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A POOR PERFORMANCE OF A SEVEN YEARS OLD SHOWING JUMPING BRAZILIAN HIPISM HORSE DUE TO PPID: A CASE REPORT

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ABSTRACT

Pituitary pars intermedia dysfunction (PPID) is a common endocrine disorder and it can cause laminitis. It is considered a geriatric disorder, because PPID affects horses over the age of 15years. Only a few cases of PPID young horses are described in cases report and, consequently, the clinical signs in these cases are not completely understood. So, the goal of this case report is to describe a PPID positive mare of seven years old, a showing jumping Brazilian hipism horse, which the main clinical sign was poor performance. Therefore, this work is an important case because its describe the necessity of knowledge to understand the PPID in order to improve the horse athletic performance.

Keywords: Horse. PPID. Performance. Young.

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INTRODUCTION

Pituitary pars intermedia dysfunction (PPID) is a common endocrine disorder presenting different clinical abnormalities. These include: polyuria and polydipsia, pendulous abdomen, muscle atrophy, infertility and laminitis (McGOWAN et al., 2013). Hypertrichosis is the most recognized clinical sign associated with PPID and it is considered pathognomonic for the disease (INNERÃ et al., 2013). The pathogenesis of PPID is not completely understood, but it is due to dopaminergic inhibition as a consequence of oxidative stress (SALANDI, 2001). Subsequently, PPID causes degeneration of neurons within the hypotalamus, which is a concern when considering athletic horses (GILGUN-SHERK et al., 2001).

The incidence of PPID is 20-30% and it is considered a geriatric disorder, because PPID affects horses over the age of 15years (IRELAND et al., 2018). According to HEINRICHS et al., (1990), the testing of young animals, less than 10 years of age, is not recommended, unless they are presented with hypertricosis, because young horses are rarely affected. Just a confirmed case of a 7year old horse is described in literature (ORTH et al., 1982). Therefore, it seems that clinical signs may be different according to the age and condition of the animal. Considering these affirmations, the main goal of this work is to describe a case report of a 7 year old Hipism Brazilian horse with poor performance due to PPID.

CASE DESCRIPTION

A female 7 year-old Hipism Brazilian gelding horse was presented for evaluation due to poor performance for 3 months. The owner described the mare as a healthy horse, with no abnormalities, without PU, PD, and No abnormalities were detected in previous routine hematology tests, including hemogram, ALT creatinin, blood glicose, sodium GGT, cholesterol and triglycerides. The only compliment was muscle pain after exercise.

Initial physical examination revealed an ideal body condition score (5/9) and a muscle score 2/3, without abnormalities. Measurement of ACTH, insulin and T4t were performed to endocrinopathies evaluation. For hormone levels, blood was collected at 7 a.m. in a plain vacutainer tube ad, for ACTH, in a plastic EDTA vacutainer tube. The plasma was frozen and sent on ice to the testing laboratory (BET LAB, Rio de Janeiro, Brazil).

No abnormalities were detected in thyroxin and insulin results, but ACTH levels were increased, 89,1pg/mL (references: 9-35pg/mL). This plasma ACTH result was indicating that

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the mare was positive for PPID. Based on the results, the owners were informed of the need to treat the horse and to provide her an optimal health management, including a reduction in the soluble carbohydrates. Carbegoline 5mg intramuscularly every 15 days was used to treat the horse.

After two months, the mare was revaluated by her clinical signs and for assessment of ACTH levels. The horse was jumping again, but there was no complaint about pain. The ACTH levels were in the normal range (32pg/mL).

DISCUSSION

PPID is considered a geriatric disease of horses, since the most affected animals are over 15 years old. There are only a few publications about PPID affecting younger horses, which seems almost impossible to consider a PPID diagnosis in young horses. HEINRICHS et al., (1990) affirm that only animals over 10 years old and with hypertricosis must be tested for PPID. In contrast to these authors, this reported case is the second publication, to our knoledgement, of a seven year old horse that was diagnosed as a PPID animal. So, this report case shows the need to submit the athletic horses to an endocrinology evaluation when the goal is to achieve a better performance.

This horse was evaluated because her poor performance in showing jump competitions and not because of her clinical signs compatible with PPID. The decision of testing a horse for PPID is based in clinical signs, specially considering hypertricosis and laminitis (McGOWAN et al., 2013). Hypertricosisis is considered a pathognomonic clinical sign for PPID (and the prevalence of hypertricosis is about 33% in positive PPID horses INNERÃ et al., 2013). In the report case, the mare did not develop hypertricosis, since the study period. The physiopathology of hypertricosis is poorly understood, but it may develop in cases where the pituitaria disorder increases the levels of α-melanocyte stimulating hormone (α-MSH) (McFARLANE et al., 2004). It can be an explanation to absence of hipertricosis in the; however, the alfa MSH test was not realized, because the commercial test kit was not available until the moment.

Positive PPID horses are predisposed to laminitis, which is the second most prevalent clinical sign in PPID horses (McGOWAN et al., 2013). It seems to be a consequence of hiperinsulinemia, which can lead to reduced hemidesmosome density of the hoof (de LAAT & POLLIT, 2019; STOKES et al., 2019). According to HORN et al. (2019), the laminitis prevalence is 48% in PPID horses and it is more common to young

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PPID horses if compared to older PPID horses. This affirmation differs from the clinical signs observed in the mare of the report case, because this horse did not developed laminitis and, therefore, the mare in this case is a young horse. This fact can be explained due to the mare of this report did not presented hiperinsulinemia. The results of the case report is according to affirmations of MASTRO et al., (2015), that that PPID is a distinct endocrinopathy of insulin dysregulation. Other hypothesis that can explain the results of this report refers to the fact that high levels of α MSH are responsible for increase the levels of insulin in PPID cases (McFARLANE et al., 2004). This explanation can justify the normal insulin levels of the mare of this case report, since ACTH levels are, probably, the only metabolic altered.

It is difficult to judge a positive PPID horse based only on two clinical signs. There is a discussion about this because more recent works show conflicting results about this issue. McGOWAN et al. (2013) affirm that some animals may display subtle clinical sign, which makes the evidence more difficult to think in a possible case of PPID horse. Poor performance in positive PPID horse was described by IRELAND et al. (2018), and that clinical sign was the only claim by the owner and what lead him to make an appointment to the horse.

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CONCLUSION

PPID is a common endocrinopathy in horses that can cause many significant injuries to a horse. Many authors consider that there is a little possibility to find a positive young horse PPID and, so, they consider not prone to test a young animal. This case report shows that even a seven year old horse can develop the disease, but the clinical sign can be different from what all publications considered as patognomonic. Therefore, this work shows the importance to hormone evaluation in horses, specially in athletic ones.

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