

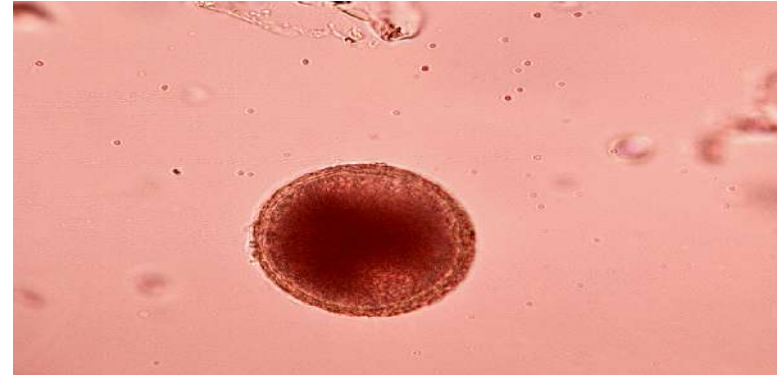
Fleas and worms in 2020: the importance of parasite control in cats



Ian Wright BVMS.MSc.MRCVS, Head, ESCCAP UK & Ireland

Cat parasites forming the basis of parasite control

- Helminths – Tapeworm
Toxocara spp
Heartworm



- Ectoparasites – Fleas
Ticks



- Protozoa – *Giardia* spp
Toxoplasma gondii
Tritrichomonas foetus



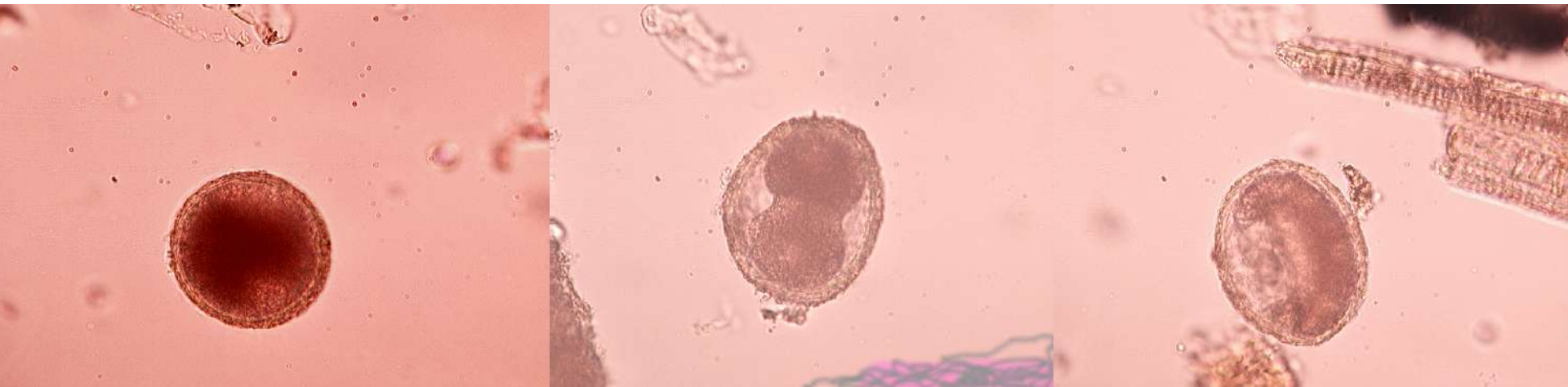
Toxocara.cati

- Intestinal nematodes of dogs cats
- The most common nematode of cats seen and treated in small animal practice
- Both *T.canis* and *T.cati* zoonotic
- Some public awareness of zoonotic potential



Life cycle

- Unembryonated eggs passed in faeces
- 2-7 weeks to reach infective L3 stage in egg so fresh faeces are not a zoonotic risk
- Transplacental and transmammary route most important route of infection in dogs
- Transmammary route and paratenic host ingestion most important route in cats



Zoonotic potential



- 2-4 year olds highest risk group but adults also affected
- Visceral and ocular larval migrans
- Also neurological and covert forms
- Links to cognitive dysfunction and epilepsy

Zoonotic potential

- People infected by ingesting embryonated eggs – *T.canis* and *T.cati*
- Eating undercooked game proposed as possible infection route
- Most significant route embryonated egg ingestion
- Geophagia, pica
- Between 2-44% seroprevalence across Europe

