Indolent ulcer (eosinophilic ulcer ,rodent ulcer) in a cat : A case report

Piyawun Phurahong

Veterinary at Thonglor Pet Hospital, Bangkok , Thailand

Abstract

Indolent ulcer is one of eosinophilic granuloma complex (EGC).It has been called by several names: eosinophilic granuloma, feline eosinophilic granuloma, feline rodent ulcer, eosinophilic granuloma ulcer of cats. A 1 year old persian, female cat presented complaining of a 1 week history of a ulcertive lesion on her center of lower lip. Blood collection was performed to evaluate complete blood count , blood chemistry profile, blood parasite and rule out other symtemic disease such as FIV/FeLV. Direct impression smear method from the lower lip lesion were done. The cytology showed Inflammation was suspected and no evidence of tumor cells. She has been treated with prednisolone dose 2mg/kg/day per oral and taper down for three weeks. Amoxicillin/clavulanate dose 12.5 mg/kg bid per oral. Next 2 weeks after treatment, the lesion was improving with granulation tissue beginning to fill in the area. At one month follow-up, Her lip had regrowned completely.

Key words: Indolent ulcer , cat , rodent ulcer , eosinophilic ulcer, granuloma

Indolent ulcer (eosinophilic ulcer ,rodent ulcer) in a cat : A case report

Introduction

Indolent ulcer is one of eosinophilic granuloma complex (EGC).It has been called by several names: eosinophilic granuloma, feline eosinophilic granuloma, feline rodent ulcer, eosinophilic granuloma ulcer of cats. Indolent ulcer is unilateral or bilateral erosive lesion on the upper lip of cat of any age (Young and Moriello,2006). Less commonly, it occurs on the lower lip or at the back of the jaw behind one of last upper molars. Some cats will also develop an ulcer on the tongue. It is not itchy and seems to cause no pain. As the ulcer progressive, the lip may be partly eroded by a large, ulcerated swelling that exposes teeth and gums. The exact cause of rodent ulcer is unknown, and there is actually no direct connection with rodents. The presence of eosinophils suggests an allergic reaction, parasite problem, or immune problem. Recently emerging evidence shows a possible genetic predisposition in some cats to develop lesion when exposed to allergic triggers , particularly fleas. Eosinophilic granuloma complex is a term used to describe three forms of cutaneous lesions patterns in cats: 1) indolent ulcers. 2) eosinophilic plaque and 3) eosinophilic granuloma. These lesions have a characteristic microscopic appearance due to the presence of eosinophils, which are a form of inflammatory cell. The term is descriptive, referring to the microscopic appearance of the lesion. Definitive diagnosis of the eosinophilic granuloma complex must be made on histopathology (Fondati et al,2001) There are simply too many differential diagnoses which may fool the clinician to make the diagnosis only on visual examination. These would include neoplasia (lymphoma, mast cell tumor, etc), proliferative, non-neoplastic conditions (plasma cell pododermatitis) and infections (herpes virus).

Eosinophilic granuloma complex is a one of hypersensitivity of immune system. Hypersensitive immune system is one which overreacts to a stimulus (Foster,2003). A normal immune system reacts when the body identifies a foreign protein such as proteins on the outside of bacteria. This foreign material which invokes the immune response is called an antigen. The body can react to the antigen by producing protein molecules (antibodies) which bind the antigen. The combination of the antibody bound or attached to the antigen is called an immune complex. In addition to antibodies, various cells can also be activated which produce

chemicals such as histamines which can affect multiple parts of the body. In hypersensitivity, the body produces way too much antibody, the wrong kind of antibody, a large number of antigen-antibody complexes, or antibody to proteins which are not really foreign. In addition, an excessive number of cells may be activated to produce histamine and other chemicals

In this paper, I report a rare cases of Indolent ulcer at lower lip in cat in Thonglor pet hospital.

History

Dam, a 1-year-old persian breed , Female cat, presented complaining of a 1 week history of a lesion on her center of lower lip (pic 2-4).It was not itchy and no pain. Dam was eating well and other clinical sign was normal. She was an indoor cat and she was current on her vaccinations as well as deworming ,FeLV/FIV and FCV in every years.

