

Feline Calicivirus Infection with Chronic Stomatitis, Rhinitis and Otitis in a Bengal Cat in Indonesia

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ABSTRACT

The purpose of this case study was to describes the infection with feline calicivirus manifested as chronic stomatitis, rhinitis and otitis in a Bengal cat. A cat was presented to the clinic due to inappetence, weakness, and frequent vomiting. It had never been vaccinated, and never been given anthelmintic. It had an open wound on its back, and purulent discharge was appearing in the ear and nose. Using an antigen test kit, Feline Calicivirus was tested positive for infection with Feline calicivirus. Therapies were given to relieve clinical signs however, the patient could not be saved. Prevention of feline calicivirus could be done by vaccination, as well as maintaining cleanliness of housing and equipment.

Keywords: cat, chronic stomatitis, feline calicivirus, otitis

ABSTRAK

Tujuan studi kasus ini untuk menggambarkan kejadian kasus infeksi *Feline Calicivirus* dengan stomatitis kronis, rhinitis dan otitis pada kucing bengal. Kucing dibawa ke klinik dengan keluhan tidak mau makan, lemas, muntah beberapa kali. Kucing belum pernah mendapatkan vaksinasi, dan belum pernah diberikan obat cacing. Terdapat luka terbuka di punggung, dan terdapat leleran mukopurulen dari hidung dan telinga. Hasil pemeriksaan menggunakan tes kit antigen menunjukkan infeksi *Feline Calicivirus*. Terapi simptomatik dilakukan untuk meredakan gejala klinis, namun pasien tidak dapat diselamatkan. Pencegahan kasus ini dapat dilakukan dengan vaksinasi, serta menjaga kebersihan kandang dan peralatan.

Kata kunci: kucing, *feline calicivirus*, otitis, stomatitis kronis

INTRODUCTION

Feline calicivirus (FCV) is a pathogenic cat virus from the family of Caliciviridae. Infection with FCV causes a variety of clinical manifestations, including acute respiratory disease and mouth ulcer (Radford et al., 2007). Different strains of Calicivirus cause different signs, but most common signs are inappetence and a hoarse voice (Clarke and Lambden, 1997). The clinical signs of cats infected with calicivirus including

infrequent sneezing, coughing, runny nose, and excess discharge from the eyes. There are ulcers in the soles of feet, and in the nose, mouth, tongue, and lips which cause inappetence due to pain during chewing food (Clarke and Lambden, 1997, Radford et al., 2009). This virus is transmitted through direct contact, and fomites such as saliva, nasal discharge, ocular discharge, and faeces of an infected cat (Radford et al., 2009). Berger et al. (2015) reported that in Switzerland cats, infections with FCV showed clinical signs of

upper respiratory syndrome, oral ulceration, gingivostomatitis, limping syndrome, and virulent systemic disease. In cases of calicivirus infection, cats could develop otitis (Nuttal, 2020).

Many recovered cats can shed and transmit this disease even if they do not show clinical signs. In the environment, the virus is resistant to many disinfectants and can survive outside the cat's body for up to 8 - 10 days (Ossiboff and Parker, 2007).

Recovery following treatment of a case of Feline calicivirus with gingivo-stomatitis was reported by da Silva et al. (2018). The chosen therapy in this case was multiple antibiotics and immunomodulatory with interferon-alpha 2A.

Cases of FCV suspected stomatitis was rarely reported in Indonesia. Andriani et al. (2018) reported in Indonesia that the cats infected with FCV showed clinical signs of ulcers in the oral cavity, gums, and tongue, accompanied by multifocal necrosis in the oral cavity. As Feline Calicivirus case with Stomatitis and otitis was rarely reported in Indonesia, the aim of this study was to describes the clinical signs and blood biochemistry of a case of FCV in Surabaya, Indonesia, to contribute to the development of knowledge on diagnosis and therapy of the disease in tropical region.

CASE STUDY

Clinical conditions

The patient was a one-year-old male Bengal cat. The cat was weak, inappetence, had vomited for several times, had an open wound on its back, with blood-tinged mucopurulent discharge appeared in the nose and mucopurulent discharge appeared in both

ears. The cat has never been dewormed or vaccinated. The cat had a 2.4 Kg body weight, the respiratory rate was 32 times/minute, heart rate was 92 beats/minute, body temperature was 41°C, skin turgor was >2 seconds, with Capillary Refill Time (CRT) >2 seconds, and a pale oral mucous membrane. The cat had an observed stomatitis.

Laboratory tests

Routine blood tests was performed and indicated that the HCT and Haemoglobin were low, while L/M and Platelet were higher than normal values. MCHC, WBC and granulocytes were in normal ranges. Feline Calicivirus (FCV) antigen test using a commercial kit (S&C Biotech, Shanghai, China) showed a positive test.

Diagnosis

Based on the history, clinical signs, and laboratory tests, the cat was diagnosed with Feline Calicivirus, stomatitis, rhinitis and bacterial otitis

Treatment

The cat was given chloramphenicol ear drops two times a day after cleaning the ears for the otitis. Two weeks later, the condition had improved, and the ears looked drier and cleaner. Other treatments included Enrofloxacin given intramuscularly to treat possible bacterial infections. Ringer Lactate fluid therapy was given to relieve the dehydration. The multivitamin injection was given intramuscularly for three days, and povidone-iodine solution was given topically for treating the back wound.