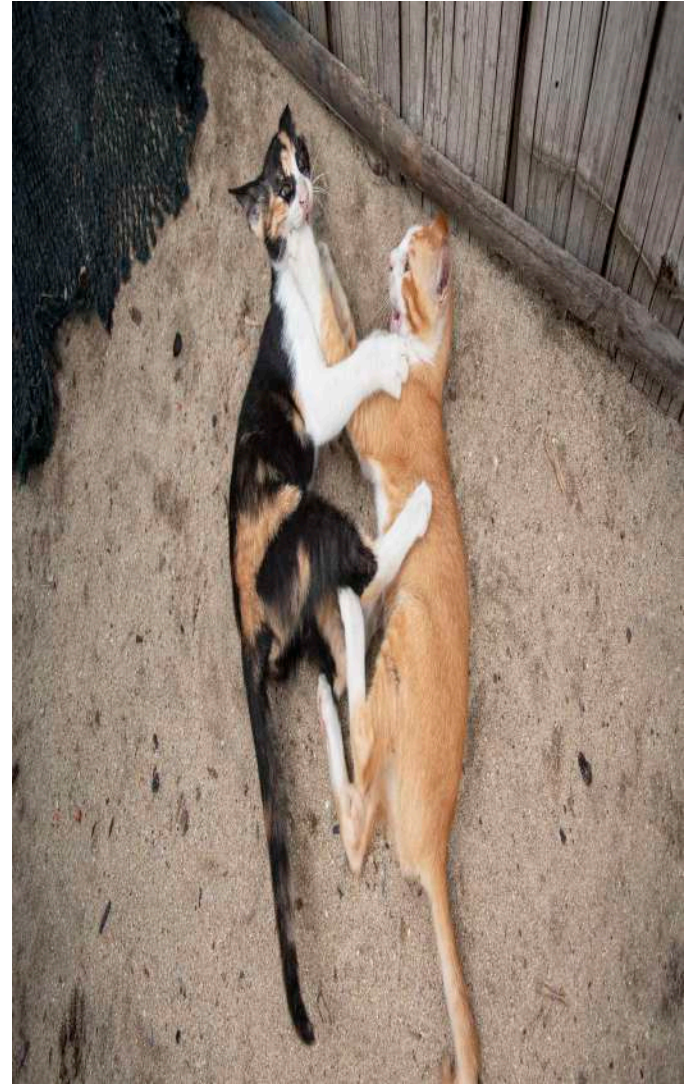
The role of cats in human toxocarosis

- Prevalence of *T.cati* in cats often greater than prevalence of *T.canis* in dogs – 26% (Wright et al, 2016)
- Cats are a significant contributor to *Toxocara* eggs in the environment. In urban areas, stray cats in particular play a predominant role.
- Predilection for burying faeces – often visit sandpits
- Need to consider deworming of cats as well as dogs – monthly for cats hunting, living with children or immune suppressed individuals



Control of human Toxocarosis

- One health approach
- Regular deworming of pets
- Picking up dog faeces
- Good hand hygiene
- Covering of sandpits
- Stray cat control?