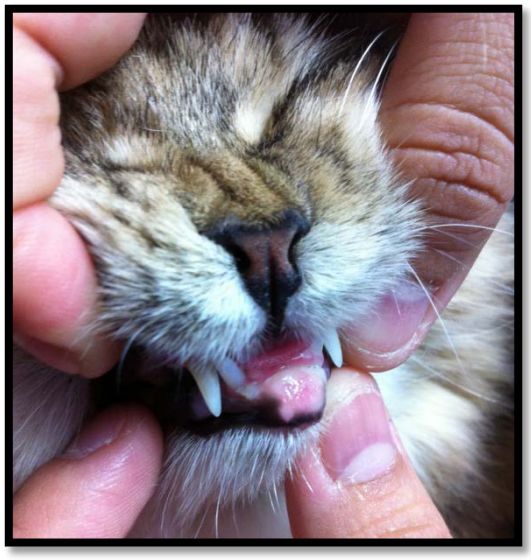
Clinical Presentation

Dam was bright and alert on presentation. The body condition was good , weigh 3.0 kg. The body temperature was 100.2 F .Her hydration appeared normal. The mucous membrane color was pink. Capillary refill time about 2 sec. Heart sound and lung sound was normal. Palpate at abdomen was normal. Her center of lower lip was grossly ulcerated lesion, round shape , firm consistency , diameter about 7 mm. The ulceration was covered in a thin yellow exudate. She not had live fleas or substantial flea dirt present. Her skin did not appear inflamed or irritated other. All other physical exam parameters were normal.

Pic 1

Pic 2

Pic 3



Pic 4

Picture 1 : Dam, a 1-year-old Persian breed, female cat, presented complaining of a 1 week history of a lesion on her center of lower lip.

Picture 2-4 : Show a picture of a ulcerated lesion on center of lower lip, round shape , firm consistency , diameter about 7 mm.

Clinical sign of eosinophilic granuloma comple(EGC)

Feline indolent ulcer-The lesions occur most commonly on or around the upper lips. They start as small erosions which may enlarge and become ulcerated, swollen and disfiguring, but are not usually painful or itchy.

Feline eosinophilic plaque- Usually the lesions are on the abdomen or medial thighs. The lesions are raised, well circumscribed, red, and sometimes ulcerated and can be somewhat large. These lesions are commonly itchy and often secondarily infected with bacteria.

Feline eosinophilic granuloma- The lesions usually occur on the thighs, face or in the mouth. On the skin the lesions are raised, well circumscribed, nodular to linear, firm swellings which may be pink or ulcerated. The lip lesions can give cats a pouty appearance from a swollen lower lip.

Oral granulomas are raised, white to pink nodules or plaques which may be on the tongue or palate. The lesions are usually not itchy. (Young and Moriello,2006)

Diagnosis

In this case ,blood collection was performed to evaluate complete blood count , blood chemistry profile, blood parasite and rule out other symtemic disease sush as FIV/FeLV. Investigation of skin was performed by direct impression smear method from the lower lip lesion of patient . Biopsy skin couldn't be done in this case because the owner doesn't want to invasive investigate. So this case, the diagnose upon the history, clinical presentation, and other laboratory except histopathology investigation.

Diagnosis of indolent ulcer and EGC are made based on clinical signs, skin scrapings with microscopic analysis to identify potential parasites or secondary skin infection, and biopsy of skin lesions. Investigation of the underlying allergic cause is also essential, and may include trial treatment for skin parasites, a hypoallergenic diet trial for possible food allergy, and/or intradermal allergy testing for pollen/dust allergies. Although presumptive diagnosis of indolent ulcer may made by observing the physical appearance of the lesions, biopsy and histopathology are essential for the definitive diagnosis and for distinguishing them from other disease sush as neoplasia, funcal, viral and bacterial infection, foreign body reaction, autoimmune disease etc(Young and Moriello,2006).

