

Diagnosis and therapeutic management of juvenile onset generalized demodicosis in a pug

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Abstract

The present case report highlights the successful management of juvenile onset generalized demodicosis complicated with secondary bacterial lesion. A young one year old pug presented with history of marked alopecia, hyperpigmentation, lichenification and secondary bacterial lesion. Skin scrapping and haematological examination was performed. Skin scrapping examination confirmed the presence of typical cigar shaped demodex mite. Haematological examination of blood revealed leucocytosis with absolute neutrophilia. Dog was successfully treated with amitraj dip (3ml/L) weekly along with ivermectin (600 µg/kg body weight subcutaneously) for a period of one and half month. Secondary bacterial lesions were controlled by cephalexin orally (@ 22mg/kg body weight orally twice a day, for 21 days and weekly bath benzoyl peroxide shampoo to remove crust, debris, and bacteria. Dog recovered completely from the disease and owner were advised not to bred dog in future as juvenile onset demodicosis is mainly seen due to immune dysfunction, which can be transmitted to future generation.

Keywords: Juvenile Demodicosis, Ivermectin, Amitraj

Demodicosis is common skin problem of dogs caused by *Demodex* spp. mites. Disease can classified as juvenile onset and adult onset depending upon age of dog. Juvenile onset disease can occur in dog with less than 1 year of age due to immune dysfunction whereas adult onset can occur in 4 year and above age dogs due to many underlying causes like diabetes mellitus, hyperadrenocorticism, neoplasia, hypothyroidism, heartworm disease, internal parasitism and leishmaniasis (Muller, 2004).

Depending upon the signs, disease can be classified into two forms i.e localized or generalized. Localized form usually involves face and forelegs whereas in generalized form whole region/ both legs or whole body gets involved (Scott *et al.*, 2001). Major clinical signs are circular patches of alopecia, hyperpigmentation and lichenification. Pruritus is typically absent unless complicated with concurrent allergy or secondary bacterial infection.

Demodicosis is diagnosed by performing deep skin scrapings from multiple affected sites. Presence of typical eight legs cigar shaped adult mites seen under the microscope is confirmatory diagnosis of disease. Treatment involves miticidal therapy (amitraz dip and parenteral ivermectin) and antibiotics for controlling secondary bacterial (Tatter & Patterson, 2008). Prognosis

is good for juvenile onset generalized Demodicosis with cure rate of 70-80% whereas adult onset demodicosis has poor prognosis if underlying cause is not diagnosed or taken care.

Case history and Observations

A young one year old pug dog was presented to Small Animal Section, Veterinary Clinical Complex, LUVAS from Jhunjhunu, Rajasthan with a history of generalized alopecia, hyperpigmentation, lichenification and secondary bacterial lesion (Fig. 1a & 1b). Deep skin scrapings from multiple sites was collected and sent to laboratory for examination. Blood collected in EDTA vial was subjected to haematological examination.

Typical cigar shaped eight legged adult mite (Fig. 2) was evident on skin scrapping which confirmed the case to be of demodicosis. Hematology revealed increase in leucocyte count ($22.4 \times 10^3/\text{cumm}$) with absolute neutrophilia (90%). On the basis of history, clinical findings and laboratory confirmation, disease was diagnosed to be of juvenile onset generalized demodicosis complicated by secondary bacterial infection. Leucocytosis with absolute neutrophilia in present study is similar to results of studies conducted by Reddy *et al.*, (2015) and Sharma *et al.*, (2018).

Definite therapy was started with injection ivermectin @ 600µg/kg body weight subcutaneously

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Fig. 1. Marked alopecia involving forelegs, ventral aspect of body and face.



Fig. 2: Deep skin scrapings examination showing typical cigar shaped demodex adult mite under 10X microscope



Fig. 3: Marked improvement in condition of dogs with reduced bacterial skin lesions after one month treatment



Fig. 4: Complete remittance of face lesions after 3 month of treatment

once a fortnight and application of amitraj dip once a week for six weeks. For controlling secondary bacterial infection, cephalexin @ 22mg/kg body weight orally twice a day and weekly bath with shampoo containing benzoyl peroxide as adjunctive therapy was advised for 21 days. Along with the above treatment, fatty acid supplementation orally was recommended. Case was followed and after one month marked improvement is seen with emergence of hair follicles and subsidence of secondary bacterial lesion (Fig 3a & 3b.). Therapy with amitraj dip, ivermectin and fatty acid supplementation was continued for next one month. After three months of treatment and follow up, dog showed complete recovery with absolute remittance of clinical signs and fresh growth of hair follicles (Fig.4a & 4b.). Similar to the present study, Sharma *et al.*, (2018) treated dogs with ivermectin, amitraz, antibiotic, benzyl peroxide shampoo, along with supportive therapy in a month.

Conclusion

In present case report, Juvenile generalized demodicosis in dogs was diagnosed and treated completely

with three months of treatment. As the disease occurs due to immune dysfunction which is heritable therefore owner was advised not to use dog for breeding purposes.

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