Deworming frequency – Adult cats and dogs

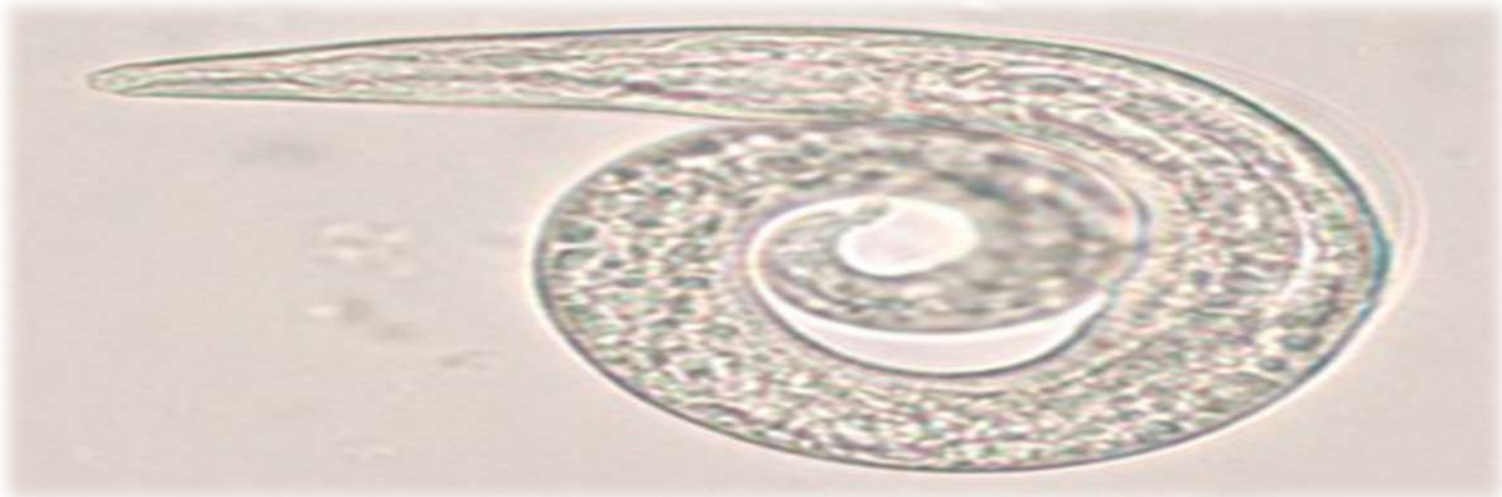
- 4 times a year for “greater good” but needs to be widely adopted
- Monthly deworming mitigates immediate risk from garden and household contamination.
- 3 monthly deworming with anthelmintic effective against *Toxocara* minimum recommendation
- Monthly deworming for hunting cats, pets in regular contact with children or immune suppressed individuals

Anthelmintics effective for *T.cati* prophylaxis

- **Macrocyclic lactones** – eprinomectin, milbemyacin, moxidectin, selamectin
- **Tetrahydropyrimidines** – febantel, oxantel, pyrantel
- **Emodepside**
- **Benzimidazoles** - fenbendazole, flubendazole

Aelurostrongylus abstrusus

- Cause of bronchitis/pneumonia in cats – fatal case in UK kitten
- Snail and slugs are the intermediate hosts
- Amphibians and birds transport hosts
- 1.8% prevalence in recent UK study, 10.8% across Europe



Treatment & Prevention



- Fenbendazole 50mg/kg SID for 3 days
- Spot on
 - Emodepside
 - Moxidectin
 - Eprinomectin
- Avoidance of intermediate host
- Outdoor/hunting cats at greater risk

