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## Bumblefoot in a pigeon (*Columba livia*): A clinical case report

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### Abstract

Avian bumblefoot or ulcerative pododermatitis is a term used to denote inflammatory, infectious or degenerative conditions of the avian foot and can cause mild swelling and redness to ulceration of the planter surfaces of feet and toes. This report documents the clinical case of a rescued Rock Pigeon (*Columba livia*) which was diagnosed with bumblefoot based on the clinical observations. The Rock Pigeon was successfully treated and eventually released using a therapeutic treatment protocol involving systemic antibiotic administration, local antibiotic application, bandaging of the affected portion with supportive therapy. This case report describes the successful therapeutic management of ulcerative pododermatitis or bumblefoot in a Pigeon.

**Keywords:** bird, bumblefoot, pigeon, pododermatitis

### Introduction

Bumblefoot is a term that presents inflammatory, infectious or degenerative conditions of the avian foot; This condition can range from mild swelling and redness of the plantar surfaces of the feet and toes to ulceration and potentially cellulitis and osteomyelitis [1]. Pododermatitis is a common foot disease encountered in exotic caged birds, rehabilitated wild birds, and poultry [2]. Bumblefoot usually commences due to repeated trauma to the weight-bearing plantar surfaces causing devitalization of skin and allowing the subsequent invasion of bacterial pathogens [3]. *Staphylococcus aureus* is the most commonly isolated pathogen; Additionally, *E. coli*, *Pseudomonas* spp., and sometimes yeast or fungi are often encountered [4, 1]. *S. aureus* may successfully get entry through the body surfaces because of tissue damage or because of their potential to colonize and multiply in the presence of predisposing factors such as viral infections, immunosuppression, stress or starvation [5]. Bumblefoot often results in a chronic condition that may cause a loss of function, and occasionally septicemia and death [4].

### Materials and Methods

A pigeon was rescued in a debilitating condition. It was observed that the bird had already lost his right limb, distal to the mid-tibiotarsus with a completely healed wound along with haphazardly cut primary and secondary feathers indicating that the bird was held captive. On clinical examination, the bird was weak, dehydrated, having a prominent keel bone and a swollen plantar surface with an ulcer on footpad of the left limb. Because of an ulcer on the footpad and improperly cut feathers, the bird exhibited difficulty in bearing weight on his left limb and inability to fly. The body, as well as feathers, were carefully searched for the presence of any signs of injury and ectoparasites if any. Based on clinical examination, the condition was diagnosed to be Ulcerative Pododermatitis. An impression smear of the lesion was taken for microscopic examination but no bacterial presence was observed.

### Results and Discussion

The pigeon was kept in captivity during the period of treatment. The bird was offered a mixed grain diet and clean drinking water. Soft bedding was provided in the form of a clean cloth. A 4-pronged therapeutic regimen suggested by Remple, includes systemic antibiotic therapy, direct intralesional antibiotic delivery, surgical debridement and a protective foot casting were

followed by administering Amoxicillin and Potassium Clavulanate (Augmentin Duo Oral Suspension®) @ 125 mg/kg b.wt. q12h orally for seven consecutive days to prevent secondary bacterial infection; The ulcer on the plantar surface of the left limb was initially gently handled by debridement to remove the dirt, attached dried faecal matter and dead skin [3]. Following debridement, the ulcer was carefully washed and cleaned with warm clean water and Povidone-iodine. Mupirocin ointment (T-Bact ointment®) was applied topically over the entire plantar surface of the affected left limb, after which ball bandage was applied in such a manner that it assisted the bird in weight-bearing while providing relief from the pressure of weight as the bird only had a left limb. The above protocol was followed every alternate day for a period of 4 weeks. To reduce pain and inflammation Inj. Meloxicam (Melonex®) @ 0.1 mg/kg b.wt. q24h was administered for three consecutive days by an intramuscular route. Supportive therapy included oral multivitamin supplement (Vimeral®) @ 0.5 ml every alternate day till the end of treatment.



**Fig 1:** Lesion on presentation



**Fig 2:** Ball bandaging of affected foot



**Fig 3:** Lesion after 10 days of treatment



**Fig 4:** Completely healed lesion

Avian bumblefoot is a complex disease with multiple etiological factors which requires aggressive surgical and clinical attentiveness. There are many suggested aetiologies of bumblefoot, including - injury, self-induced injury, incorrect perching, poor perch hygiene, excess perching weight and inactivity, type III or I hypersensitivity, hypovitaminosis A, cardiovascular changes [6]. However, according to Graham, (2016), aetiology varies according to species and specific environmental conditions and management systems [1].

Although, in this clinical case, with the absence of any significant microscopic finding and only left limb of the pigeon, it can be said that the pigeon developed ulcerative pododermatitis maybe because of the excessive pressure of weight-bearing on a single limb, improper perching or excess perching weight. Improper nutrition may have played a vital role in the development of bumblefoot. Although, with the lack of history, the information relating to potential risk factors such as nutrition, bedding, activity and housing was absent. The findings of the present case indicated that treatment with systemic and topical antibiotic along with proper bandaging and supportive therapy as well as an early diagnosis made an uneventful recovery in the pigeon.

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