GT presented with swelling around the tarsus. The inflammation was later diagnosed as a reaction to Filarioid Nematodes, internal parasites.

This information is to aid other carers with the knowledge to identify and treat potentially a life threatening disease. A disease that is rare in falcons, more common in reptiles and mammals and a disease that can potentially go undetected.

Case Study Brown Falcon (Falco berigora) Named GT

GT was approximately eight weeks old and was still a fledgling when he was collected from the Perth Airport. Originally GT was from an area North West of Adelaide, South Australia, final destination unknown. After arriving at the Kalgoorlie Airport the Brown Falcon was not claimed, the authorities were notified and GT was sent to Perth.

While an investigation took place on the falcon, for an illegal transport into Western Australia, GT presented with swelling around the tarsus on both legs.

The initial swelling started three weeks after the falcon had arrived into Perth. It appeared to be growing. Within the next two to three weeks the swelling doubled in size and had moved down into the toes. GT's posture had changed. It appeared he was experiencing pain while standing. On a number of occasions GT was witnessed hunched over his feet. A biopsy was conducted and an 8mm Filarioid Nematode was removed.

What are Filarioid Nematodes?

Filarioid Nematodes are an internal parasite. Internal parasites are soft bodied organisms living within another, using nutrients from the host in order to sustain life. There are several different classes which include flukes (Trematodes), roundworms (Nematodes) and tapeworms (Cestodes).

Filarioid nematodes are one of the long threadlike nematode worms that are found in the subcutis, tendon sheaths, orbit and vascular spaces of birds. These nematodes have an unsegmented cylindrical body, tapering at both ends, with a complete digestive tract.

The life cycle of a nematode can be complex. At different stages they can move between several different hosts or locations in the host's body. The initial contamination of the host occurs by ingesting infected meat or through a vector penetrating the skin. Open wounds are ideal areas for the transfer via blood sucking insects into the skin. Once the nematode worm has entered the host it will gain access to the blood stream.

The adult nematodes are the parasites of the connective and lymphatic tissue capable of causing disease. Disease is primarily the response to adult larvae, which elicit a granulomatous inflammatory reaction.

The genus of this Filarioid Nematode is *Splendidofilaria*.

This *splendidofilaria* contains about 31 of small nematode species found in the tissues of birds, including leg joints, subcutaneous tissue and artery walls. Vectors are ornithophilic ceratopogonids and simuliids

Symptoms of the Brown Falcon

1-2 weeks - No sign of infection.

3- 4 weeks - Slight swelling around the tarsus. There were no other obvious symptoms.

5 weeks - Swelling had increased around the tarsus and there was slight swelling down the toes. The swollen area felt spongy. The falcon became more vocal. There were no other obvious symptoms.

6 weeks - A great deal of swelling around tarsus and toes. GT became even more vocal. He appeared stressed and his posture, when perched, had changed. His feathers were dull.



Two weeks after initial swelling



Three weeks after initial swelling

Diagnoses

Soft tissue fluctuant swellings at tarso metatarsal joints and tibiotarsal-metatarsal on L

Biopsy was done on the lateral side R tarso-metatarsal joint and an 8mm filariid nematode was removed.

Treatment

Initial injection of metacam

Oral metacam continued for 5 days after initial injection

Topical Moxidectin was applied. 6 drops on each foot, repeating after 2 weeks

After the initial treatment the swelling subsided. The adult larvae were eliminated and had been absorbed by the Brown Falcon. By the end of week two the treated area became swollen again. It was evident the eggs had not been eliminated during the initial treatment and had developed into the first stage of larvae. The Moxidectin dose was repeated. Within four weeks the affected area had returned to normal.

During the treatment stage the patient should be checked regularly. A dangerous allergic reaction and abscesses may occur from the dead larvae. Surgery may be required to treat hydrocele or to remove the dead adult larvae and calcification built up.

If untreated

If the Brown Falcon was not treated for this disease, the affected skin would ulcerate and the chronic inflammation would progress to fibrosis and obstruction of the lymph flow.

This internal parasite has the potential to move between several different hosts without been detected. It can potentially be the cause of a life threatening disease.

Quarantine

Quarantine is imperative when dealing with wildlife. This is one case a long quarantine period was essential. Symptoms were not obvious until about four weeks after receiving the Brown Falcon. During the first 3 weeks there were no obvious signs to indicate a disease in anyway.

With the increasing number of sick animals coming into captivity, it is important to implement a quarantine and hygiene structure. This will help detect early signs of disease and avoid any cross contamination.

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