



ISSN (E): 2277-7695
ISSN (P): 2349-8242
NAAS Rating: 5.23
TPI 2022; SP-11(9): 2777-2779
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www.thepharmajournal.com
Received: 22-07-2022
Accepted: 26-08-2022

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Clinical and cytopathological diagnosis of feline eosinophilic granuloma complex

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Abstract

A six-year-old female DSH cat was presented to the Madras Veterinary College Teaching Hospital with the history of ulcer in the upper lip for past two months. On clinical examination pinkish red ulcerated lesions were observed in upper lip and left lower limb. Blood smear examination revealed neutrophilia. Based on clinical and cytological findings, the condition was diagnosed as feline eosinophilic granuloma. The cat was treated with a combination of antibiotics and steroids along with dietary management following which the skin lesion resolved completely after a month.

Keywords: Cats, feline, granuloma, feline eosinophilic granuloma, feline eosinophilic granuloma complex, feline allergic diseases

Introduction

Feline Eosinophilic Granuloma Complex is a syndrome encountered in feline mostly as a resultant of and subsequent to allergic phenomenon. The common causes of Eosinophilic Granuloma Complex include flea, food and non-flea, non-food induced hypersensitivity dermatitis (Hopke and Sargent, 2019) [1]. However, Scott and Miller (2012) [2] suggested that idiopathic, possibly genetic form of eosinophilic granuloma should be suspected in young cats with typical lesions of granuloma. Cowell and Tyler (2014) [3] have stated that eosinophilic granuloma occur in different forms in cats such as indolent ulcer (mucocutaneous and oral mucosal ulcerative lesion), eosinophilic plaque and as linear raised lesions on caudal thigh, face or oral cavity.

Feline Eosinophilic Granuloma complex is not a fatal disease or condition of cats. But, recurrence of the condition after treatment, complications due to secondary bacterial infection of the exposed skin lesions and delayed healing of the lesion due to frequent scratching of the lesion in an attempt to alleviate pruritus and continued presence of the source of allergy such as insects in the vicinity of cats are the reasons of worry while treating and managing a case of Feline Eosinophilic Granuloma complex. Further, problems associated with site of lesion can occur such as presence of lesions in oral cavity may result in reduced appetite, difficulty in swallowing the food resulting in debility, lethargy and poor skin coat in cats. Diagnosis of Feline Eosinophilic Granuloma complex is based on microscopic examination of direct impression smears and/or histopathology samples from the lesions and after ruling out other dermatopathology conditions in cats.

This article gives an account of diagnosis of Eosinophilic Granuloma complex in a cat by clinical and laboratory examination and its successful treatment and management.

Case history and Observations

A 6 year old female cat of DSH breed weighing 3.2 kg was presented to the Small Animal Medicine – Dermatology ward of Madras Veterinary College Teaching Hospital (MVCTH) with the history of ulceration in the upper lip for past two months. On clinical examination, the animal appeared dull yet the vital parameters were normal. Samples were collected for haematological and biochemical investigation.

Dermatological examination was done to study the gross appearance and distribution of skin lesions which revealed pinkish red ulcerated lesions with irregular margins on the upper lip as well as in the lower left forelimb (Plate 1 and 2). Samples for fungal and bacterial isolation and antibiotic sensitivity testing, FNAC, impression smears and tape impression smears were collected from the identified skin lesions to identify the common causes of skin lesions in cats caused due to ectoparasites, bacterial and fungal causes, cutaneous neoplasms etc.

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Results of Diagnostic investigation

Haematological and biochemical values were within the normal limits other than the blood picture finding of relative neutrophilia. Microscopic examination of Leishman-Giemsa stained FNAC and impression smears of the ulcerative lesions showed dense infiltration of eosinophils along with few neutrophils (Plate 3). Dunn and Gerber (2005) [4] have earlier reported that large numbers of eosinophils and neutrophils are frequently observed on impression smears of feline eosinophilic granuloma complex. They further stated that the presence of more than 10 per cent of eosinophils in the smear is suggestive of eosinophilic inflammatory response. Gross *et al.* (2002) [5] also stated that cytological evaluation demonstrating large numbers of eosinophils are highly suggestive of an Feline Eosinophilic Granuloma lesion along with study of lesions and clinical signs. Tape impression smears and samples collected for identification of ectoparasites, bacteria and fungi were negative. Thus, based on cytology findings along with the gross appearance of the lesions, the case was diagnosed as Feline Eosinophilic Granuloma complex.



