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Clinical report on canine filariosis due to *Dipetalonema reconditum*

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Abstract
Microfilariae are normally found in the peripheral blood of canines and found longer duration in the circulation until ingested by the bloodsucking arthropods. Majority of the species of canine microfilariae are distributed in blood and tissues; it could be detected by staining protocols. In this study blood smear, micro haematocrit and modified Knott's techniques were followed for the identification of the microfilariae. Among these techniques, Knott's found to be more sensitive than other method. The morphological features of *Dipetalonema reconditum* were studied and depicted in the figure

Keywords: *Dipetalonema reconditum*, Knott's technique, micro Haematocrit technique

1. Introduction
Dirofilariosis in canines is caused by several species of filariids, among these *Dirofilaria immitis* is the most pathogenic is responsible for congestive heart failure in dogs. Similarly *Dipetalonema reconditum* has important role and responsible for subcutaneous nodules (Rani *et al.*, 2010) [5]. In India, the occurrence of *Dirofilaria*, *Acanthocheilonema* and *Brugia* species have been reported in dog and cats (Gogoi, 2002: Ananda *et al.*, 2006) [3, 1]. Diagnostic methods for these filarial infections include harvesting of circulating microfilariae from peripheral blood and these were examined by direct smears, staining techniques, modified Knott's technique and the Wylie's filtration technique (Grieve *et al.*, 1983) [4]. Similarly development of *D. reconditum* takes place in fleas (*Ctenocephalides canis, Ctenocephalides felis, Pulex irritans*), ticks (*Rhipicephalus sanguineus*) and lice (*Heterodoxus spiniger*) as intermediate hosts. Infective larvae develop in the fleas within seven days and the prepatent period in dogs is 61to 68 days (Farnell & Faulkner, 1978) [2]. No pathogenic effects have been precluded but its differentiated must be made from those of *Dirofilaria immitis.*

Material and methods
A Labrador dog was presented to the teaching veterinary clinical complex (CVSc) Hyderabad with clinical history of in appetence, dull appearance, loss in body weight, swelling on abdominal area & medial aspects of hind limbs since two months. The dog was examined clinically and no external parasites were found on its body. Since history is differentiating with haemoprotozoan's, blood was collected in vaccutainer containing EDTA in order to rule out the diagnosis and status of anemia. Soon after collection, thin smears and buffy coat were prepared and stained with Leishman's staining. microhaematocrit tube which contains buffy coat was examined under low power of microscope (100X) for the presence of microfilariae.
Subsequently modified Knott's technique was performed by adding 1 ml of blood, 9 ml 2% formalin was added and mixed properly followed by centrifugation at 2000 rpm for 5 min. The supernatant was discarded and the sediment was examined under microscope. After three days, the dog was succumbed and brought to the post mortem and reveals the nodular eruptions on the subcutaneous tissue.

Results
Thin stained blood smears (five) were examined under low power of microscope, out of these three smears were showed presence of microfilariae. The examination of the buffy coat tube shows moving microfilariae under 100X, In Knott's method also microfilariae were detected. The morphological studies of microfilaria showed blunt anterior end and the tails has a small hook/U shape, referred as "button hook."

Which is similar to the microfilaria of *Dipetalonema reconditum.* Though morphological differentiation of microfilaria was difficult by staining methods, Post mortem examination confirms perfect diagnosis. In this study No adult worms were found in the heart and it indicates the possibility of larvae of *Dipetalonema reconditum*, however we could not recover any adult worm from the subcutaneous tissue.

Discussion

The morphological feature of the detected microfilariae are in line as described by (Soulsby EJL 2006) [6] and it was confirmed to be *Dipetalonema reconditum*. The number of microfilaria was comparatively less in the blood in comparison with (Ananda KJ 2006) [1]. Out of the all three methods, the knott's technique was more sensitive and than the smear method. Infections with *Dipetalonema reconditum* are subclinical and the accurate diagnosis of *Dipetalonema reconditum* infections in dogs is important in order to prevent miss diagnosis of heartworm infection.

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