

Sudden Death Investigation – Piroplasmosis, March 2016

Introduction

On the 20 March 2016, Dr Camilla Weyer (DAFF authorised Veterinarian (Ref: 1/2/1/7/1) State Vet Boland authorised Veterinarian - Movement Control and Equine Disease Surveillance) was called out to investigate a horse that was recumbent with reported swelling of the conjunctivae from the Riverlands area in the Malmesbury Magisterial District (see figure 1). The reason for the call-out was because the horse was located with the African horse sickness surveillance zone and had clinical symptoms where AHS would be considered as a differential diagnosis.

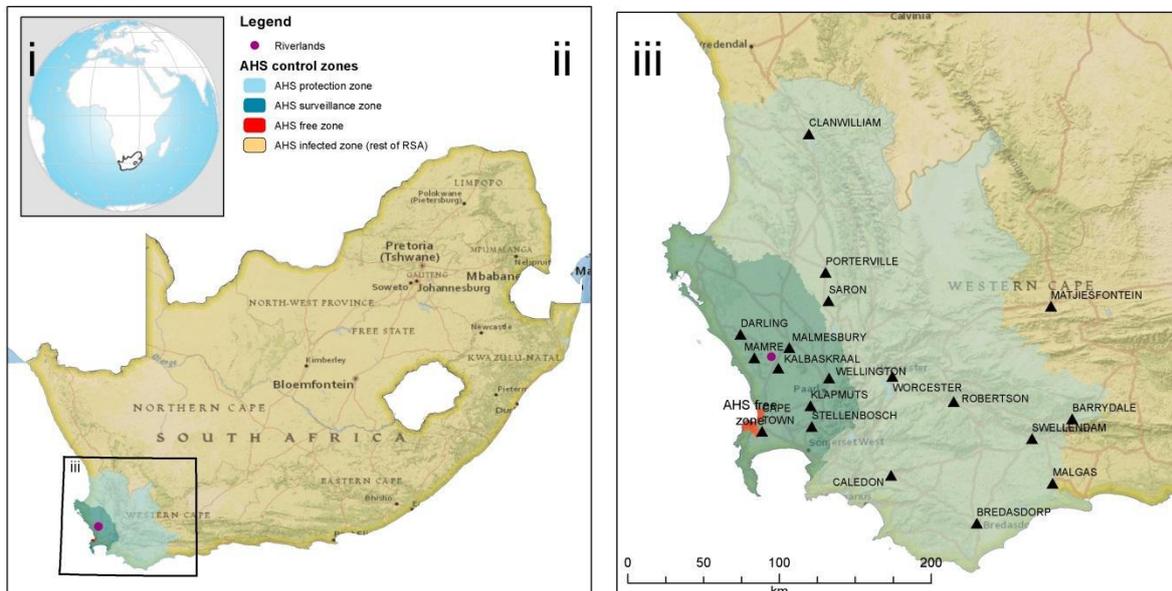


Figure 1: Location of Riverlands in consideration to the AHS control zones

Affected case

By the time that Dr Weyer arrived at the location, the horse had died. The horse was a chestnut colt of approximately 1 year of age. The colt was unvaccinated against AHS and equine influenza, and never been dewormed, and was kept extensively in the Riverlands Nature Reserve. The dam of the colt (Alexis) was vaccinated against AHS during the 2011 Mamre AHS outbreak.

The history was that the horse had been fine according to the owner the day before, but that morning of the 20th, when he had gone to check on the herd, he had found the horse recumbent and unable to stand unassisted. When they did manage to get the horse up it was ataxic and

collapsed when left unsupported. The horse was transported by cart to the nearest road access, where it subsequently died after remaining recumbent and paddling for approximately an hour.

