Sahel J. Vet. Sci. Vol. 9, No. 1, pp. 13 - 15 (2010)

1605-8954/10/$25.00 + 00

Sahel Journal of Veterinary Science

Stereotypic Behavior and Stable Accident in a 17-year-old Decrepit Part – Arab Stallion

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ABSTRACT

This case describes a stable accident in a 17-year-old part-Arab albino stallion kept in a stall constructed about 30 years ago. Abnormal behaviors like, wood chewing, cribbing and coprophagy were observed and these could be as a result of a distorted gastrointestinal system pH. The body score of the horse was 2. The stallion was found dead with the head trapped in a hay rack. Postmortem result revealed a greenish frothy exudate in the trachea, congested lungs and watery blood.This paper looks into a possible association of abnormal behavioral events in a horse with an increased risk to stable accident in a 30 years old horse facility.

Key words: Stable accident, behaviour, pica appetite, hay rack, stereotypic behaviour

INTRODUCTION

Housing, nutrition and social isolation are among some of the causes of stereotypic behaviour in horses which could eventually lead to fatal accidents in horse stables (Rowe, 2004).

Since common accidents like horse barn fire (Dwyer, 1999); skull fracture (Williams, 2006; Abubakar *et al.*, 2007) observed in stables or paddocks are rarely reported it is unlikely to observe that a stereotypic behaviour of this nature could lead to a fatal accident.

Today the arrays of fixtures installed in stables are determined by size of the horse and amount of time spent by the horse in the stable (NSW Agriculture, 1996). All these are effort made by man to create a favourable environment for horses, but despite these accidents still occur. These have lead to modifications of fixtures, stable dimensions, lighting, ventilation and partition design overtime in order to reduce the risk of stable accidents. (Wheeler and Zajockowski, 2002).

CASE REPORT

A 17 year old decrepit stallion weighing 213 kg kept in a stall that had a dimension of 2.74/2.74 m made up of concrete, metal and board that was constructed about 30 years ago. The door to the stable was made of a single swing metal door which opened into Isle workplace. The heavy duty hinges had already given way, and the door sagged. The door is 0.96 m high above the ground and 1.31 m wide. The door latches and clasps were at the reach of the horse. The hayrack dimensions were 0.76 m by 0.30 m foot with a height of 0.76 m from the concrete floor (Fig. 1).

The horse had been on fresh pasture from 9:00 am to 6:00 pm daily and returned to the stall where water was provided ad *libitum.* Maize bran and whole guinea corn (Sorghum) was introduced 2 weeks earlier into the ration at a level less than 2.5% of its body weight daily. The signs of wood chewing were seen in the inner part of the hay rack where the head got trapped. The stallion tends to have preference for un-chewed areas of the board probably because of its salty nature compared to areas already chewed.

The attendant reported an abnormal behaviour event which included coprophagy, cribbing and wood chewing, This could be possibly as a result of acidic gut syndrome (Rowe, 2004), considering the nutritional management and possible risk factors involved in sudden introduction of grain in the ration(Kahn, 2005). In the early hours of

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August 20th at about 8:00 am the horse was found dead with its head trapped within the hay rack (Figs. 2 and 3).There was evidence of struggling seen inside the stable, before death. The knee was trapped within the horizontal wooden boards of the hay rack and the partition of the stable. The horse's body score was 2.

The post mortem results revealed a greenish frothy exudate in the trachea, congested lungs, and characteristic watery blood diagnostic for asphyxia.

