

Successful Therapeutic Management of Knemidocoptiasis in A Budgerigar (*Melopsittacus Undulatus*) – A Case Report

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Abstract

A blue coloured male Budgerigar (*Melopsittacus undulatus*) was presented to the Veterinary Clinical Complex, VCRI, Orathanadu, with the history of pruritus, feather loss, yellowish lesion on the face, legs and feet with decreased appetite for the past one week. On clinical examination the bird appeared dull, depressed with scaly lesion on face and legs. Parasitological examination revealed the presence of adult *Knemidocoptes* sp., The bird was treated with oral Ivermectin @ 200µg/kg body weight specify duration and interval, benzyl benzoate topical application along with multivitamin supplementation. The bird was uneventfully recovered after two weeks of treatment.

Keywords: Budgerigar, *Melopsittacus undulatus*, *Knemidocoptes* sp., Ivermectin, Benzyl benzoate

People rear birds as pets for a variety of reasons which includes their colour pattern, vocals and beautiful attributes. Budgerigar (*Melopsittacus undulatus*) is a popular pet bird in India, just next to pigeons, both in urban and rural areas. They are also known as the common pet parakeet or shell parakeet and popularly nicknamed as budgies. Because of its small size, inexpensive cost and their ability to mimic human speech, it is the world's third most popular pet after domesticated dogs and cats (Bhadesiya *et al.*, 2021). Knemidocoptiasis (scaly leg mange) is a common skin condition in older birds and fowls worldwide, particularly in tropical regions. It is not an economically significant condition in chickens due to its delayed development and lack of lameness in infested hosts. These *Knemidocoptes* mites primarily affect by burrowing into the feet and shanks of the birds, inhabiting beneath the epidermal scales (Harwood and James, 1979). *Knemidocoptes pilae* causes scaly face/leg mange in budgerigars and spongy lesions on the feet, cere, beak and eye (Bhadesiya *et al.*, 2021). The transmission of *Knemidocoptes* sp., in highly susceptible budgerigars occurs either by direct or indirect contact (Maria *et al.*, 2014). The current paper deals with the occurrence of *Knemidocoptes* sp., infestation in a budgerigar and its successful therapeutic management.

Case History and Observation

A blue coloured male budgerigar (*Melopsittacus undulatus*) (Fig. 1) was presented to the Exotic and Special Species Medicine Referral Clinic, Veterinary Clinical Complex, Veterinary College and Research Institute, Orathanadu with the history of pruritus, feather loss, yellowish lesions on the cere, beak, legs and feet with inappetance for the past one week. Clinical examination of the bird revealed scaly and crusty lesions over the cere, beak and legs. Scrapings from lesions were processed by adding 10% sodium hydroxide solution and subjected to centrifugation process. Further, the sediment was examined for ecto-parasites (Soulsby, 1982) under low power microscopy. Microscopic examination of skin scrapings confirmed the presence of *Knemidocoptes* sp., (Fig. 2, 3) characterized by a globose body, short stumpy legs, two longitudinal chitinized bars at the level of the legs and absence of spines on the dorsal surface.

Treatment and Discussion

The bird was administered with ivermectin @200µg/kg orally every once in a week for two consecutive weeks, multi-vitamin syrup @ 1ml every day. The owner was advised to apply topical treatment to the affected bird with 25% benzyl benzoate. Following two weeks of treatment, the follow-up scrapings examination revealed the absence of mites.

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Fig. 1. Budgerigar with scaly crusty lesion in face (cere) and legs [arrows]



Fig. 2. *Knemidocoptes* sp., in x100 magnification

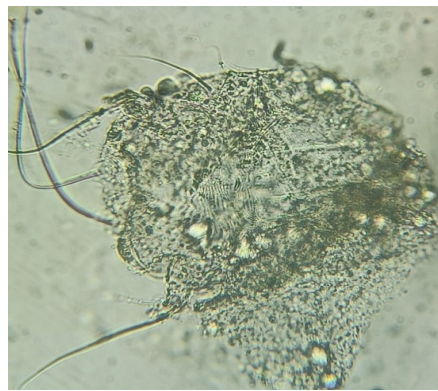


Fig. 3. *Knemidocoptes* sp., from scrapings in x 400 magnification

Mange caused by mites (*Knemidocoptes* sp.) burrow into the feet and shanks of affected birds, living beneath the epidermal scales, and particularly harbours in the stratum spinosum (Urquhart *et al.*, 1987). Soulsby (1982) documented three major species of *Knemidocoptes* that produce scaly legs in birds worldwide. *K. mutans* causes scaly leg mange in adult chicken, while *K. pilae* and *K. jamaicensis* could cause mange in different bird species. *K. gallinae* causes depilumng itch in domestic fowls. *K. pilae* infestation may remain latent for a long period until triggered by stress, such as cold or new environment in budgerigars. Scaly face in the budgerigar is considered pathognomonic for knemidocoptiasis (Greve, 1986) with hyperkeratotic encrustations on the beak, cere and legs (Koski, 2002) affecting the preching and respiratory functions (Ladds, 2009). The present case also reports the presence of both scaly face and legs in the bird.

Ivermectin is commonly used to treat both ectoparasites and endoparasites in veterinary practice. In the present case, the oral administration of ivermectin along with topical application of benzyl benzoate proved

to be highly effective in treating *Knemidocoptes* sp., infestations in budgerigar. Disinfection using formalin will address a effective prevention in transmission of mites between the birds.

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