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SUCCESSFUL TREATMENT OF CANINE DEMODICOSIS WITH IVERMECTIN

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Case History, Clinical Examination and Diagnosis

A male bulldog, aged one year and weighing 30 kg, attended the outdoor clinics of the Department of Clinical Medicine and Surgery, University of Agriculture, Faisalabad for the treatment of a skin problem. The history revealed that the condition had existed for about 2 months before recourse to professional treatment. The owner had medicated the dog with Tara-meera (*Eureka sativa*) oil orally and locally but the condition had remained unresponsive. Clinical examination revealed a reddened skin with few bleeding areas and alopecia. Papules, and a few pustules were present almost all over the body. Dorsal aspect of the body was worst affected (Plate 1). Intense pruritus was present and the subject would nibble at the accessible affected areas leading to bleeding. The vitral parameters of health (rectal temperature, pulse, and respiration rates) were within the normal ranges. A diagnosis of demodectic mange was reached on the basis of typical clinical signs and a positive skin scraping examination (Muller *et al.*, 1983) which revealed all stages (eggs, larvae, nymphs and adults) of the parasite.

Treatment:

i. Gentamicin 5% (Inj. Elkogent; Elko Org., Karachi) 3 mL IM for first 3 days.
ii. Ivermectin 1% (Inj. Ivotek; Star Labs., Lahore) 2 mL SC, repeated weekly for 5 rounds of treatment.

The skin lesions started drying up one week after initiation of therapy. By day-14 post first injection (i.e., at the time of 3rd weekly injection of Ivotek), only a few papules were present; most other had dried up. However, microscopic examination of skin scraping remained positive for demodectic mange mites till day-14 post first injection. On day-21 post first Ivotek injection (i.e., at the time of 4th weekly injection of Ivotek), the skin had completely dried and changed to light grayish colour from the original reddish appearance. The skin scraping examination was negative. Similar observations were made at the time of next weekly round of treatment (i.e., 5th Ivotek injection given on day 28 post first injection). Treatment was not associated with any local or systemic side effects.

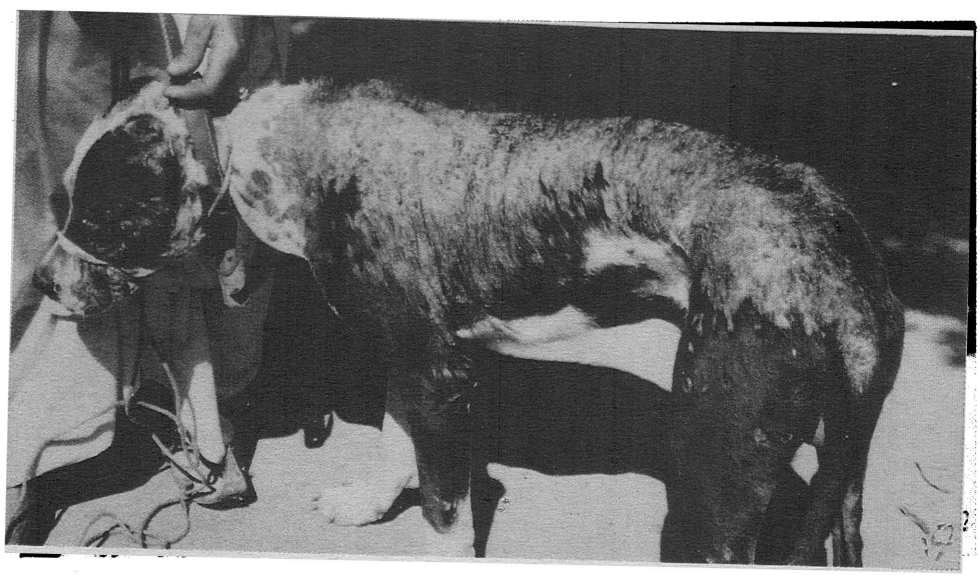

Plate 1: A case of canine demodicosis. Note the severity of infection on dorsal surface of the body.

DISCUSSION

Several topically acting therapeutic agents such as amitraz (Floz *et al.*, 1983; Folz *et al.*, 1984; Muhammad *et al.*, 1989), selenium sulphide, dichlorvos, and rotenone (Hungerford, 1990), have been used with variable results in the treatment of canine demodicosis. According to Baker (1970) cited by Hungerford (1990), most of the local treatments fail because the *Demodex* parasite is located deeply in the skin where the life cycle is spend. The parasite is easily destroyed by mild antiseptics, which fails merely because they do not come in contact with the mite. As such, a systemically acting acaricide (such as ivermectin) is needed to circumvent this problem. In one study (Muhammad *et al.*, 1989), a single administration of ivermectin along with parenteral administration of immunoactivator, levamisole (thrice a week for 3 consecutive days) and IM antibiotics, streptopenicillin (for first 5 days) failed to affect a cure in 6 canine demodectic cases. In fact, frequent administration of very high doses of ivermectin is the only effective treatment available at present. Australian worker, Tinson (1988) cited by Hungerford (1990) noted that ivermectin (Avomec), though only registered at present for cattle, has been completely successful in about 50 cases where he has used it. He used five times recommended dose for cattle i.e., 1 mL/10 kg body weight SC once weekly for 4 weeks. In the present study, 3.3 folds higher dose rate (666 μg/kg b.wt.) than the recommended dose repeated weekly for 5 weeks affected a clinical and parasitological cure. This total dose (3.3 mg/kg) is lower than the dose (4 mg/kg) used by Tinson (1988) cited by Hungerford (1990).

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