Plate 1. Ulceration in the cat's upper lip



Plate 2. Ulcerative lesion in the left forelimb of cat

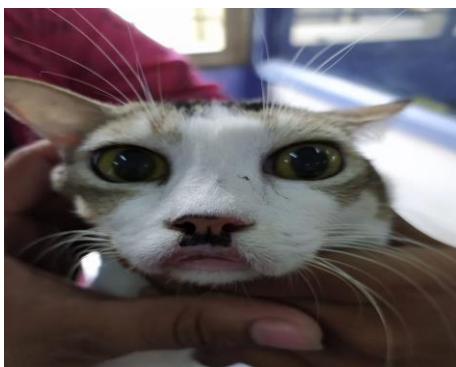


Plate 3: Post treatment appearance of the cat's upperlip

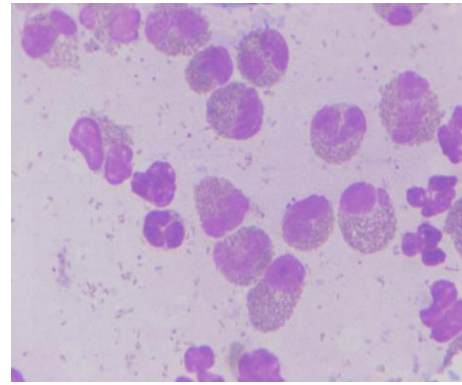


Plate 4: Cytology smear stained with LG stain- Eosinophils seen along with few neutrophils in 400 magnification

Treatment and Discussion

The cat was treated with combination of antibiotic ceftriaxone @15mg/kg 1/v for 7 days and methyl prednisolone @4mg/kg weekly once for 4 weeks intramuscularly. The owner was also advised to give hypoallergenic diet to the cat during the course of treatment. The cat was reviewed at weekly intervals. After a month, the ulcerated lesions resolved completely (Plate 4).

Eosinophilic Granuloma complex is expected to be caused mostly as an allergic reaction subsequent to insect bites such as fleas, mosquitoes and other insects and through a variety of allergens present in food or environment. Scott *et al.* (2001) [2a] have classified Eosinophilic Granuloma complex under miscellaneous skin diseases. Buckley and Nuttall (2012) [6] have reported that the lesions can be severe in many cases and accompanied by varying degrees of pruritus and pain. However, in our case, the cat didn't evince pain and there was no history and sign of pruritus. This correlated with the findings of Hopke and Sargent (2019) [7] who witnessed no pain and pruritus in a 9-year-old neutered male domestic shorthair cat diagnosed with Eosinophilic Granuloma complex. Though eosinophilic infiltration was observed in cytology aspirates of affected skin lesions, eosinophilia was not observed in the cat. In the present case, eosinophilic granuloma was treated with ceftriaxone and methyl prednisolone following which the lesions resolved completely. Foster (2003) [8] stated the therapeutic options for Feline Eosinophilic Granuloma complex as gluco-corticoids, essential fatty acids and cyclosporin and Paterson (2016) [9] claimed antihistamines, glucocorticoids and cyclosporine as the most commonly used treatment options for Eosinophilic Granuloma complex.

Conclusion

The clinical presentation of Eosinophilic Granuloma complex in a cat and its diagnosis by clinical and cytological examination and successful treatment with a combination of antibiotics and steroids and dietary modification has been discussed.

Acknowledgements

The Authors are thankful to the Director of Clinics, Madras Veterinary College, TANUVAS for providing the necessary facilities for the conduct of this study.

Conflicts of Interest

There is no conflict of interest.

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