Feline cutaneous histoplasmosis: The first case report from Thailand

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1. Introduction

\textit{Histoplasma capsulatum} is a dimorphic soil-borne fungus. It forms mycelia in the environment and changes to be a yeast form in the host's body \cite{1-3} and \cite{4}. It can affect both humans and animals (dogs and cats). Besides, it is the second most reported fungal infection in cats following cryptococcosis \cite{5}. \textit{H. capsulatum} grows in soils contaminated with bird or bat droppings. The primary route of infection is inhalation of mycelium from contaminated areas. The endemic areas of \textit{H. capsulatum} include North, Central, and South America, Africa, India, and Southeast Asia \cite{6}. Histoplasmosis is also prevalent in Thailand. A previous study reported that people in Chiang Mai and other northern provinces of Thailand were infected by this fungus living in the environment \cite{7}. In addition, that study indicated that soil samples contaminated with bat guano, pigeon or chicken droppings were the cause of infection. Besides, a retrospective study revealed that patients had a higher risk of histoplasmosis infection than healthy people \cite{8}. Nevertheless, no information on histoplasmosis has been reported in small animals in Thailand. Consequently, this is the first case report of feline histoplasmosis in Thailand, diagnosed with clinical presentation, cytology, histopathology, and polymerase chain reaction (PCR).

2. Case report

The case was a 2-year-old, neutered female domestic shorthaired cat presented with a history of multiple papules and nodules on pinnae, nodules on the nose, and chronic wound at the lateral surface of left radial area for four months. Skin biopsy demonstrated moderate numbers of small, oval-to-round, single-walled yeasts inside the macrophages. In addition, PCR confirmed the sequence of \textit{Histoplasma capsulatum}. This is the first case report of feline cutaneous histoplasmosis in Thailand.
itraconazole at 10 mg/kg for 35 days was applied, recurrence of papules on pinnae and nodules at nasal bridge in the same area was observed. On day 56, amphotericin B Desoxycholate was used to treat the cat by 0.5 mg/kg 2 times a week, together with 5 mg/kg itraconazole PO every 12 h. Amphotericin B Desoxycholate was diluted with 200 ml of 0.9% sodium chloride and 2.5% dextrose solution before injecting subcutaneously. Thereafter, itraconazole dose was declined to 5 mg/kg in order to avoid liver toxicity. The number of nodules at the ear and the nasal bridge decreased significantly but never completely disappeared after 8 injections. On day 84, a firm nodule was palpated at the injection site after the 8th injection. The treatment protocol was changed to fluconazole 50 mg PO once a day. Although the number of
3. Discussion

However, by the phone communication, the owner gave the informa-
oped. The cat still ate and had normal daily activities. Subsequently, the
papules and nodules did not further decreased, no new lesions devel-
oped. The cat still ate and had normal daily activities. Subsequently, the
owner did not further bring the cat for follow up to the hospital. However, by the phone communication, the owner gave the information
that the cat was still stable after a month of fluconazole treatment. (Figs. 1–4)

3. Discussion

This is the first case report of feline cutaneous histoplasmosis in
Thailand, which was confirmed by cytology, skin biopsy, and PCR. The infected cat was usually an indoor cat, but could access the con-
taminated outdoor areas. The mode of transmission of histoplasmosis to the cat was suspected to be inhalation of bird droppings contaminated with the organisms. Apart from skin lesions, this cat did not have any systemic sign. Chest radiography and abdominal ultrasonography did not reveal any abnormality of the organs. Cats affected with histo-
plasmosis normally present with non-speci
disease, depending on the a-
taminated needle puncture[10]. In Japan, the former studies demon-
strated that canine histoplasmosis could be cutaneous in origin, in-
cluding dogs with surgical wounds contaminated with the organism
[11,12]. Moreover, the preceding studies found that cutaneous lesions of histoplasmosis were confined to the interdigital regions of the dog’s paws [13,14]. These case reports might support that H. capsulatum was possible to infect animals via percutaneous inoculation.

After 10 mg/kg itraconazole was prescribed twice a day, a chronic
wound at the left forelimb showed an obvious improvement, and were
completely healed within 28 days. This demonstrated that itraconazole at 10 mg/kg twice a day was more efficient than that at 5 mg/kg twice a day. After 35 days of treatment with 10 mg/kg itraconazole twice a day, the cat started to have recurrent skin nodules at the bridge of the nose and both ear pinnae. The recurrence of those lesions might have been caused by an incomplete clearance of infection or development of drug resistance. Subcutaneous injection of amphotericin B at 0.5 mg/kg twice a week was performed, together with itraconazole treatment, resulting in some improvements. Unfortunately, a firm nodule was subsequently developed at the injection site. It was suspected that the firm nodule was caused by either an adverse effect of amphotericin B or an irritation from injection.

This case report confirmed that histoplasmosis could occur in any young cat with a history of contact with contaminated bird feces. Furthermore, histoplasmosis should be considered as a differential di-
agnosis in cat with chronic skin wounds in endemic areas.

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Conflict of interest

There are none.

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