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LETTER TO THE EDITOR

# Canine Distemper Virus Infection in Two Badgers *(Meles meles)* from the Black Sea Region of Türkiye [1]
# (Türkiye'nin Karadeniz Bölgesi'ndeki İki Porsukta *(Meles meles)* Kanin Distemper Virüs Enfeksiyonu)

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## Dear Editor

Canine distemper virus (CDV) belongs to the genus *Morbillivirus* of the family *Paramyxoviridae* and it is responsible for a highly contagious and severe disease, known as distemper, accepted as an emerging multihost pathogen in wild and domestic carnivores, non-human primates and marine mammals [1]. Clinical presentations are generally occurring in immune-compromised animals with two main clinical forms: an acute systemic form and a chronic nervous form characterized by abnormal behavior, incoordination, and convulsions up to paralysis [1]. Several families of wild carnivores are prone to be infected with CDV [2]. However, Mustelidae families are the most affected, but CDV has also been detected in the Felidae, Viverridae, Procyonidae, and Ursidae families [1,2]. Mustelids are worldwide, except in Australia and Antarctica [3]. Moreover, the genus *Meles* (Eurasian badger) is one of the most widespread mustelids in the Palearctic region and the northern part of Türkiye [4]. Available data about diseases in this animal species are generally limited to selected infections, such as bovine tuberculosis in the Eurasian badger *(Meles meles)* [5], rabies in multiple species [6], or canine distemper [7] which also has caused a severe population decline in black footed ferrets *(Mustela nigripes)* [8].

Presence of CDV infection in the wild animal cases is very rare in Türkiye. There is only one report which demonstrated CDV infection in a mink *(Neovison vison)*, sampled from a breeding facility [9]. Therefore, we wanted to present naturally occurring CDV infection in two badgers from the northern part of Türkiye within this letter.

Two badgers *(Meles meles)* which found unconsciously lying in the forest of Samsun at different time intervals, first case in September 2020 and the second in June 2022 were brought to the Veterinary Teaching Hospital by local wildlife conservation officers. The patients were accepted to the Veterinary Teaching Hospital within the protocol numbers 15845 and 20983, respectively. All clinical applications to badgers and reporting of the data obtained in this way were carried out with the permission of the local wildlife conservation authorities and Republic of Türkiye Ministry of Agriculture and Forestry within this 21264211-288.04-6158220 approval number. Clinical manifestations of the badgers, whom were about one year old and males *(Fig. 1-a)*, included severe purulent eye discharges *(Fig. 1-b)*, hyperkeratosis of the nose *(Fig. 1-c)*, hyperkeratosis in paw pads (hard pads) *(Fig. 1-d)*, and tonic-clonic convulsions. It was observed that there was no other abnormality in the CBCs except for lymphopenia. Rectal body temperatures (RBT), pulse per minute (P) and respiratory per minute (R) frequencies were detected in badgers as RBT (37.0°C, 37.5°C), P (120 bpm, 130 bpm) and R (30 rpm, 40 rpm) respectively. Pre-diagnosis CDV infection was suspected at both badgers. Later CDV Ab rapid test kits were performed and according to the test results a high titer (score 6; 1:512) from each sample confirmed the diagnosis. Unfortunately, one of the badgers died while performing diagnostic tests, and the other died after two days during the treatment protocol.

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**Fig 1.** A male *Meles meles* **(a)**, severe purulent eye discharges **(b)**, hyperkeratosis of the nose **(c)**, hyperkeratosis in paw pads (hard pads) **(d)**

One study emphasized the circulation of CDV in the northern part of Lombardy (Italy), with a percentage of positive animals of 39.7% in foxes, 50% in badgers, and 14.3% in stone martens [10]. It is believed that domestic dogs or coexisting wild carnivores infected with the virus were the most likely source, therefore serologic tests are needed to perform for definitive diagnosis in such suspicious cases. Prevention with controlling strategies of distemper is quite important to reduce their diffusion in domestic dogs with wild carnivores. Consequently, more effective control mechanisms should be determined and applied to prevent infectious diseases in wild animals.

## Availability of Data and Materials

The data in this lettering are available from the corresponding author (D. Pekmezci) in case of a request.

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## Competing Interest

The authors declare that they have no conflict of interest.

## Author Contributions

C. Esin, H. Cetiner and G. N. Ozkilic participated in the collection and preparation of samples. D. Pekmezci participated in the examination of both patients and drafted the letter to the Editor.

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