

Toxocariosis accompanied with conjunctivitis, scabies, thrombocytopenia in a domestic cat

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ABSTRACT: Toxocariosis, conjunctivitis, and scabies are common health issues in cats and are caused by nematode worms, viral or bacterial infections, and mites, respectively. This article reports a case involving a two-month-old female domestic cat named Jeni, who was brought to the veterinarian due to complaints of diarrhea, eye discharge, itching, skin lesions, and hair loss. Laboratory examinations revealed the presence of *Toxocara cati* eggs through faecal analysis using native and flotation methods, bacteria from a cytological examination of conjunctival smears later identified as *Staphylococcus* sp. through bacterial culture, and *Sarcoptes scabiei* from superficial skin scraping. A complete blood count showed leukocytosis, lymphocytosis, monocytosis, granulocytosis, thrombocytopenia, and hypochromic anemia. The patient was diagnosed with toxocariosis, conjunctivitis, scabies, and thrombocytopenia, with a guarded prognosis. Treatment included the administration of pyrantel pamoate, kaolin-pectin, chloramphenicol, dexamethasone eye drops, ivermectin, diphenhydramine HCl, and multivitamin syrup. Despite four days of treatment, the cat did not survive and died, after which an autopsy was performed. Gross pathological changes included intestinal and pulmonary hemorrhage, while histopathological examination revealed congestion and necrosis in the bronchioles, as well as hemorrhage and edema in the lungs. Necrosis was also found in the intestinal villi and crypts of Lieberkühn, supporting the diagnosis of toxocariosis, with suspected *Toxocara cati* larval migration to the lungs.

Keywords:

gross and histo-pathology, toxocariosis, scabies, conjunctivitis, domestic short hair cat

■ INTRODUCTION

Subrata *et al.* (2017) found a high prevalence of helminth infections in Bali cats, with *Toxocara* sp. as the most common parasite (71.43%), followed by *Ancylostoma* sp. (37.59%), Cestoda (19.55%), and *Capillaria* sp. (0.75%). *Toxocara cati*, a significant feline parasite, can be transmitted orally, iatrogenically (Ursache *et al.* 2021), through paratenic hosts (Bowman 1999), or transplacentally (Okada *et al.* 2021). Cats frequently suffer from conjunctivitis, an inflammation of the conjunctiva caused by viruses like Herpesvirus and Calicivirus or bacteria such as Chlamydia and Mycoplasma (Trbolová 2011). Scabies, caused by mites like *Sarcoptes scabiei* or *Notoedres cati*, manifests with pruritus, alopecia, papules, hyperkeratosis, and crusts (Hnilica & Patterson 2017). Although less studied, Thrombocytopenia (TP) in cats has a prevalence of 1.2% to 3.1%, indicating it may be an under-recognized severe condition (Ellis *et al.* 2018). This case report examines multiple cat health issues, including toxocariosis, conjunctivitis, scabies, and thrombocytopenia, detailing clinical symptoms, laboratory results, and treatment outcomes for a comprehensive understanding of these concurrent infections.

■ CASES

Signalment and Anamnesis: Jeni, a two-month-old female domestic cat weighing 0.3 kg, presented with diarrhoea, eye discharge, swollen red eyelids, and frequent scratching since adoption. The cat had free roam around the house, frequently encountering stray cats. **Clinical Examination:** The cat exhibited a heart rate of 152 beats per minute, pulse rate of 144 beats per minute, normal skin turgor, and a respiratory rate of 35 breaths per minute. Capillary refill time was less than 2 seconds, rectal temperature was 39.5°C, and Body Condition Score was 2/9. Faeces had a porridge-like consistency, and the cat had a pot-bellied appearance. Anal mucosa was inflamed, bilateral purulent eye discharge was observed with swollen conjunctival mucosa, alopecia lesions were noted with a pruritus score of 5/10, and the fur appeared dirty and dull. **Laboratory examinations:** Faecal examination using native and flotation methods revealed *Toxocara cati* eggs. Cytological analysis of conjunctival smears showed numerous bacteria, and superficial

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skin scraping confirmed *Sarcoptes scabiei*. Postmortem examination revealed intestinal and lung abnormalities (Figure 1A and 1B). Complete blood count (CBC) indicated leukocytosis, lymphocytosis, monocytosis, granulocytosis, thrombocytopenia, and hypochromic anaemia. **Diagnosis:** Toxocariasis, conjunctivitis, scabies, and thrombocytopenia. **Prognosis:** Dubious. **Treatment:** Jeni was treated with pyrantel pamoate (5 mg/kg PO), eye drops with chloramphenicol and dexamethasone (one drop in each eye, four times daily), ivermectin and diphenhydramine HCl (400 µg/kg and 4 mg/ml SC, respectively), kaolin-pectin (1 mL/kg, four times daily PO), and multivitamin syrup (0.1 mL once daily PO).

