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Canine distemper in labrador cross-bred bitch with a history of road accident: A case report

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Abstract

Canine distemper disease is a highly contagious viral infection and often highly deadly infection in canidae. It is distributed all over the world and mainly leads to more morbidity and mortality in younger ones. The canine distemper virus is belong to paramyxoviridae and genus morbillivirus. This Virus could be found in respiratory tract, gastrointestinal tract, urinary tract, lymphoid tissues and CNS. The CDV can be spreads mainly by inhalation through air droplets, oronasal secretions, blood and urine, feces, skin and fomites which are contaminated with the secretions of infected animals. The present case report a labrador cross-bred bitch aged a year old was reported to us with the history of dull and depressed in behaviour, discharges from the both eyes, anorexia and diarrhoea for the past 2 days. While clinical examination it noticed that nasal and ocular discharges, blepharitis, temporal twitching and also an involuntary movement of jaw (chewing gum) and also body temperature, heart rate and respiratory rate were increased. The CBC relieved that lymphopenia. On the basis of history, clinical signs, symptoms and hematological test that bitch was diagnosed as Canine distemper. Further treatment was given by symptomatically, prophylactically and supportively because there is no antiviral treatment for this disease. The treatment was effective and animal recovered but nervous sign chewing gum was still noticed. Vaccination at regular intervals will help us a lot to control this disease.

Keywords: Canine distemper, chewing gum, lymphopenia, hard footpad, treatment

Introduction

Canine distemper disease (CDD) is a highly contagious viral infectious disease and often highly deadly infection second only to rabies affects Canidae (Dogs, Foxes, Wolves, Raccoon) and a broad range of wild and aquatic animals [1, 2, 3]. It is distributed all over the world and it leads to more morbidity and mortality in young population of dogs but at same time it noticed as less as in vaccinated animals [4, 5, 6].

This is caused by Canine Distemper Virus (CDV) which is an enveloped, negative-sense and belongs to the group of ss-RNA virus and it is paramyxoviridae and genus morbillivirus [7]. It was first isolated by Carre' in 1905 [8]. It may have mutability and it has required some amino acid changes to get a zoonotic potential [9].

According to the studies it could be found in cells of the respiratory tract, gastrointestinal tract, urinary tract and as well as in lymphoid tissues, and central nervous system (CNS) [10]. The CDV can be spreads mainly by inhalation through air droplets, oronasal secretions, blood and urine, feces, skin and fomites which are contaminated with the secretions of an infected animals [11, 12]. Some studies were reported CDV has trans-placental transmission also [13].

This virus has an incubation period range between 1-3 weeks, after that affected animals show different clinical signs [14]. The clinical manifestation in the infected animals show different signs includes; from respiratory system aspect mucopurulent nasal discharge, coughing, sneezing, dyspnea and respiratory distress. Gastrointestinal tract aspect anorexia, increased salivation, tooth enamel hypoplasia, vomiting, diarrhea and dehydration. Ocular signs like eyelid swelling, conjunctivitis and purulent secretions. CNC system aspect signs like seizures, hypersensitivity, chewing-gum movement, paddling, ataxia, chorea, muscle tremors, cycling movement, and plegia or paresis. Cutaneous signs are hyperkeratosis of the nostril and footpad and red rashes and also affected animal will show immunosuppression [15, 16, 17]. Furthermore, animal naturally affected with CDV have some alteration of hematological and serum chemistry parameters [18]. In routine laboratorial tests affected animals may have lymphopaenia, neutrophilia with elevation of liver and muscle enzymes (aspartate aminotransferase, alanine aminotransferase), blood urea nitrogen and creatinine were consistent clinical findings of canine distemper [19].

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Vaccination at regular intervals is a basic and also one only tool to avoid the disease [20].

Case History

An 11 months old Labrador cross-bred bitch was brought to us with the history of a road accident. While examinations it found that there were no major injuries but it had simple aberrations on body parts. The wounds were cleaned and treated well. After a month of gap the same bitch was brought to us that time it aged around a year and with signs of dull and depressed in behaviour, discharges from the both eyes, anorexia and diarrhoea for the past 2 days.