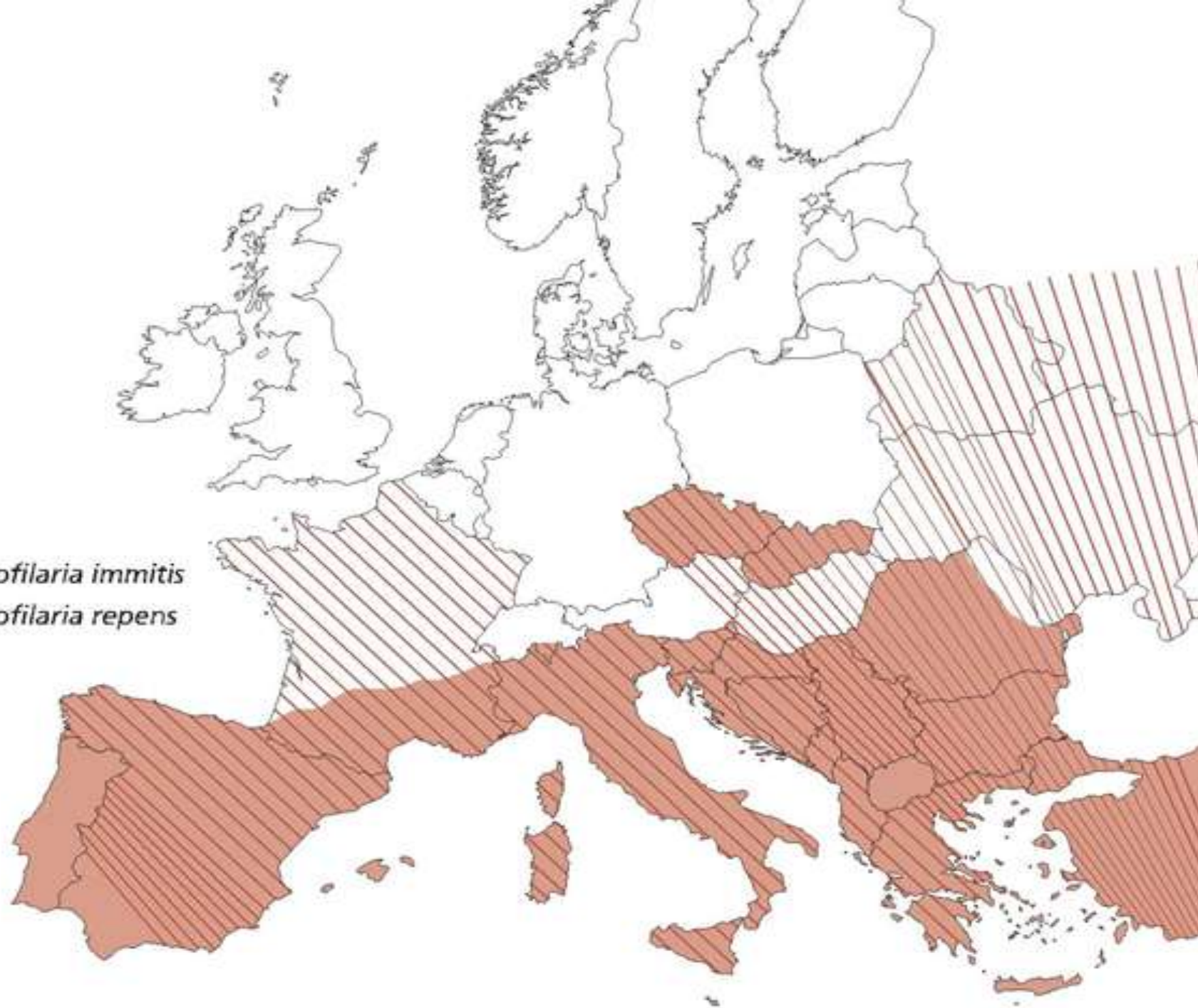


Dirofilaria immitis (heartworm)

- Mosquito transmitted
- Clinically significant in Dogs, cats and ferrets
- Endemic in Australia, Southern Europe, many US states, parts of Asian and Africa, not UK
- Adults in pulmonary artery/right side heart but not always present in feline infections



