An incidence of Co-infection of Rabies with Canine Distemper in a Pup

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ABSTRACT

A Labrador pup was brought to the Infectious Disease Unit, Madras Veterinary College, with the symptoms of ocular discharge, temporal twitching and circling movement and with a dog-bitten wound. Ocular swab and corneal impression smear were sent for Polymerase Chain Reaction and Direct Fluorescent Antibody Test (DFAT), and they were positive for Canine Distemper (CD) and Rabies, respectively. The animal was placed under observation for Rabies and died on day-7. The impression smear of the brain was also positive for rabies with DFAT. Since CD is clinically indistinguishable from rabies, care must be taken to rule out rabies, since both viruses attack the nervous system.

Keywords: Pup, Rabies and Canine Distemper co-infection, DFAT.

In India, both rabies and CD are hyper-endemic (Vanak *et al*., 2007), and the country also has a large proportion of unvaccinated stray dog population. Hence, the chances of getting co-infection are there for any unvaccinated domestic or stray dog. In this study, a case report of co-infection of rabies and canine distemper in a pup is recorded with confirmed diagnostic test results.

CASE HISTORY AND OBSERVATION

A three-month-old Labrador retriever male pup was presented to the Small Animal-Infectious Disease Unit of Madras Veterinary College Teaching Hospital (MVCTH) with a history of pyrexia, bilateral ocular discharge, vomiting and temporal twitching. The puppy was unvaccinated against prevalent viral diseases. On physical examination, a dog- bitten-wound was observed in the neck of the animal and based on the anamnesis expressed by the owner. An ocular swab was collected and subjected to Nested Reverse Transcription Polymerase Chain Reaction (nRT-PCR) to diagnose canine distemper virus, whereas the corneal impression smear was examined for rabies with DFAT. Then, the animal was placed in a UOR (Under Observation for Rabies) unit, MVCTH. The owner of the animal was advised to visit and feed the animal daily. On day-7 post observation, the animal was found dead. On post-mortem examination, the impression smears from the brainstem and hippocampus were collected and subjected to DFAT.

TREATMENT AND DISCUSSION

The puppy was treated with Lingers lactate (RL - @10mL/kg) I/V, Ondansetron (@ 0.2mg/kg) Pantaprazole (@ 1mg/kg) I/V, Tribivet (@ 1mL/kg) I/V on the first day before admitting into UOR. From day-2, the animal was observed in UOR daily for the general appearance, behaviour, feeding habit and defecation. The animal was dull and reluctant to take feed until day 5. On day-6, the animal was in lateral recumbency and died on day-7. The ocular swab showed a positive result for CD Virus with nRT-PCR (Fig. 1). Impression smears of the brain and cornea revealed the presence of apple green fluorescence under DFAT. (Fig. 2 and 3). Co-infection of rabies and CD had been reported in wild species such as *Procyon lotor* and *Vulpes vulpes* in the USA (Moessner *et al*., 2023). Marino *et al*. (2024) also found concurrent infection of rabies and CD in Ethiopian wolves. In India, CD and rabies co-infection is recorded in a domestic pup for the first time. Even after the observation of classical signs of CD, like temporal twitching, it could be suspected that the case might also be rabid, especially in unvaccinated dogs. As a disease of public health importance, rabies should be ruled out in a dog exhibiting any CNS signs by isolating the dog for at least 10 days.

SUMMARY

CD may not present with classical signs at all times and is clinically indistinguishable from rabies. Moreover, rabies poses a major public health danger. Hence, it is suggested to continue with the treatment of CD in dogs after getting the negative result for rabies, as neglecting to suspect rabies without ruling it out might disseminate the virus through the saliva of infected animals and lead to the possibility of contracting the rabies virus by attendants and veterinarians who attend to the case.

Fig .1 nRT-PCR result shows CDV P –Positive control 5 – sample (ocular discharg)e) N-Negative control

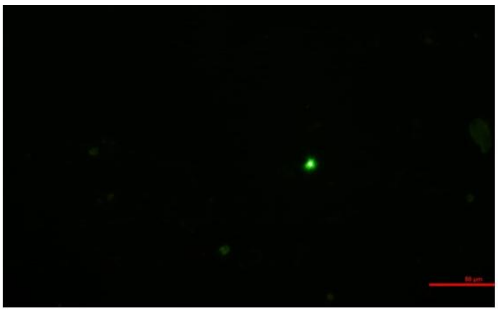

Fig. 2– DFAT – Brain impression smear shows apple green fluorescence

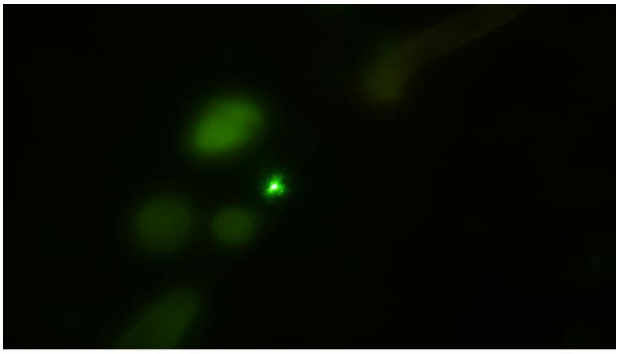

Fig. 3– DFAT – Corneal impression smear shows apple green fluorescence

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