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Research Paper

ACUTE ABDOMINAL AORTIC RUPTURE IN A MARE ON TRANSIT

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A four year old thoroughbred mare in the company of two other horses collapsed and died while on transit from Nairobi to Eldoret (distance of about 311 Km), Kenya. The animal had successfully participated in a horse racing event and was on its way home. Reports indicated that the mare had been healthy for the last one year and had no unusual clinical finding before, during or after racing. The blood smear at ante-mortem was negative for Anthrax bacilli. Necropsy revealed a pale carcass with lots of blood clots in the abdominal cavity, heart chambers devoid of blood and a 10 cm long ventral longitudinal tear of the abdominal aorta. The aortic tear was surrounded with blood clots. The aortic wall was thinner with increased luminal diameter at the level of rupture compared with the unaffected part; suggestive of a pre-existing aneurysm. It is concluded that the patient may have died of hypovolemic shock resulting from severe hemorrhage.

Keywords: Mare, Abdominal aorta, Aneurysm, Rupture

INTRODUCTION

Equine practice is currently confronted with increasing cases of horses suffering fatal aortic rupture (Van der Linde-Sipman *et al.*, 1958; and Ploeg *et al.*, 2012). Acute hemorrhage often follows the rupture leading to signs of acute cardiac failure and death (Roby *et al.*, 1986; and Sleeper *et al.*, 2001). Occurrence of aortic rupture has been associated with hereditary factors (Bijma, 2000), aneurysm (Okamoto *et al.*, 2007), inflammation (Abdul-Hussien *et al.*, 2007), arteriosclerosis and hypertension (Hirai *et al.*, 2006). This condition in horses is reported to

occur within the thoracic cavity mainly at the aortic arch near the ligamentum arteriosum (Ploeg *et al.*, 2012). The current report describes clinical history and necropsy findings of a mare that died of acute abdominal aortic rupture.

Case History and Necropsy Findings

A four year old thoroughbred mare in the company of two other horses collapsed and died while on transit from Nairobi to Eldoret (distance of about 311 Km), Kenya. The animal had successfully participated in a horse racing event and was on its way home. Medical history indicated that the mare had been healthy for the last one year and

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had no unusual clinical finding before, during or after racing. The blood smear at ante-mortem was negative for Anthrax bacilli. Necropsy revealed a pale carcass with lots of blood clots in the abdominal cavity (Figure 1), heart chambers devoid of blood and a 10 cm long ventral longitudinal tear of the abdominal aorta. The aortic tear was surrounded with blood clots. The aortic wall was thinner with increased luminal diameter at the level of rupture compared with the unaffected part; suggestive of a pre-existing aneurysm. It is concluded that the patient may have died of hypovolemic shock resulting from severe hemorrhage.

Figure 1: Photograph of the Mare that Died of Acute Abdominal Aortic Rupture While on Transit Showing Blood Clots (Arrow) from the Abdomen at Necropsy



DISCUSSION

Fatal rupture of the abdominal aorta in an adult horse on transit as described in this paper is not a common occurrence in animals. Most cases of aortic ruptures have been reported to localize just above the aortic valves following excitement in horses (Roby *et al.*, 1986; and Brown and Taylor, 1987) and at the level of the aortic arch near ligamentum arteriosum (Ploeg *et al.*, 2012).

Aneurysms are most important when they affect the aorta in human beings and domestic

animals (Okamoto *et al.*, 2007) since they often lead to aortic ruptures. Patients with aortic aneurysm are often asymptomatic until rupture, leading to death. (Sakalihasan *et al.*, 2005). When symptoms occur in humans, they are vague and include back or abdominal pain (Sakalihasan *et al.*, 2005).

The authors believe that a pre-existing asymptomatic aneurysm on the abdominal aorta may have ruptured due to shaky movements of the truck on a bumpy road. This may have led to severe abdominal hemorrhage, hypovolemia, cardiac failure and subsequently sudden death. Sub-acute to chronic aortic rupture have been reported in patients with aortic tear, allowing for stabilization for several weeks in some cases. In such protracted cases, noted clinical signs may include recurrent colic, epistaxis, coughing, peripheral edema and cardiac failure terminally (Ploeg *et al.*, 2012).

CONCLUSION

It is concluded that acute abdominal aortic rupture can occur in adult horses on transit causing fatality. Pre-disposing conditions such as aneurysms may be asymptomatic and can be difficult to detect early enough to warrant remedy. It is important to transport horses on comfortable trucks using well maintained roads. 🌀

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