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Case Report

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Case of Paroxysmal Dyskinesia in a Cocker dog from the Camagüey Municipality, Cuba.

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Abstract

Movement disorders in dogs are a diverse group of involuntary movements characterized by neurological dysfunction. The importance of paroxysmal movements lies in their difficulty to be correctly identified and diagnosed. Because of this, they are misdiagnosed as epilepsy, which has resulted in a low number of properly treated clinical cases. In this work a clinical case of paroxysmal movements is presented, which was resolved by modifying the diet

Keywords: *Movement disorder; Movement disorder; Paroxysmal dyskinesia*

Introduction

Paroxysmal movements are a heterogeneous group of involuntary movements characterized by the sudden and reversible onset of neurological dysfunction. In general, two main categories of involuntary movements (IM) originating in the CNS can be distinguished; rigid-akinetic syndromes, and hyperkinesias (Bagley and Platt, 2013; Abdo et al., 2010; Jiménez et al., 2015).

Paroxysmal movements have not been correctly structured within a classification system that provides veterinary professionals with a clear tool for their understanding, thus making the diagnosis and treatment of these disorders difficult. This absence of a classification system is a reflection of: a low number of cases seen by specialists; a low number of published articles; and significantly fewer veterinarians specializing in neurological disorders compared to the number of specialists in human medicine (Strain, 2016).

Consequently, in the veterinary literature there is a low number of published clinical cases about paroxysmal movements, for which a low frequency of presentation of these neurological alterations has been established. Thus, the lack of information about the diagnosis, treatment and prognosis of these neurological disorders has led to a lack of recognition. Therefore, it is possible that the low frequency of presentation of clinical cases is due to a misdiagnosis and not because they are really rare disorders (Bagley and Platt, 2013; Lowrie and Garosi, 2017; Strain, 2016).

Clinical Case

February 2021.

Nanda, a 5-year-old Cocker dog; with a Weight: 13.46 kg.

She treats the dog, for having started at four years, with an episode of repetitive movements, which at the time were treated as a seizure.

Initially he was treated with phenobarbital, by another veterinarian, because they identified the condition with an epileptic seizure, but without a positive response, it is appropriate to point out that these movements appeared and later disappeared, allowing him to continue a normal life, without sequelae, or other manifestations, only isolated episodes.

The appearance of this alteration detected by the owner of it, began at four years; On the first occasion, the patient had vomiting, defecation and she was scared, looking for her owners. She has only hosted four episodes.

Through the anamnesis, with the owner, we were able to delimit the triggering element of this disorder, although we could not identify if what affected the dog was a seizure or another movement disorder, it could only contribute, that episode of involuntary movements occurred sporadically abnormal in the form of sudden contraction or rigidity without loss of orientation, with absence of autonomic signs.

Due to the complexity, for the diagnosis of the patient and because it can only be corroborated by viewing an episode, the owner of the pet was instructed to make a video of the entire manifestation, when the problem will occur; Only in this way could we differentiate na seizure from paroxysmal dyskinesia.

The owner said that the patient's father also had a movement disorder, which was always treated as epilepsy, so it could be inferred that there are hereditary causes.

The owner reports that the instability or loss of strength in the muscles of the hind limbs is the most obvious.

It was inquired about the diet, because it is known that this ailment can occur due to Gluten intolerance, the owner acknowledged that the patient consumes a lot of bread and that she had noticed that after eating a lunch with spaghetti she suffered the first episode, And that on other occasions remember that it has always been after the intake of products with high gluten content.

After viewing the video, where it is clearly observed that we are not in the presence of a case of epilepsy, it was indicated to suspend the medication with phenobarbital, and to provide a diet with gluten-free foods.

It is important to note that different movements are observed, some have a spasmodic character, and others are non-spasmodic.

In the interview with the owner of the pet, she also refers to focused dermatological lesions, which affect the pet at times and disappear.

To diagnose the case, we proceeded with a good anamnesis, although the best way to diagnose a movement disorder is by direct observation of the patient; in these cases, a video obtained by the owner is extremely helpful (Pellegrino, 2019).

The review and an exhaustive anamnesis, including the age of onset, the clinical phenotype of the movements, the precipitating or relieving factors, and the presence of other associated signs, are essential to develop a differential diagnosis (Prikryl et al., 2018).

Case Discussion

According to Pellegrino (2019), paroxysmal dyskinesias (PDs) are hyperkinetic movement disorders, originating in the CNS, whose clinical manifestations include chorea, dystonia, athetosis and ballism, isolated or in combination, that appear and disappear paroxysmally , with absence of clinical signs between episodes. In humans, they may or may not be induced by movements, being called, respectively, kinesigenic (lasting from seconds to minutes) or non-kinesigenic (minutes to hours) (Sanger and Mink 2012).

Due to the fact that pet owners in Cuba cannot have appropriate food for the nutrition of dogs or cats, due to its lack of commercialization; a gluten-free diet was started. Subsequently, no other episode of movement disorder has occurred, which confirmed that hereditary causes, associated with gluten intolerance, can trigger these disorders; that in recent years there has been an expansion of the spectrum of manifestations of paroxysmal dyskinesia due to the identification of genes associated with the disease in dogs (BCAN and PIGN). Advances are also being made in the field of immunology, and links with gluten hypersensitivity in Border Terriers have been reported with so-called canine epileptoid cramp syndrome (CECS) (Garosi, 2016; Lowrie et al., 2018).

The combination of movements observed is in accordance with what has been described for some disorders that can combine both categories of movements, such as paroxysmal dyskinesias (Abdo et al., 2010; Jiménez et al., 2015a; Prikryl et al., 2018; Pellegrino, 2019).

In humans, it has been reported that 40-70% of PD cases are familial, with a large number of genes described associated with them (Cerquera, 2017; Monteiro et al. 2017; McGuire et al. 2018).

The case under study coincides with the literature in which it refers that clinical manifestations occur between 6 weeks of life and 9 years of age (Black et al., 2014; Lowrie et al., 2018).

The clinical signs described in the literature coincide, with those observed and described by the owner of the patient, consistent in that preceding the episodes include seeking attention, eating grass and vomiting (Black et al., 2014). Presenting dermatological manifestations (Hadjivassiliou et al., 2003)

A gluten-free diet was implemented, as reported in the literature, proving its effectiveness as a diagnostic and therapeutic tool (Lowrie et al., 2015; 2016b).

Gluten-associated disorders include a series of multisystemic manifestations as a consequence of an autoimmune reaction to gluten with or without gastrointestinal signs (rumbling, vomiting and diarrhea) (Thomas, 2017; Lowrie et al., 2016).

According to Polidoro et al., (2020), gluten-sensitive paroxysmal dyskinesia is well described in Border Terriers, characterized by episodes of difficulty walking, tremors and dystonia of the extremities, head and neck, and gastrointestinal signs that can be observed between episodes and that improve when a gluten-free diet is fed (Black, 2014; Lowrie, 2016; Lowrie, 2015; Lowrie, 2018).

The benefits of a gluten-free diet have already been observed in other breeds with paroxysmal dyskinesia (Polidoro et al., 2020).

Lowrie et al., (2015) suggest considering the determination of gluten sensitivity and switching to a gluten-free diet in cases of dyskinesia.

On November 20, 2021; This case was reviewed again, and no clinical manifestations of the disease were detected, which indicates the absence of recurrence and proper treatment.

Conclusion

Paroxysmal dyskinesia must be properly diagnosed to avoid incorrect treatments and although there is scientific evidence of its manifestation due to dietary intolerance, there is an important background hereditary component.

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