 *Dirofilaria immitis*
 *Dirofilaria repens*

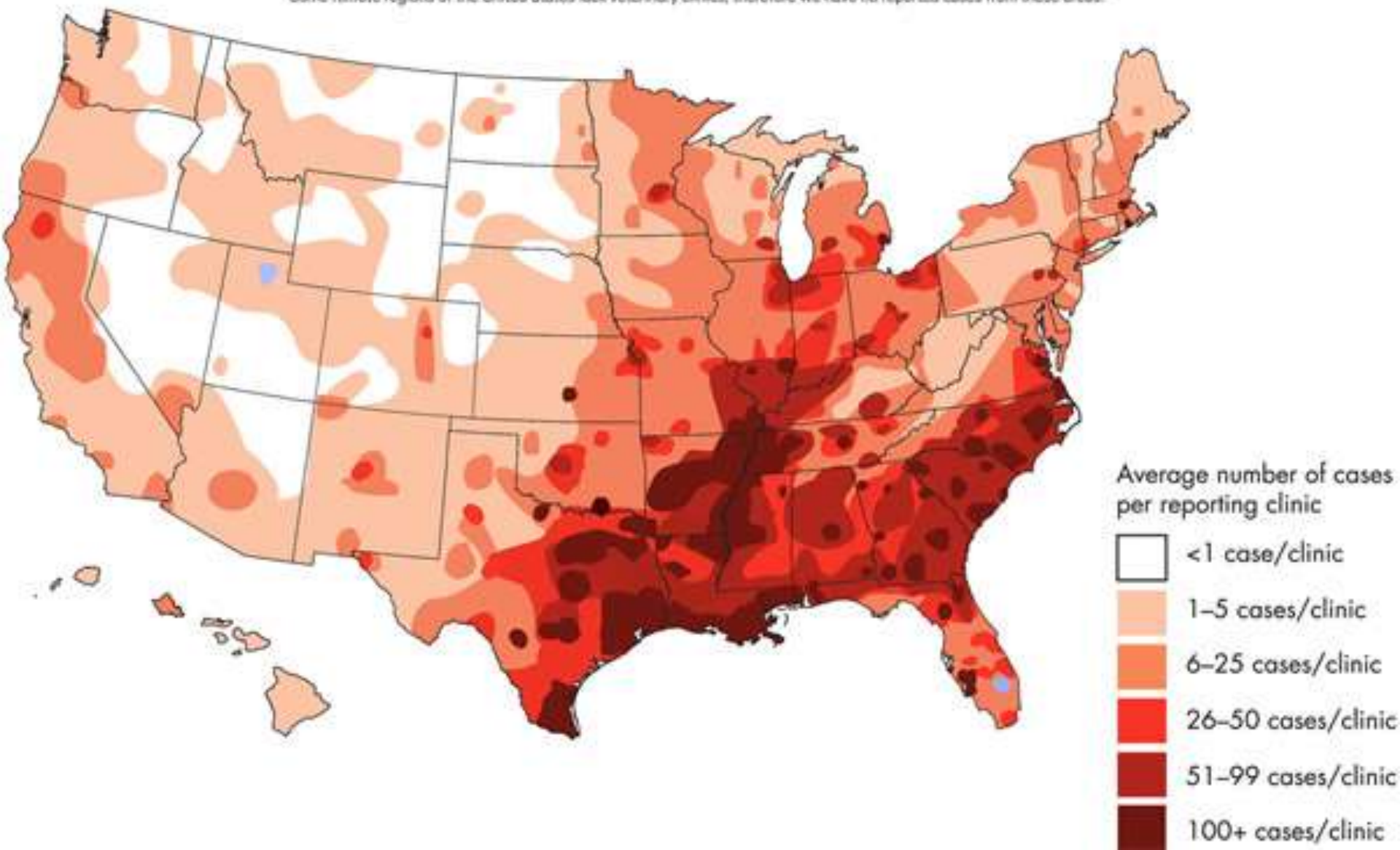


2019 HEARTWORM INCIDENCE



AMERICAN
HEARTWORM
SOCIETY™
EST. 1974

© American Heartworm Society The severity of heartworm incidence as shown in this map is based on the average number of cases per reporting clinic. Some remote regions of the United States lack veterinary clinics, therefore we have no reported cases from these areas.



Clinical signs

- Sudden death – can occur with just one or two worms
- Respiratory signs from migrating larvae (HARD)

