

Flea Allergy Dermatitis (FAD) In Pet Dogs

¹Amit Panchal, ¹Milan Prajapati, ¹Darshan Parmar, ²Bhupamani Das

¹4th professional Year and ²Assistant Professor (Advisor) Department of clinics
(Parasitology)

College of Veterinary Science & A.H., Kamdhenu University, Sardarkrushinagar, Gujarat-
385506

Introduction

Flea allergy dermatitis is a disease in which a hypersensitivity state is produced in dogs and cats by biting of fleas. When a flea bites your pet, it injects a small amount of saliva into the skin. Dogs and cats can develop an allergy to this saliva and will react to it with severe itching and scratching. This itching sensation may last for up to 2 weeks after last bites. It was described as summer dermatitis occurring as an acute or later a chronic inflammatory condition of the skin.

Epidermiology

Fleas can infest their hosts either by direct contact allowing transfer of adult fleas or sometimes eggs, or through the environment. FAD is the most common dermatological disease in domestic dogs of the USA. Cats are also affected with FAD. It is one of the major causes of feline miliary dermatitis. The majority of cases occur between the age of 1 to 3 years. It has been reported that FAD is most prevalent in summer months. The Flea primarily responsible for FAD is the Flea, *Ctenocephalides species*, the most common flea infesting dogs and cats.

General Morphology

They live as ectoparasites on both mammals and birds. They come under the order: SIPHONAPTERA. They have 2 ocelli. Mouthparts are adapted to piercing and sucking. Head is broadly joined to the thorax and the abdomen has 10 segments. Some fleas have thick heavy spines arranged in rows are known as

“ctenidia and comb” (figure 1.0). These are 2 types, one is genal comb and the other one is a pronotal comb. Fleas have a complete or direct life cycle. Life cycle stages are egg, larva, pupa and adult.



Figure1.0: *Ctenocephalides canis* collected from a FAD affected dog
(Photocourtesy: Amit Panchal)

Epizootiology And Transmission

Fleas are readily transmitted between animal and even between host species as they are non-specific in nature. Fleas require host blood for food so they can survive off the host for only 1 to 2 months.

Clinical Sign

Those that are allergic will typically show dermatitis and characterized by a pruritis. In intense pruritis, dogs show sign on entire body. Chewing, licking, and scratching of these areas are usually evident. Hair in this area may develop brown staining from the licking and often broken off. The primary lesion in dogs with FAD is a

wheel at site of fleas bites which later develop into papules. Dog will often be presented with areas of alopecia, erythema, papules and broken papules covered with reddish brown crusts and scaling. Damage to the skin and hair follicle may cause pyoderma as secondary infection. Sometimes, traumatic moist dermatitis can also occur. When disease becomes chronic it causes generalized alopecia, severe seborrhoea, hyperkeratosis and hyperpigmentation. Similarly in cat primary lesion is papule which becomes crusted and that is called as “miliary lesion”. They are typically found in the back, neck and face. Millary lesion are manifestation of systemic allergy.

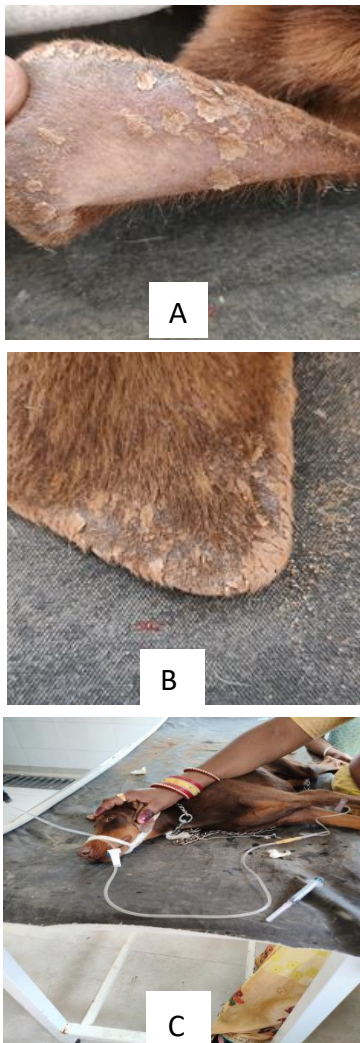


Figure 2.0: a, b, c: Clinical picture of a dog with crusted skin and alopecia

(Photo courtesy: Amit Panchal)

Pathogenesis

Fleas require animal blood for their meal. When they bite host animals they inject some

saliva into the host’s skin. That saliva contains proteolytic enzymes and histamine like substances resulting in irritation and pruritis also some substances responsible for hypersensitivity. Fleas saliva contains low molecular weight haptens. When flea bite to the dogs they show detectable level of circulatory antibodies like antibodies like IgE and IgG. Fleas can transmit as vector for other pathogens like *Dipylidium caninum*, a zoonotic gastro intestinal helminth.

Diagnosis

By visualization of adults fleas or collection of them from the host body. Detection of flea dirt which consists of dried partly digested blood. Circulating eosinophilia is seen in some dogs with FAD. Intra dermal skin testing also followed for diagnosis of this condition.

Differential Diagnosis

In the dogs a differential list could include allergic inhalant dermatitis, Food allergy dermatitis, Sarcoptic or Demodectic mange other ectoparasites and bacterial Folliculitis.

Treatment

Treatment of FAD has basically consisted of breaking the flea life cycle in the environment. Insecticide product containing pyrethrin’s, pyrethroid, carbamate and organophosphate in sprays, shampoos and powder can be used. For dermatitis, anti-inflammatory drug like prednisolone is used at 0.5 mg/kg orally q12 hr for 5-7 days. Also, for reducing hypersensitivity, antihistamine like hydroxyzine at dose 1-2 mg/kg in dog BID or TID can be given.

Prevention And Control:

Prevention is always better than cure. It can be achieved by following measures:

- Through providing a clean environment and housing.
- Daily combing of dogs. If daily not possible, then do it thrice in week.
- Periodically bathing with good shampoo containing herbal or chemical insecticide.
- Nearby places or environments should flea free by using appropriate insecticide.
- Application apply flea repellent spray or powder on dogs.