Typical histopathological features of eosinophilic granuloma complex are described include :

Feline indolent ulcer-with very recent lesion, there may be significant eosinophilic inflammation, but after a few days, this is replaced by collagen degeneration and a more mixed inflammation pattern which in chronic lesion becomes a mixed granulomatous inflammatory reaction (hyperplastic, perivascular neutrophilic to monocytic inflammation). In established lesion, eosinophilic inflammation is often absent, and circulating eosinophilic is also rare.

Feline eosinophilic plaque- eosinophilic inflammation (often with mast cells and plasma cell) is usually present in these lesion, and there is often a circulating eosinophilic also. Ulceration, necrosis, parakeratosis and acanthosis are all commonly present. Cytology (aspirate or

impression smears) will often confirm the diagnosis by demonstrating large numbers of eosinophils.

Feline eosinophilic granuloma- these are classically collagenolytic granuloma lesion with a florid granulomatous inflammatory reaction around area of collagen breakdown. Eosinophils and mast cell often feature in the lesion but circulating eosinophilia is rarely seen.

Laboratory result

RBC	7.8 x 10^6	(5.5-7.5x10^6)
PCV	42.1	(30-45%)
Total plasma protein	8	(5.4-8.5 g/dl)
Platelet s	447,000	(200-500)
WBC	12,400	(6000-19,000)
Neutrophils	57	(35-75 %)
Band Neutrophils	1.0	(0-3 %)
Lymphocytes	38	(20-55%)
Monocytes	1	(1-4%)
Eosinophils	3.0	(1-4%)
ALT	51	(6-83 U/L)
ALP	36	(0-70 U/L)
BUN	17	(20-30 mg/dl)
Creatinine	1	(0.8-1.8 mg/dl)

Blood parasite : not found

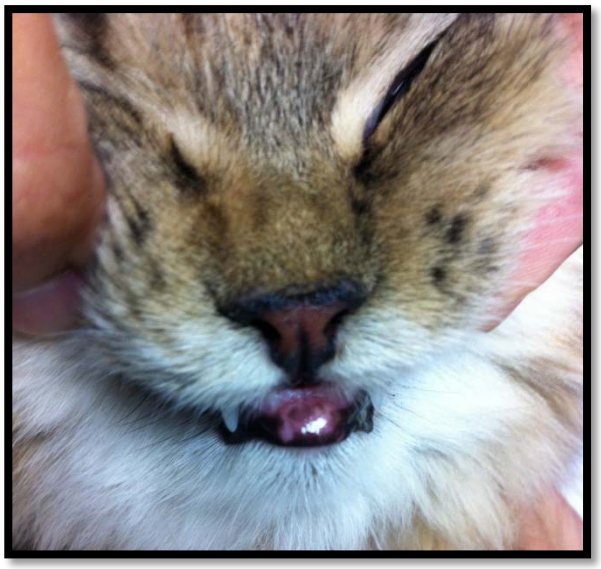
Snap triple : Negative FIV/FeLV/HW

The cytology result from impression smear

The cytology revealed RBC, segmented neutrophils, macrophages and cocci bacteria. Based on slide, Inflammation was suspectd and no evidence of tumor cells. (The cytology was diagnosed by laboratory at Thonglor Pet Hospital.

Treatment and Result

Dam has been treated treatment with prednisolone dose 2mg/kg/day per oral and taper down for three weeks. Amoxicillin/clavulanate dose 12.5 mg/kg bid per oral has been used to control secondary bacterial infection continuely about 2 weeks . The cat returned for recheck one week later. She was eating well. The ulcerative lesion seem to be more improve. Next 2 weeks after treatment, the lesion was improving with granulation tissue beginning to fill in the area. At one month follow-up, Her lip had regrowned completely



Pic 5

Pic 6

Picture 5 : Lower lip lesion after 1 week of treatment with prednisolone. The ulcerative lesion seem to be more improve

Picture 6 : Lower lip lesion after 3 week of treatment with prednisolone. Her lip had regrowned completely