Fig. 1. Hayrack

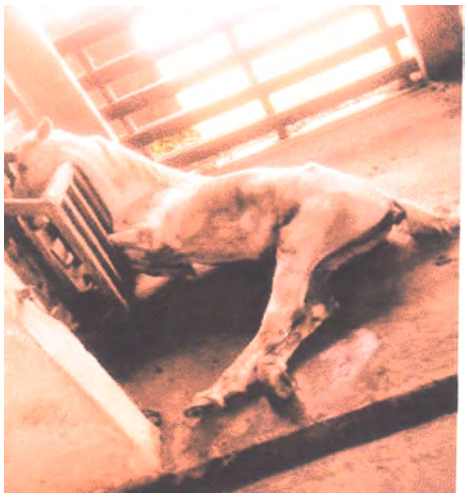

Fig. 2. Head and forelimbs trapped in hayrack

Fig. 3. A closer view of the head and forelimbs trapped which resulted in asphyxiation

DISCUSSION

The space between the wooden board, measuring 8" to 9" was wide enough to allow the muzzle of a horse to access the neighboring stable and within the hay rack, also the space within the wooden board gave way for the muzzle of the horse leading to the ramus of the mandible anchoring the whole weight of the horse on the horizontal wooden board of the hay rack thereby leading to asphyxiation.

This could have been caused by a common behavior (pica or depraved appetite) which ranges from licking to eating foreign substances. Adverse behavior changes reported by the horse keeper could have been as a result of acidic gut syndrome (Rowe, 2004).

Feacal pH and blood D-Lactate analysis was not carried out in order to empirically confirm acidic gut syndrome, but the sudden introduction of maize bran, grain and history of abnormal behavior was considered of clinical significance.

Wood chewing horses seem to exhibit a desire for roughage or cellulose, as do animals that eat their bedding. By nature, horses spend much of their time grazing and if this activity is curtailed, such as when stabled, they are likely to pick other materials to consume. Lengthy period of confinement, without a feed supplement throughout the year can cause boredom and lead to abnormal eating behaviours. In this case aside from the pasture provided on the field, hay was not provided overnight to provide dietary bulk and to keep the horse busy. Imbalanced rations, feeding at the wrong time of the day and heavy worm burden have also been found to contribute to these conditions

(Rowe, 2004). With a vague deworming history and poor nutritional status, this stallion is bound to exhibit adverse behavioral events like pica appetite, wood chewing and other behavioural changes which could have lead to the trapping of the head.

Though the hay rack design and dimensions conformed to the conventional hayrack for horses, however in this case there seems to be a high risk of accidents compared with those fixed above the ground. Hay racks, hay nets, hay bags can keep forages off the ground which is more advantageous than the ones fixed to the ground. In order to reduce the risk of head trapping, the bottom of hay rack, net or bag should be at the wither height for the horses and it should not be too high so as to prevent dust from falling into the horses eyes and nostrils and not too low in order to prevent the horse from been entangled.

The partition design could have been another possible risk factor complementing the behavioral event that lead to the head been trapped. The horse stable partition design also poses a great risk for the horse in this situation the features include a board made up of thick timber wood with a vertical bracing to stabilize the 5 feet high partition. The space between horizontal boards which is 8" is wide enough to allow the hoof get stocked when the horse kicks which may result into fracture and injury to the lower limbs.

Stall partitions should be about 8 feet high and be flush with the stall sub-floor to prevent hooves from getting caught underneath. Boards can be spaced up to 1½ inches apart to enhance air movement between stalls while discouraging encounters between stall occupants. With spaced boards, use vertical center bracing to stabilize the 12-foot-long wall and prevent the boards from breaking if kicked. Horizontal wood edges are vulnerable to being chewed by horses unless capped with metal. Stall walls do not have to be solid all the way to the top. An open panel design at the top allows for better ventilation and easy observation of the horse. It also allows horses to see their companions and other barn activities to decrease boredom and vices. An open panel partition has solid materials along the bottom 48 - 60 inches with an open panel on top. Bars of ¾ to 1-inch diameter pipe are equivalent (Wheeler and Zajockowski, 2002).

There's much disagreement over the proper hay feeding station. Hay rack or nets that are kept high up is disliked by some owners due to the inhalation and irritation of hay dust and its unnatural position. But the truth remains that the risk and benefit should be considered before constructing a horse accommodation. Consideration of economic factors, availability of building materials should not compromise a risk free horse housing.

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