

Retrospective study of cutaneous neoplasms in horses treated at the Livestock Development Center of the Federal University of Bahia*

Estudo retrospectivo das neoplasias cutâneas em equinos atendidos no Centro de Desenvolvimento da Pecuária da Universidade Federal da Bahia

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Abstract

The aim of this study was to determine the prevalence of cutaneous neoplasms in horses treated at the Center for the Development of Livestock at the Federal University of Bahia, as well as to correlate it with the coat color, breed, and age of the animal. For that, the attendance records for the last ten years were reviewed. When evaluating the files, 13 cases of cutaneous tumor in horses confirmed by histopathology and cytology were observed. The most prevalent skin tumors were sarcoid (38.5%), melanoma (23%), and fibrosarcoma (15.4%). Regarding the equine coat color, gray and sorrel horses were the most frequent with 30.7% and 23.1% of cases, respectively. As for the equine breed, the mangalarga marchador was the most prevalent (38.4%). Regarding age, 38.46% of the horses were up to 5 years old, 30.77% of the animals were between 4 and 10 years old, and 30.76% were between 11 and 16 years old. In the end, it can be concluded that sarcoid and melanoma were the most prevalent neoplasms.

Keywords: tumors, coat, breed, nodular dermatopathies, horse.

Resumo

Objetivou-se com este trabalho determinar a prevalência de neoplasias cutâneas em equinos atendidos no Centro de Desenvolvimento da Pecuária da Universidade Federal da Bahia, bem como correlaciona-la com a pelagem, raça e idade do animal. Para tanto revisou-se as fichas de atendimento dos últimos dez anos. Ao avaliar as fichas, observou-se 13 casos de tumor cutâneo em equinos confirmado por histopatologia ou citologia. Os tumores cutâneos mais prevalentes foram sarcoide (38,5%), melanoma (23%) e fibrossarcoma (15,4%). Com relação a pelagem, equinos tordilhos e alazões foram os mais frequentes com 30,7% e 23,1% dos casos, respectivamente. Quanto as raças, a mangalarga marchador foi a mais prevalente (38,4%). Em relação a idade, 38,46% dos equinos possuíam até 5 anos de idade, 30,77% dos animais apresentavam idade entre 4 e 10 anos e, 30,76% apresentavam idade entre 11 e 16 anos. Ao fim, pode-se concluir que o sarcoide e o melanoma foram as neoplasias mais prevalentes.

Palavras-chave: tumores, pelagem, raça, dermatopatias nodulares, cavalo.

Introduction

Nodular dermatopathies are one of the main concerns for equine breeders because it provides aesthetic damage to animals and economic losses (Melloti et al., 2020). Neoplasms are the most reported skin lesions, with sarcoid, fibrosarcoma, melanoma and carcinomas being the most frequent types of tumors (Sprenger et al., 2014; Bianchi et al., 2016).

The epidemiological aspects observed in retrospective studies provide support for understanding the biological behavior of

neoplasms (Carvalho et al., 2014). However, little is known about the neoplastic prevalence in horses in Brazil, since few studies present factual data, making it necessary to conduct retrospective research (Melloti et al., 2020; Carvalho et al., 2014).

Thus, the objective was to determine the prevalence of skin neoplasms in horses treated at the teaching hospital of the Livestock Development Center of the Federal University of Bahia - EMEVZ-UFBA, in the period from 2012 to the first quarter of 2022, associating the type of neoplasm with the characteristics of the animal, such as gender, age and coat color.

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Materials and methods

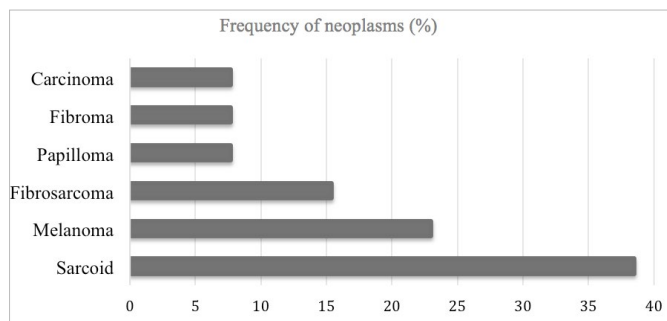
The database was constructed by reviewing the clinical records of horses treated at the Livestock Development Center of the Federal University of Bahia - EMEVZ-UFBA school hospital of the Federal University of Bahia - EMEVZ-UFBA, located in Santo Amaro city, between January 2012 and March 2022. Therefore, were evaluated information regarding the type of cutaneous neoplasia diagnosed by the histopathological or cytological method was evaluated. The other variables observed were gender, age and coat color.

Results

Between January 2012 and March 2022, based on the macroscopic evaluation of the cutaneous lesions, 31 cases suggestive of cutaneous neoplasia in horses were registered. Among these, 13 (41.94%) were submitted to the histopathological or cytological tests and the diagnosis of cutaneous neoplasia confirmed, of these 7 (53.85%) males and 6 (46.15%) females.

The most frequent neoplasms in the horses of this study were sarcoid, melanoma and fibrosarcoma, since 5 (38.5%), 3 (23%) and 2 (15.4%) occurrences were observed, respectively. The other nodular dermatopathies reported were papilloma, fibroma and carcinoma with 1 (7.7%) case each (Graphic 1).

Graphic 1: Frequency of neoplasms with histopathological or cytological confirmation in horses treated at the Livestock Development Center of the Federal University of Bahia - EMEVZ-UFBA between January 2012 and March 2022.



