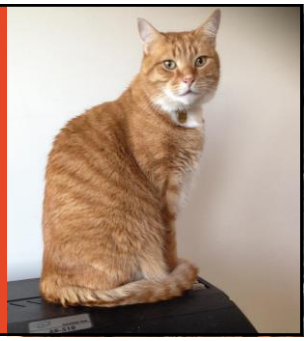
Does the cat need to go?

Conundrums at the interface between human and animal medicine

Presented by
Sandra Steele BVSc (Hons) MPH
PhD Student, Sydney School of Veterinary Science.

THE UNIVERSITY OF SYDNEY



Introduction

- 62% of Australian households have a pet
- The public expect veterinarians **and** doctors to give advice about zoonoses
- The public has a poor understanding of zoonoses and zoonoses prevention
- Veterinarians often provide advice to their clients (your patients!) about zoonoses
- Veterinarians will refer their clients to their GP or local PHU if they are concerned about a zoonosis

- **So there are benefits to your patients/our clients if we can work together!**

Clinical Scenario 1: General Practitioner

- 25 year old female patient
- 10 weeks pregnant.
- Owns a cat.
- Tells you her mother-in-law has expressed concern as she has heard that cats have diseases which can affect the baby. Patient seems anxious.

What advice do you give?

Clinical Scenario 1: Veterinary Practitioner

- Merlin – 11yrs MN DSH
- Owned for 10 years. Was originally a stray
- Indoor/Outdoor cat
- Eats commercial cat food with an occasional treat of raw beef or chicken
- In good health, regular worm and flea prophylaxis
- Sleeps inside at night

Clinical Scenario 1: Veterinary Practitioner

Presenting complaint:

Merlin's owner is very distressed. Her mother-in-law thinks the cat is 'dirty' and she should get rid of it because she is pregnant. She has had the cat since she was a teenager and is very attached to him. Her husband appears anxious and is receiving text messages on his phone during the consultation.

Merlin's owner saw her GP three days ago for a pre-natal visit, and she says that her GP recommended the cat get 'tested' as it 'could be a problem'.

Does the cat need to go?

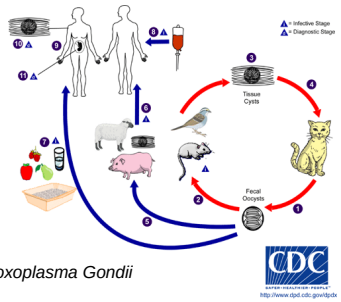
- Titre tests: Are they helpful?
- What is the real risk?

Cat Facts *Toxoplasma gondii*

- Cats are the definitive host of *Toxoplasma gondii*
- Cats are usually infected by eating prey (eg rats, mice) or raw meat (fed by owner) which contain tissue cysts
- When infected, cats only shed immature oocysts in the faeces for 2-3 weeks
- Most cats don't become clinically unwell
- Oocysts are not immediately infective – they need to sporulate which takes 1-5 days
- Mature oocytes can persist in the environment for up to 12 months
- Infection from direct contact with a cat is extremely rare

Human Facts *Toxoplasma gondii*

- Humans are one of many intermediate hosts of *T. gondii*
- Most cases of toxoplasmosis in people are associated with poor food hygiene when handling and preparing raw meat **or** ingestion of oocysts from soil when gardening or from root vegetables
- Incidence of congenital toxoplasmosis in Australia is thought to be around 12-14 per 10, 000 births



Life Cycle *Toxoplasma Gondii*

Shutterstock

https://www.thisisinsider.com/parasite-in-cat-poop-linked-to-entrepreneurial-behavior-2018-7

A parasite found in cat poop has been linked to a higher likelihood of entrepreneurial behavior in people who get infected

Peter Kotecki, Business Insider 2018

- A new study has found a link between a parasite in cat feces and entrepreneurial behavior.
- Researchers found that students with toxoplasmosis were 1.4 times more likely to be a business major than those who weren't.
- Among professionals who attended entrepreneurship events, those who tested positive for the parasite were 1.8 times more likely to have started a company.

General recommendations from '*Clinical Practice Guidelines: Pregnancy care 2018 edition*'

- Do not routinely offer testing for toxoplasmosis to pregnant women
- Advise pregnant women about measures to avoid toxoplasmosis infection such as:

  • washing hands before handling food *(What about after ?? Also do not use the same chopping boards for meat and veg.)*
  • thoroughly washing all fruit and vegetables, including ready-prepared salads, before eating
  • thoroughly cooking raw meat and ready-prepared chilled meals
  • wearing gloves and thoroughly washing hands after handling soil and gardening
  • avoiding cat faeces in cat litter or in soil

Other important sources

Changing eating habits may lead to increased risk.

- Unpasteurized milk – Goat, Sheep and Camel milk have been identified as a risk
- Higher risk meats: Lamb, kangaroo, free range pork, venison, free range chicken, cured meat (eg salami)
- Contaminated water sources. (more common in third world but large outbreak in Canada in 1995)
- Hussain, M., et al. (2017). "Toxoplasma gondii in the Food Supply." Pathogens **6**(2): 21.

Clinical scenario 2a: GP practice

- Young child
- New kitten
- Clear cut diagnosis
- What about the cat?

