

VETERINARY REPORT

North West Wildlife Veterinary Services, P O Box 652, Newlands, Pretoria 0049. Practice Nr: FR15/13346

03 September 2019

**To: Mr Stephen Cunliffe
Grumeti Fund
Box 65 Mugumu
Serengeti
Tanzania**

Email: stephenc@grumetifund.org

Dear Stephen

RE: MORTALITY REPORT ON BLACK RHINOCEROS BULL (*Diceros bicornis michaeli*) FROM PORT LYMPNE ZOO

On the 27 June 2019 I loaded an Eastern Black Rhino Male of 11 years (*Diceros bicornis michaeli*), at Port Lymphne Zoo, United Kingdom for transfer to Grumeti, Tanzania ex Lydd International Airport.

LOADING

The animal was loaded into the crate at 09h45 without incident but the crate had to be slightly modified to provide him enough space to stand up and lie down comfortably in the crate without difficulty. The vertical poles in the front and rear of the crate did not allow enough space for the animal to do this and some of the poles on each end were removed to create the necessary space. Once loaded the animal was translocated from the holding facility up to the transporter unit waiting to transfer him to Lydd Airport.

JOURNEY

After loading onto the transport truck for transfer to the airport the sedative effect of initial loading medicines had started to wear off (expected at intervals of 1.5-3.5 hours depending on the individual). At this time, I administered another dose of tranquillisers and erroneously injected naltrexone instead of azaperone, this resulted in the animal being much more restless in the crate than what was initially planned for. Fortunately, I was able to spend significant time on the tarmac at Lydd airport to monitor the animal's behaviour before deciding to go ahead with the transfer. Since he was a zoo animal his temperament was way less fractious than that of a wild caught black rhino, and the limited space he had for movement in the crate meant he was unable to gain enough momentum to cause himself significant harm. During the time on the ground I re-administered additional tranquillizers at 1.5-2-hour intervals and after each occasion he responded well and settled down. I made the decision to go ahead with the translocation as planned as I was comfortable that he would start responding as originally planned to the sedation regime within approximately 8 hours of departure as the naltrexone wore off. I was also comfortable that I would

be able to manage his occasional fractious explosions adequately with tranquilizers (azaperone and midazolam) until the reversal medicine had worn off.

FLIGHT

The animal behaved as expected on the flight and continued to have short explosive episodes every 1-2 hours at which time I repeated the tranquillizer regime of 80-120mg azaperone and 10mg midazolam. The intervals between fractious episodes were gradually getting longer as expected and he had started responding well and becoming non responsive to touch by 21h30 in the evening. I increased the last dose of midazolam from 10mg to 30mg after he managed to shift the crate in the airplane because the straps were not tight enough. This dose was administered at approximately midnight and I did not repeat the azaperone dose at this time. The animal calmed well and was standing in the crate. After some time, I heard him go down in the crate at which time I investigated as he had been reluctant to lie down at all for most of the journey (whether this was due to excitement, lack of space, or the slippery floor I am not sure). On investigation I found the animal dead in sternal recumbency with his hind limbs extended behind him and his front legs folded up underneath him as if he had dropped in that position.

RETURN TO UK AND *POST MORTEM* EXAMINATION

Once the animal was confirmed dead, we decided to return the UK rather than forge on to Tanzania, where we would have the ability to conduct a thorough *post mortem (PM)* examination at the earliest time possible and under appropriate conditions with appropriate equipment. The PM was mostly insignificant and other than significant congestion of the lungs there were no other outspoken lesions. I was concerned that the right atrium of the heart was empty and can only speculate on the probable cause of death as one of the following:

- It is possible that even though the animal was responding well to the repeated doses of tranquilizers that the continuous stimulation resulted in a prolonged excitatory tachycardia (increased heart rate) which later induced an arrhythmia and subsequent acute heart failure
- The empty right ventricle could be indicative of a collapse of blood pressure and subsequent hypoxia and death.

The histopathology results were also unfortunately not conclusive but importantly did not alert to any underlying conditions that could have been of concern making the speculated causes of mortality mentioned above more likely.

Please do not hesitate to contact me with any queries.

Yours Faithfully



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Date: 26 August 2019