After fourteen days treatment, the cat experienced hypothermia, where the temperature dropped drastically to 37°C. The cat was then exposed to infrared radiation and given warming light in the cage. After four days of hospitalization and continuing the therapy for stomatitis and otitis, the cat started to walk normally, and the stomatitis and otitis had started to heal, but new wounds developed on the face and hind legs. The cat died after the next seven days of hospitalisation. The total treatment time was 21 days.

DISCUSSION



Figure 1. Chronic haemorrhagic stomatitis accompanying infection with Feline calicivirus in a Bengal cat



Figure 2. External otitis with dried purulent discharge forming a waxy layer in the ear of a cat diagnosed with Feline Calicivirus



Figure 3. Purulent nasal discharge as a result of secondary bacterial infection in the infection with Feline Calicivirus.



Figure 4. A purulent wound on the back of a Bengal cat is occurring in an infection with Feline calicivirus.



Figure 5. Positive result of an FCV antigen test

Table 1. Hematological Test Result

Test	Result	Unit	Reference Interval	Description
HCT	17.20	%	24.00 – 55.00	low
HBG	6.30	g/dL	8.00 – 15.00	low
MCHC	36.60	g/dL	30.00 – 36.90	normal
WBC	17.10	K/ μ L	5.00 – 18.90	normal
GRANS	8.00	10^9 /L	2.50 – 12.50	normal
GRANS	47.00	%	-	normal
L/M	9.10	10^9 /L	1.50 – 7.80	high
L/M	53.00	%	-	normal
PLT	561.00	10^9 /L	175.00 – 500.00	high

Physical examination and laboratory tests indicated that the cat was anaemic. Ulcers in the nasal and oral cavities may have caused haemorrhage and inappetence and contributed to the development of anaemia. Purulent rhinitis and otitis were also found in the current case leading to a few differential diagnoses included infections with Feline Calicivirus, Feline Rhinotracheitis Virus and Chlamydia. The FCV positive test indicated that at least an infection with FCV was involved, and the lymphocytosis and monocytosis revealed in blood test further supported the involvement of a viral disease. The fact that the number of blood platelets was also higher than normal level, indicated a response to haemorrhage in the nasal and oral cavities due to ulcerations. High level of platelet in the blood could be an indication of blood parasitosis, but the condition was not present in the current case.

The cat may have died due to severe anaemia resulted from continuously development of new ulcers and haemorrhage, and untreatable secondary bacterial infections following an ulcer formation.

In order to prevent the infection with calicivirus, vaccine administration should be carried out to a cat at 2.5 months of age and a booster should be given on the next month after the first injection. In the local setting, vaccine available currently was a polyvalent

vaccine contained Panleukopenia, Rhinotracheitis, Calicivirus, and Chlamydia. Routine vaccination with available vaccine preparation could be advisable to prevent infection with Feline calicivirus in cats in Indonesia.

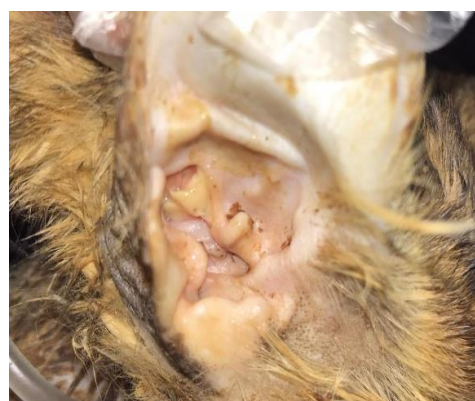


Figure 6. The otitis was resolved a few days after topical therapy with Chloramphenicol.

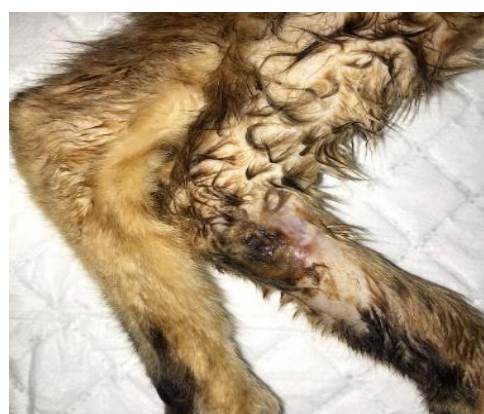


Figure 7. A new ulceration is developed on the foreleg of a cat infected with Feline calicivirus.



Figure 8. A new ulceration is developed on the face area below the eye of a cat infected with Feline calicivirus.

CONCLUSION

The cat was diagnosed with Feline calicivirus with chronic stomatitis, rhinitis and otitis based on anamnesis, physical examination and laboratory tests. Therapies carried out based on clinical signs were not successful in the current case. Prevention of FCV can be performed by vaccination and maintaining cleanliness of cat housing, equipments and environment.

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