Clinical scenario 2b: GP practice

- 40 year old woman
- Solitary circular red lesion 3 cm in diameter on forearm. GP makes a diagnosis of ringworm
- Lesion not cultured
- Has a number of chronic health issues that are well managed
- Owns a dog
- GP is concerned the dog is the source of infection and asks her to take the dog to her veterinarian
- What about the dog?

Clinical Scenario 2a: Veterinary Practitioner

- Ringworm (dermatophytosis) is most commonly seen in juvenile animals, especially kittens. Is more common in long coated cats
- Some animals can be carriers
- Is seen more frequently in 'intensive' or stressful situations – animal shelters, cat colonies, and some breeding facilities
- Is most commonly *Microsporum canis* in cats and dogs but can also be other fungal species (*Trichophyton spp.*)
- Many (not all) *M. canis* lesions will fluoresce under a Woods Lamp

What about the cat?

In **normal** situations dermatophytes are straightforward to treat in companion animals

- Confinement to a large crate or a small area in the house that is easy to clean.
- Treat animal with oral antifungals for 4-6 weeks
- Topical miconazole washes
- Good hygiene after handling animal, and minimize contact with children
- Clean environment – Vacuum carpets and soft furnishings, 10% bleach for hard surfaces

However treatment is difficult when there are large numbers of animals

What about the dog?

- 4 yo male neutered dog
- Ex shelter dog, has been with owner for >12 months
- No skin lesions, no areas of alopecia, no history of skin conditions
- Woods lamp –ve
- Not a typical demographic

What to do?

Take a family history.

- Where has the dog been?
  Nowhere different to usual. Does not sleep in the owners bed though he has close contact with the owner. No contact with other animals
- Where has the owner been?
  Owner works in an aged care facility
- More likely to be an environmental infection. Would do culture from dog if history not clear
- Miconazole shampoo for dog to minimize risk of infection from owner. Owner instructed to minimize close contact with dog

Gastrointestinal Diseases

E coli, Salmonella spp, Campylobacter spp
Are they just foodborne?

What are veterinarians concerned about?

1: Raw food feeders – potential for pets to share their infections or become asymptomatic carriers

Important to consider animal contact when taking a history, especially in young children

Gastrointestinal Diseases (cont)

2: Raw milk drinkers: what the public thinks

- Father of toddlers critically sickened by E. coli: 'Not aware this was remotely possible' Knox News 2018
- 'Raw milk these days, is obviously different to the raw milk of the 1950's - 1960's etc. My large family and most of the neighbours around us drank the evil product and I am not aware of anyone becoming ill, or dying as a result' (comment on media article)
- 'Mountain View Farm owner Vicki Jones said she was shocked by news of the toddler's death, but said the dangers of raw milk had been sensationalised by the media.' The Age 2014

Gastrointestinal Diseases (cont)

3: Exotic pets

- Reptiles a source of salmonella
- Not recommended as pets for children under 5 years
- No known cases in Australia (may just be that we have never looked!) but documented overseas.
- https://wildlifehealthaustralia.com.au/Portals/0/Documents/FactSheets/Reptiles/Salmonellosis%20in%20Australian%20Reptiles%20July%202017%20(2.0).pdf

Important to consider animal contact when taking a history, especially in young children

Gastrointestinal Diseases (cont)

4: Petting zoos

- Queensland Health says a cluster of E.coli cases at the Brisbane Ekka were probably linked to the animal nursery. (ABC News 2015)
- Toddler dies and brother left fighting for life after visiting petting zoo (www.kidspot.com.au 2017)
- http://www.health.nsw.gov.au/Infectious/factsheets/Pages/petting-zoos-and-personal-hygiene.aspx

Important to consider animal contact when taking a history, especially in young children

Gastrointestinal diseases (cont)

5: Backyard Chickens

There's a big salmonella outbreak in the US because people keep kissing chickens (Vox.com 2015)

Backyard chickens blamed for illness outbreak in Carolinas, 42 other states, CDC says (2018)
http://amp.wyff4.com/article/backyard-chickens-blamed-for-illness-outbreak-in-carolinas-42-other-states-cdc-says/22530992

Important to consider animal contact when taking a history, especially in young children

Q Fever: Coxiella burnetti

- Notifiable disease in people (not in animals)
- 469 cases Australia wide in 2017 – only 8 in WA
- Vaccination is available in Australia
- Organism excreted in large amounts in birth products and milk, also faeces and urine
- Reservoirs: Cattle, goats, sheep, macropods, companion animals and ticks
- Organism can survive in the environment for long periods –dust borne spread

Q Fever: Coxiella burnetti (cont)

High Risk Groups

- Most veterinarians who attended Australian vet schools have been vaccinated
- Veterinary nurses and ancillary staff have lower rates of vaccination Many are young women of childbearing age
- Farmers and their families
- Abattoir workers
- Dog and cat breeders, council rangers

Take home messages

- Ask about animal contact
- **But** the benefits of pet ownership far outweigh any risks
- Children under 5, pregnant women, people who are immunosuppressed and the elderly are more vulnerable
- Hand and food hygiene are still the main messages
- Most veterinary practitioners would love to talk to you if you have questions about how they can help your patients and their families

Find the March edition in the pile in your office