■ RESULT AND DISCUSSION

The cat's death was likely caused by malabsorption and systemic inflammation from intestinal damage. Evidence of *Toxocara cati* larval migration in the lungs, observed in gross and histopathological examinations (Figure 1B, 1C), showed hemorrhage, congestion, necrosis, and edema, potentially contributing to chronic lung disease (Cardillo *et al.* 2014). Diagnosis of toxocariasis was based on detecting *T. cati* eggs in fecal samples and histopathological evidence of necrosis in the crypts of Lieberkühn and intestinal villi (Figure 1D). Diarrhea likely resulted from ingesting *T. cati* eggs or paratenic hosts, aligning with Ursache *et al.* (2021) and Bowman (1999), who observed that kittens acquire toxocariasis through these routes.

The cat's health decline, exacerbated by pruritus from scabies, probably led to opportunistic *Staphylococcus* sp. overgrowth near the eyes. Maggio and Pizzirani (2009) noted that *Staphylococcus* sp., while part of the normal flora, can become pathogenic under immunocompromised conditions. Pruritus from scabies arises from allergic reactions and skin inflammation (Jackson & Marsella 2021). Mites burrow into the skin to lay eggs, causing damage and triggering the immune system to release inflammatory mediators like histamine, leading to intense itching (Hnilica & Patterson, 2011). Leukocytosis likely resulted from inflammation (Thrall *et al.* 2022), while thrombocytopenia from gastrointestinal hemorrhage is consistent with Ellis *et al.* (2018) and Darcy *et al.* (2018), who linked digestive tract hemorrhage to reduced platelet counts in cats.

■ CONCLUSION

The cat was diagnosed with toxocariasis, conjunctivitis, scabies, leukocytosis, or thrombocytopenia. Diarrhoea caused by toxocariasis causes gastrointestinal bleeding and thrombocytopenia, while conjunctivitis and scabies complications contribute to the cat's death.

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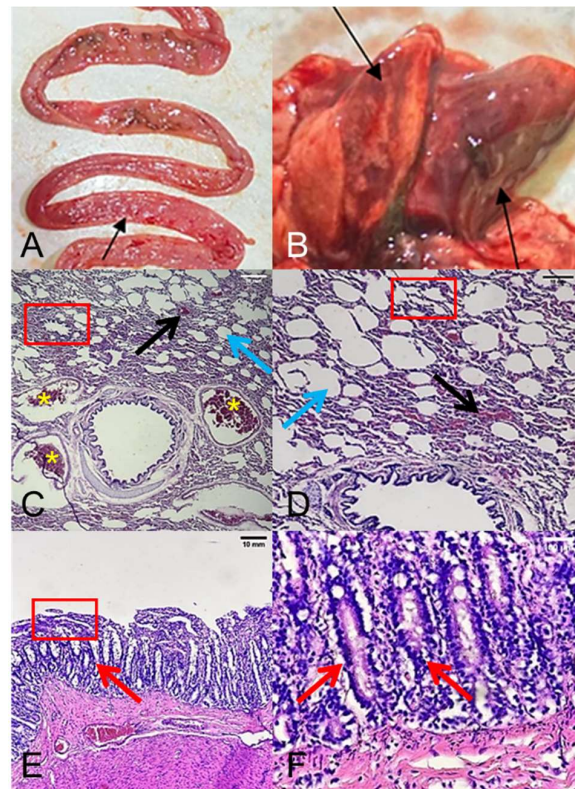


Figure 1. Anatomical pathology and histopathology results in cats. (A) Haemorrhage (black arrow) in the intestine, (B) haemorrhage (black arrow) in the lungs. (C) Congestion (*), necrosis (box), haemorrhage (black arrow), and oedema (blue arrow) in the lungs (HE 40×), (D) necrosis in the intestinal villi (box) and necrosis in the Lieberkühn crypts (red arrow) (HE 100×).

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