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Diagnosis and treatment of deep pyoderma in a Maine Coon cat

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ABSTRACT: Pyoderma is a bacterial skin infection that can lead to systemic complications, if left untreated. This case report describes a Maine Coon cat presenting with a wet, oozing wound on its tail accompanied by frequent self-trauma through biting and scratching. Based on the anamnesis, physical examination, and clinical findings, the cat was diagnosed with deep pyoderma. Treatment included antibiotics, anti-inflammatory drugs, antifungals, and supportive vitamin therapy. The wound showed significant improvement over the 30-day treatment period, with drying observed, although complete closure had not yet occurred. Continued supportive therapy is recommended to promote complete recovery.

Keywords:
deep pyoderma, Maine coon cat, infectious disease, therapy, skin

■ INTRODUCTION

Deep pyoderma, a severe bacterial skin inflammation, is more common in dogs than in cats (Tilley *et al*. 2020). It is classified into surface, superficial, and deep types based on infection depth and is often linked to systemic disorders (Kristianty *et al*. 2017). Pyoderma frequently involves fungal, bacterial, or parasitic infections, with opportunistic pathogens like *Malassezia pachydermatis*, *Candida* spp., and dermatophytes (*Microsporum canis* and *Trichophyton* spp.) thriving in cases of weakened immunity or skin damage (Dworecka-Kaszak *et al.* 2020).

Bacterial pathogens, including *Staphylococcus aureus*, *Staphylococcus pseudintermedius*, and *Escherichia coli*, are commonly implicated in complex cases and often exacerbate the condition. These infections can become particularly severe when complicated with antibiotic resistance (Chaudhary *et al*. 2019). Mixed infections, such as those involving *Staphylococcus epidermidis* and *Trichophyton rubrum*, can lead to extensive skin lesions that require antibiotic and antifungal therapy (Ouchi *et al.* 2011).

To date, no cases have highlighted this combination of factors in Indonesia. This case study aimed to examine the diagnosis, management, and treatment of deep pyoderma in a cat treated at the Animal Clinic Solo, providing valuable insights into addressing this condition in clinical practice.

■ CASE

Signalment: The patient was a 3-year-old male Maine Coon cat weighing 5.6 kg with a white and gray coat. **History**: The cat presented with a 2-week history of an open, wet wound on its tail and oozing fluid due to frequent biting and scratching. Previous treatment with topical antibiotic powder did not result in significant improvement. **Physical Examination**: Vital parameters, including body temperature, heart rate, respiratory rate, capillary refill time (CRT), and skin turgor, were within the normal ranges. However, alopecia was noted around the base of the tail, accompanied by inflammation, open wound exuding fluid, and white, sand-like aggregates. **Diagnostics**: Blood chemistry and cytological examination were performed. Cytology from skin scrapings or fine-needle aspirates provides valuable information for identifying the bacterial pathogens responsible for lesions (Yu & Vogelnest 2012). **Diagnosis**: The cat was diagnosed with deep pyoderma based on the clinical signs and diagnostic findings. **Treatment**: The therapeutic regimen included itraconazole (100 mg), cephalexin (500 mg), methylprednisolone (8 mg), and Coatex Vetplus®, which is a supportive skin supplement.

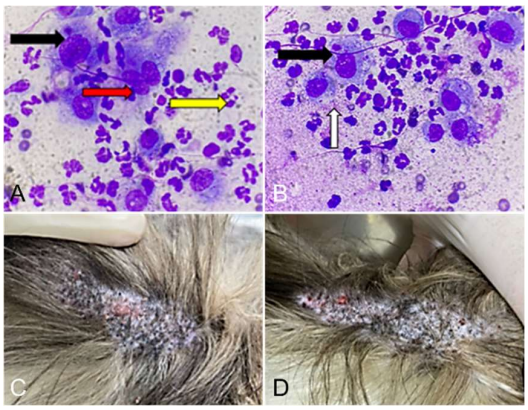

Figure 1. Cytological examination of the cat's tail base with two views (A) left and (B) right. Yellow arrow: neutrophil degeneration; white arrow: phagocytosed bacteria; black arrow: macrophages; red arrow: nuclear moulding of histiocytes. (C) Lesions in the base tail before therapy. (D) The lesion at the base of the tail showed improvement after therapy.

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■ RESULTS AND DISCUSSION

The Maine Coon cat presented with a primary lesion at the base of the tail. Blood profile analysis revealed subnormal parameters indicative of systemic immune response abnormalities including hypochromic erythrocytes, eosinopenia, lymphopenia, and monocytosis. Microscopic cytological examination confirmed deep pyoderma accompanied by fungal infection.

Cytological analysis revealed predominant neutrophil degeneration, pyogranulomatous inflammation, and histiocytic infiltration containing phagocytosed bacteria, fungal spores, and neutrophils. These findings indicate a chronic inflammatory process localised at the base of the tail, with inflammation extending into the stratum basale. The microscopic cytology findings, visualised in Figure 1A and 1B, highlight the complexity of the infection and underline the necessity of both antifungal and antibacterial therapies.

Treatment and Outcomes

The cat underwent causative, symptomatic, and supportive therapies to treat the deep pyoderma and promote recovery.

Causative Therapy:

Itraconazole (100 mg) was administered at a dose of 5 mg/kg body weight, one capsule daily for 30 days, to inhibit fungal cell membrane formation based on the cytological presence of fungal spores.

Cephalexin (500 mg) was administered at 20 mg/kg body weight every 12 h for 14 d (three capsules daily) to inhibit bacterial growth by preventing cell wall synthesis.

Symptomatic Therapy:

Methylprednisolone (8 mg) was administered at 0.5 mg/kg body weight daily for 5 days. As a glucocorticoid, methylprednisolone binds to and activates intracellular glucocorticoid receptors, thereby reducing inflammation and addressing allergy-related symptoms.

Supportive Therapy:

Coatex Vetplus® was provided; one capsule was provided daily for 30 days to maintain and care for the cat's coat and support skin recovery (Plumb *et al*. 2013).

The 30-day treatment resulted in wound drying with no fluid or white sand-like aggregates remaining. However, complete closure of the wound had not yet occurred, and the alopecia persisted at the base of the tail. Continued supportive therapy with Coatex Vetplus® was recommended to enhance recovery. The post-therapy results showing improvement in the wound and skin conditions are presented in Figures 1C and 1D.

■ CONCLUSION

Based on the anamnesis, physical examination, and clinical findings, the patient was diagnosed with deep pyoderma and treated with a combination of antibiotics, antifungals, anti-inflammatory drugs, and vitamins. After 30 days of therapy, the wound improved significantly, drying substantially but not fully closed. Supportive care, including vitamin supplementation, continues to promote further healing and recovery.

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