Regarding the coat color, the gray was more prevalent, in which 4 (30.7%) cases were observed, 1 and 3 cases of papilloma and melanoma, respectively. The sorrel coat was the second most frequent, in which 3 (23.1%) cases were found (Table 1).

Table 1: Types of neoplasia correlated with the coat color.

Neoplasm	Gray (%)	Bay (%)	Buckskin (%)	Sorrel (%)	Pinto (%)
Melanoma	3 (23)	0 (0)	0 (0)	0 (0)	0 (0)
Papilloma	1 (7.7)	0 (0)	0 (0)	0 (0)	0 (0)
Sarcoid	0 (0)	2 (15.4)	2 (15.4)	1 (7.7)	0 (0)
Fibrosarcoma	0 (0)	0 (0)	0 (0)	1 (7.7)	1 (7.7)
Fibroma	0 (0)	0 (0)	0 (0)	1 (7.7)	0 (0)
Carcinoma	0 (0)	0 (0)	0 (0)	0 (0)	1 (7.7)
Total	4 (30.7)	2 (15.4)	2 (15.4)	3 (23.1)	2 (15.4)

As for the breeds, 5 (38.4%) animals were mangalarga marchador and 4 (30.8%) animals were campolina. In the other cases, 4 (30.8%) were horses without a defined breed (BDW) (Table 2).

Table 2: Types of neoplasia correlated with equine breeds.

Neoplasm	Campolina (%)	Mangalarga marchador (%)	BDW (%)
Melanoma	0 (0)	2 (15,38)	1 (7,69)
Papilloma	0 (0)	1 (7,69)	0 (0)
Sarcoid	1 (7,69)	2 (15,38)	2 (15,38)
Fibrosarcoma	2 (15,38)	0 (0)	0 (0)
Fibroma	0 (0)	0 (0)	1 (7,69)
Carcinoma	1 (7,69)	0 (0)	0 (0)
Total	4 (30,8)	5 (38,4)	4 (30,8)

Finally, analyzing the animal records according to age group, 5 (38.46%) cases of horses up to 5 years of age were verified, 4 (30,77%) cases of animals aged 6 to 10 years, 2 (15,38%) cases of equine aged 11 to 15 years and 2 (15,38%) horses over 15 (Table 3).

Table 3: Ages of the equine associated with the neoplasm and animal sex.

Case	Neoplasm	Age	Animal sex
01	Melanoma	9 years	Male
02	Papilloma	5 years	Male
03	Sarcoid	11 years	Female
04	Sarcoid	5 years	Male
05	Sarcoid	10 years	Male
06	Fibrosarcoma	16 years	Female
07	Fibroma	2 years	Female
08	Sarcoid	15 years	Male
09	Carcinoma	6 years	Male
10	Sarcoid	1 year	Female
11	Melanoma	16 years	Male
12	Fibrosarcoma	2 years	Female
13	Melanoma	9 years	Female

Discussion

Sarcoid is considered one of the most common cutaneous tumors in horses (Knottenbelt, 2019). A data collection through the analysis of the Equidae register forms of the veterinary hospital of the University of São Paulo, conducted by Baccarin et al. (2011), showed sarcoid as the second most prevalent neoplasm. Carvalho et al. (2014) also conducted a retrospective study of tumors diagnosed by the animal pathology laboratory of the Federal University of Campina Grande, in which the results indicated sarcoid as the most frequent tumor in horses.

In the present study, sarcoid was the most frequent nodular dermatopathy, however, showed no predilection for a specific coat or breed, although the number of cases was low. Currently, the characteristics of horses are being evaluated to correlate them with the development of sarcoid. To date, the risk factors

that predispose the appearance of the tumor form have partially been identified, among them, it was observed that all breeds of horses are susceptible (Knottenbelt, 2019), as well as there is no predilection for coat color (Pineiro, et al., 2015).

Regarding the occurrences of melanoma in the horses of this study, all were gray horses. In equines, the cutaneous form of melanoma is the most reported, being animals with gray coat the most prevalent (Busato et al., 2017). Particular genetic factors of gray horses inhibit melanoma metastasis, so more frequently, well-delimited and encapsulated tumors are seen, which therefore have a lower degree of malignancy (Alberti et al., 2019).

However, a retrospective study by Baccarin et al. (2011) reported a bay coat equine affected by melanoma, that is, it is possible to the occurrence of this neoplasm in animals of another coat, however, according to Busato et al. (2017) these animals are more likely to manifest melanomas malignantly.

Fibrosarcoma and fibroma are other common neoplasms in horses, so the former occurs more frequently when compared to the second (Valvassori et al., 2016). This statement corroborates the findings of the present study, in which 15.4% of the cases were fibrosarcoma and 7.7% were fibroma.

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- Among the neoplasms not observed in this study, it has carcinoma. According to Sprenger et al. (2014) carcinoma, in most locations in the world, is the second most prevalent neoplasm, and the percentage of horses affected by this neoplasm may increase due to epidemiological factors of the site.
- As for the ages of the horses, Sprenger et al. (2014), in a retrospective study, found that animals up to 5 years old had a higher prevalence than animals aged between 6 and 14 years, however, they also observed that animals older than 15 years had a lower prevalence than younger horses, as well as in this study.

Conclusion

It was concluded that among the horses treated at the teaching hospital of the Livestock Development Center of the Federal University of Bahia, sarcoid and melanoma were the most frequent skin neoplasms, being the melanoma most prevalent in animals with gray coat.

Additionally, new retrospective studies are necessary to correlate the neoplastic type with the characteristics of the equine, as well as with the particularities of the region where it is located, to understand the biological behavior of the tumor in the face of different situations.

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