Clinical History

It was approximately 12 kgs of body weight. While taking the history of animal it came to know that bitch has no proper history of vaccination. Then examinations of bitch was observed that it has nasal discharges in both nostril and purulent discharge in right eye and blepharitis, temporal twitching and also involuntary movement of jaw (chewing gum) were observed. Further clinical examination animal had high body temperature 104.5 degrees F, increased heart rate (145bpm) with no arrhythmia, increased respiration (58 bpm) and slight increase in capillary refilling time (CRT <3 second). The footpad of the bitch was found hard to feel (hyperkeratinization). For the further diagnosis about 3 ml of a blood was collected from the suspected animal by puncturing a saphenous vein in a vacutainer. Blood sample was immediately brought to the local laboratory for routine hematological and biochemical examination.



Inflammation of eyelids and Discharge in Eye



Discharge from nostrils and Hyperkeratinization



Hyperkeratinization of Footpad

Diagnosis

The CBC revealed that lymphopenia, decreased in value of PCV (32%), TEC ($4.5 \times 10^6/\mu\text{L}$), Hb (10.5 g/dl) may be due to effect on hematopoietic system by CDV and increased

MCV (80.9f L), MCH (31.2 pg) and MCHC (39.3 g/dL) also noticed in blood analysis. This was mainly due to leukemia. Moreover, serum biochemical analysis of infected dog showed increased in level of ALT, AST, BUN, TB and creatinine along with decrease in level of TP from the normal range. These findings were very helpful in further support the diagnosis. On the basis of history, clinical signs and symptoms especially distemper myoclonus and hardening of footpad due to hyperkeratinization that bitch was diagnosed as Canine distemper.

Treatment Protocol

There is no specific antiviral treatment for the canine distemper disease so symptomatically, prophylactically and supportive treatment was planned with anti-pyretic drug (inj. Analgin @ 2mg/kg of b.wt through IM) to reduce body temperature, antibiotic (inj. Ceftriaxone sodium @ 25mg/kg of b.wt through IV) to avoid further secondary bacterial infections, inj. Metronidazole @ 20mg/kg of b.wt through IV to check diarrhea, intravenous 0.9% NaCl and 5% dextrose solution to reduce the dehydration. Along with that inj. Vitamin A and vitamin C were also used as per the recommended dosage.

Then advised the owner to bring the animal for next 5 days for therapy and also prescribed oral form of drugs like ketoprofen syrup, cephalixin powder, metronidazole syrup and multivitamin syrups. For controlling myoclonus, head tilt and tremors pregabalin at 4 mg / kg dosage were used orally. At the same time advised to isolate animal from unaffected animal and to keep the kennel clean. During the treatment period that owner was advised to feed only tender coconut and bread slices along with electoral powder.

Prognosis

The prognosis of the presented case was satisfactory because that owner was fully cooperative throughout the treatment duration. The treatment was found to be effective and animal was recovered up to some extent after 10-15 days, however nervous signs like involuntary movement of jaw (chewing gum) was still noticed.

Discussions

Canine Distemper disease is an important viral disease often fatal infection but it is second only to rabies in Canidae. It mostly affects multiple systems in dogs. At about 10-15 days of post infection, CDV starts spread from replication site [21]. Clinical findings of this study were nasal discharge, ocular discharge correlated with findings of previous studies [22, 23]. Increased body temperature, anorexia and dehydration were noticed in present case. Hard footpads were observed in animal with the history of chronic CD which was hard to touch and when pressure was applied on it, animal showed the signs of pain. Previous studies also reported similar findings [24]. Various neurological signs included partial to generalized seizure, ataxia, and chewing gum fits. Nervous signs were also described by earlier studies [25]. Ezeibe and Udegbumam (2008) [26] reported in dogs with distemper virus, leukopenia initially associated with lymphopenia and later lymphocytosis which leads to leucocytosis. In this case report, significant leukocytosis observed probably due to secondary bacterial infection. Also our haemogram findings were compatible as Ezeibe and Udegbumam (2008) [26] reported.

Conclusion

Most of times the recently weaned pups get this infections because at this stage the maternal immunity that is coming from milk are at its lowest level. Therefore it is recommended to vaccinate the dog at 3 month of age. Vaccination at regular intervals will help us a lot to control this disease until the specific treatment is to discover.

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