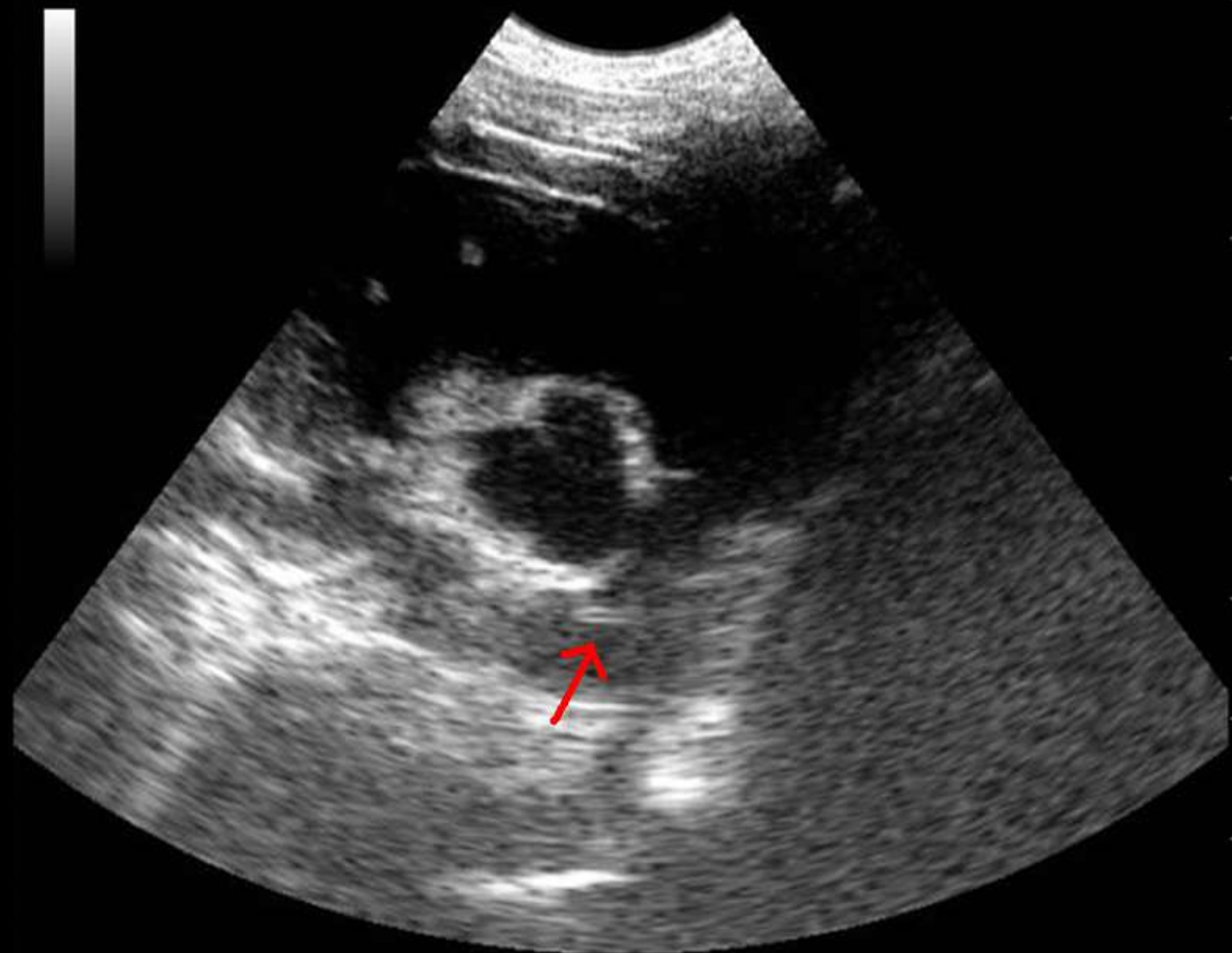


Diagnosis

- Knotts test- few, if any circulating microfilariae
- Antigen serology - Sensitivity as low as 50% in cats
- Antibody serology -32-98% sensitivity, detects exposure
- Radiography- enlargement of pulmonary arteries variable, rarely heart enlargement. Bronchointerstitial lung pattern.
- Ultrasound – adult worms

PKC 6-3-L PK5 -
PST 2

CANINE C CA123



Treatment

- Surgical removal
- Adulticides – contraindicated in cats
- Prednisolone – 1-2mg/kg tapered over 4 week period
- Supportive treatment – Oxygen, ivft, bronchodilators
- Antibiotics – On basis of cultures

Prevention

- Macrocyclic lactones monthly – vital in cats to avoid establishment of adult infection
- Selamectin, Moxidectin, Milbemycin oxime, eprinomectin
- Will also protect against lungworm
- Avoidance of vector

Taenia infections

- Number of species and commonly infecting cats worldwide
- Taenid eggs but rarely seen in faecal flotations
- Active segments in faeces – Cause of human revulsion!
- Prevalence dependent on risk factors
- Variety of intermediate hosts – Hunting/predation risk factors
- Well tolerated even in large numbers but loss of condition and even intestinal obstruction in heavy infections

Dipylidium caninum

- Is a zoonosis
- Pre patent period not a factor
- Prevention dependent on flea control
- Disturbs clients!
- Sentinel for inadequate flea control



Cat fleas

Ctenocephalides felis

28.1% of pet cats and 14.4% of pet dogs infested

Lagomorphs, ferrets, 80% of wildlife species

Any cat or dog may be exposed

Source of dermatitis, irritation and vector of disease





Bartonellosis (cat scratch disease)

Transmitted through flea faeces, 11.3% of UK cat and dog flea infestations positive for infection

May mean over 400,000 cats and dogs carrying infected fleas in the UK

Cause of pyrexia in cats? Also possible links to renal disease, gingivitis and myocarditis

Doxycycline and fluoroquinolones for 4 weeks not guaranteed to eliminate infection

Zoonotic

Bartonellosis – Prevention

Control existing flea infestations with flea adulticides

Wear gloves to handle any materials that may be contaminated with flea faeces such as bedding and when grooming pets

Avoid as far as possible, interactions with cats that are likely to result in bites or scratches.