Traditionally, The most common treatment method for eosinophilic granuloma complex involves using glucocorticoid. It has long been used as the initial treatment of choice for these lesions, especially for any of the “exudative” eosinophilic dermatoses. Glucocorticoids (eg. prednisolone dose 1-2 mg/kg/day for four weeks and tapper down) can be given in a variety of different forms, but most often as injections or tablets. Treatment may last for weeks to months due to the fact that eosinophilic granulomas frequently recur and prolonged treatment will minimize the chance of recurrence. Side effects of glucocorticoid are usually not significant in cats, but prolonged use can cause side effects such as an increase in weight. Cyclosporin has been used as oral immunosuppressive drug (Guaguère and Prélaud,2000). Initial dose were 2.5 mg/kg PO q12hr , or 25 mg/cat q24hr or devided q12hr. Evidence of improvement usually was seen within 10 days after initial of therapy (Young and Moriello,2006). Antibiotic therapy should be instituted. Common regimes include : Doxycycline dose 10 mg/kg daily , Amoxicillin/clavulanate dose 12.5 mg/kg bid ,Cefalexin dose 15 mg/kg bid.

There are numerous other treatments that may be used including other drugs, surgical removal of the lesions and cryosurgery or freezing of the lesions with liquid nitrogen while the cat is anesthetized. These treatments are sometimes recommended in recurrent cases. Some forms of eosinophilic granuloma complex are more difficult to treat. In cats with large skin lesions, surgery may be recommended early in the treatment course.

Flea and insect control is very important in the treatment of feline eosinophilic complex. This is due to the suspected hypersensitivity reaction cause of the condition. Insect bites can trigger an exaggerated immune response in affected cats, causing or worsening clinical signs. Some cats respond to elimination or hypoallergenic diets, suggesting an underlying food allergy as the cause. Most cats diagnosed with feline eosinophilic granuloma complex would benefit from a hypoallergenic food trail (Colombini, et al. 2001)

Conclusion and Discussion

Indolent ulcer is one of eosinophilic granuloma complex which found on the upper lip of cats. Less commonly, it occurs on the lower lip. The eosinophilic granuloma complex in the cat actually results in inflammatory reactions of the skin and can be associated with hypersensitivity diseases. Within EGC are the eosinophilic granuloma, eosinophilic plaque, and eosinophilic ulcer (rodent ulcer or indolent ulcer). A combination of the three may occur in one cat at the

same time. It is important to remember that EGC is not a final diagnosis or a specific disease, but only a reaction pattern in cats. In fact, there is a primary cause. The most common cause for EGC is allergies, with the most common allergy being flea allergic dermatitis. Diagnosis of indolent ulcer is based on clinical appearance as well as histopathology, which generally reveals hyperplastic ulcerative superficial perivascular dermatitis with eosinophils or neutrophils, mononuclear cells and fibrosis. In this case couldn't definitive diagnosis because the owner doesn't want to invasive investigate . Therefore, the diagnosis of this case depend on history taking, clinical presentation and response for steroid therapy. Blood eosinophilia and tissue eosinophilia are less common than the other diseases in this complex. In this case, the Blood eosinophil was normal. The major underlying diseases identified with the indolent lip ulcer are flea allergy , food allergy and atopic dermatitis; when these are controlled, the lip lesion resolves.

Reference

Colombini S, Hodgin EC, Foil CS, et al.2001 Induction of feline flea allergy dermatitis and the incidence and histopathological characteristics of concurrent indolent lip ulcers. *Vet Dermatol* ; 12:155-161.

Fondati A, Fondevila D, Ferrer L. Histopathological study of feline eosinophilic dermatoses. *Vet Dermatol* 2001;12:333-338.

Foster, A., 2003. Clinical approach to feline eosinophilic granuloma complex. *Companion Animal Practice* ; 25:p 2-9

Guaguère E, Prélaud P.,2000. Efficacy of cyclosporin in the treatment of 12 cases of eosinophilic granuloma complex (Abstr). *Vet Dermatol* ; 11 (Supplement 1): 31.

Young, M.K. and Moriello, A. K., 2006. Eosinophils and Eosinophilic Disease. *Feline internal medicine*. P.239-244