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## ***Spirocerca lupi - worms from the dung beetle.***

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The "worm in the throat" The silent killer.

Spirocerca lupi is becoming more common in South Africa's summer rainfall area and leading to an almost endemic situation.

### **Introduction.**

For every single person that owns a dog in South Africa educate yourself and talk to your local vet about the dreaded Spira Lupi ... and how to prevent it.

**Especially** if this beetle lives in your area.

### **Spiro - worms from the dung beetle.**

This worm lives in the dog's oesophagus (The oesophagus food pipe – anywhere from the mouth to anus) where it forms a nodule.

Many worms can live inside a nodule and **numerous nodules** can form.

*Spirocerca Lupi* live in the esophagus and stomach of their host animal.

When adult worms attach to the esophagus, they live in nodules that can grow and interfere with the host animal's ability to breath.

In rare, but serious cases, the worms can develop **within the heart's aorta**.

If this occurs, there is a chance that the aorta could dissect, or burst, and lead to the animal's near-instant death.

*Spirocerca lupi* infestations in the esophagus can also develop into esophageal cancer with the potential to transport cancer to other areas of the body.

This type of **worm** can be transported to a host animal through the ingestion of beetles or **another infected animal**, like chickens, rodents or frogs.

De-worming is key but **only certain de-worming meds** kill this specific parasite!

Infection is fatal and often the symptoms are so subtle you don't notice them ... until it's possibly too late.

The female lays eggs and these are ...passed in the stool of the dog (host).

These eggs have to be eaten by a **dung beetle** (also by chickens, rodents or frogs).

The small dung beetles (**scarab beetles**) living in the stool are part of the lifecycle, not the dung rollers we are more familiar with.

This beetle **can be eaten by the dog** or another small mammal ... infested other animals and birds that might become food for the dog.

The egg hatches and matures to a larval stage three in the beetle and stays in that phase even if eaten by other small mammals, lizards or birds.

Further maturation will only occur if the host (beetle or transport host) is eaten by a dog.

The third stage larvae hatch and burrow into the stomach wall where they migrate along the arteries back towards the chest portion of the aorta, the main blood vessel in the body.

This takes about two weeks.

Once in the aortic wall, the worms mature and stay there for about three months.

Extensive damage is caused to the aorta during this period and aneurysms develop.

These may rupture and cause acute death.

Once the worms are mature, they migrate directly across the body tissues to the oesophagus which lies adjacent in the chest.

At this stage these worms are about 4-5 cm long and can cause considerable damage, resulting in rupture of large blood vessels, inflammation of the lining structures of the lungs and infection.

The worms then establish themselves in the oesophagus where they live, mate and lay eggs.

### **Symptoms and reaction.**

Dogs react differently to these nodules: some dogs, especially terriers, show signs of severe irritation with even small nodules (gagging, swallowing, and retching) whereas other dogs may show no symptoms until the nodules are large.

Other symptoms associated with the migration can be fevers, joint pain, coughing, and difficulty breathing.

With time, and due to the chronic irritation caused by the worm in the tissue, these nodules can become cancerous.

This is a serious condition which may or may not respond to surgery depending on the extent of the cancer.

### **Diagnosis.**

Diagnosis is best made by doing an oesophageal endoscopy (putting a camera into the oesophagus) and observing for a nodule.

Chest X-rays can also help, but may miss some nodules.

Not all nodules grow into the oesophagus and a CT scan might also be used to check for these.

The worm sometimes gets lost and **can make nodules in just about any organ**. This is called aberrant migration.

If one of your dogs is diagnosed with this worm it is advisable to have all your other dogs checked.

Preventative therapy is not yet proven beyond a doubt but evidence shows that you will decrease your chances of re-infection by 80% if you deworm your dog's **monthly** with a dewormer containing milbemycin oxime (Milbemax®), or use a cattle dewormer doramectin.

These anti-parasiticide agents are the only proven drugs to cure and decrease the infection with *Spirocera lupi*.

Spot-on preparations containing these drugs do exist, but there is no evidence that they are effective in treating spirocercosis.

Worms that are exposed to these drugs also lay fewer eggs, even before they die, thus decreasing environmental contamination.

Deworming your dog monthly is the preferred method of controlling all other worms (round and tapeworm) as their lifecycles are about 21 days long and monthly deworming prevents them from maturing and laying eggs, contaminating your environment.

This disease has not been documented to affect humans, and only rarely cats.

So take the bull by the horns with this devastating disease and get your dogs checked by your veterinarian and start a monthly preventative program.

Please note that other types of worms require deworming every 3 months, but now that we are seeing more dogs infected with *Spirocerca* - recommend deworming once a month, especially if your dog loves "hunting" little creatures or eating bugs in the garden!