Thoroughly wash bite or scratch wounds from cats as soon as they occur.

Keep cats claws trimmed.



Mycoplasma haemofelis

Bacterium living on the surface of erythrocytes, potentially leading to immune mediated haemolytic anaemia

Isolated from adult fleas, flea larvae and flea dirt

Blood ingestion during fighting or cat saliva may also be involved in transmission.

FIV risk factor for infection and subsequent IMHA

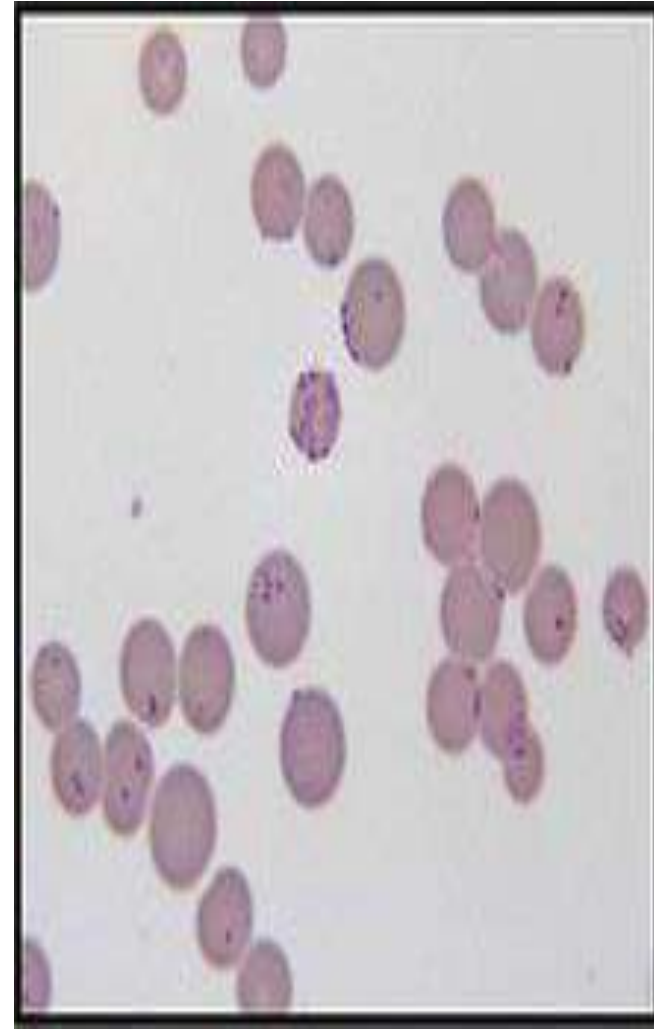


Diagnosis and treatment

Diagnosis is by blood film examination and PCR

Prognosis is improved by early intervention with doxycycline 10mg/kg sid per os

Supportive treatment for anaemia may also be required.



Rickettsia felis



Kenny et al (2003) 6-12% of fleas found to be carrying *R.felis* by PCR

Big flea project found approximately 5% of flea infestations on cats and dogs are positive for *R.felis*.

Cats not significant reservoir host and rarely causes clinical signs in cats.

Maintained in fleas by vertical transmission – Flea control limits zoonotic risk

Other potential vectors including mosquitoes, mites and ticks

Treatment and control

Adulticide

Growth regulators and inhibitors

Environmental insecticides

Cleaning environment



Environmental treatment

Vacuum carpets - daily

Growth regulators – systemic or applied to the environment

Insecticides – care with application

Wash bedding – 60 degrees Celsius



Assessing risk

Does cat hunt or have access to unprocessed raw food/carcasses?

In heartworm, leishmanial or significant tick-borne disease endemic region

Are children in the household?

History of tick exposure

Assessing Compliance and efficacy

- Does owner shampoo pet/frequent swimming?
- Preference for tablet/spot on /collar
- Reaction to spot on or collar in past
- Vomited on specific tablets in past

ESCCAP UK & IRELAND

- Independent not for profit company
- Provide clear and constructive information about effective parasite control and pet travel.
- Brings together some of the UK and Ireland's leading veterinary parasitology experts
- Free and independent advice - www.esccapuk.org.uk
- Hammondia@Hotmail.com