Dr Weyer performed a post mortem when she arrived. The mucous membranes (gums especially) were covered in petechiae and suggillations and were very pale. The outstanding findings on macropathology were petechiation and suggillation of all serosal and mucosal surfaces. Subcutaneous and intermuscular oedema of the neck and pectoral areas, as well as mediastinal oedema. A severe hydrothorax (approximately 4 L – see figure 2) was present along with pericardial effusion and pulmonary oedema. Petechiation of the myocardium and endocardium was also visible. Since the post mortem pathology would still include AHS as a differential diagnosis organ and blood samples (EDTA) were taken from the carcass and EDTA and serum samples were taken from all other horses and a donkey in the area that had been in contact with this colt (9 other horses/ donkey).

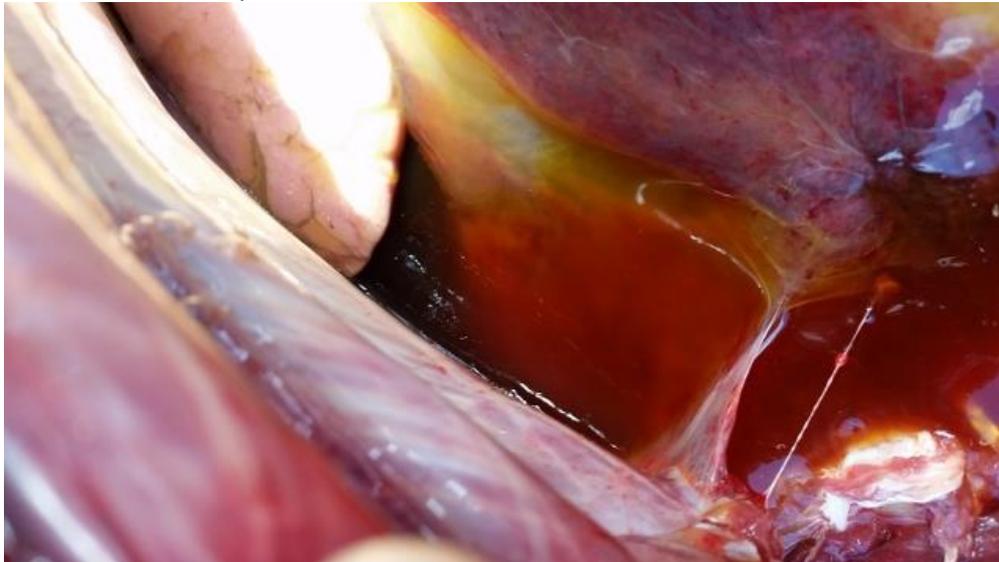


Figure 2: Post mortem - pleural effusion

Control prior to final diagnosis

On Monday 21st March a meeting was held in Riverlands with the horse owners and a separate meeting was held in Mamre with the horse owners there. After consultation with the State Veterinarian of Malmesbury (Dr Sewellyn Davey) the owners within the immediate area of the case were verbally placed under quarantine. Owners were advised that they should daily spray DEET products over the horses' top line in the morning and evening, and they should monitor their horses' rectal temperature. Ten litres of Summer Itch Spray (contains DEET) was purchased from Vet Brands for distribution by the Equine Health Fund. Thermometers were distributed and owners were shown how to take the temperature rectally. Owners were warned about the danger of working the horses when they were possibly infected with a virus.

Final diagnosis

The organ samples and blood samples from Riverlands were sent via SAA Cargo to OR Tambo and Prof Alan Guthrie (Equine Research Centre) picked them up at 15:30 on Monday. On Tuesday 22nd March, real time PCR (RT-qPCR) results for AHS and EEV (Equine encephalosis virus) were obtained by 12pm. All samples tested negative for AHS and EEV. Further RT-qPCR assays were run for *T.equi*, *B.caballi* and EHV1 and 4 (Equine herpes virus). The deceased horse tested positive for *T.equi* on lung, heart and EDTA samples. All 9 of the other horses also tested positive for *T.equi*. One of them also tested positive for *B.caballi*, and another also tested positive for EHV 1. The Riverlands horses will be further monitored and follow up samples will be taken from any sick horses.

There have been further deaths confirmed due to piroplasmiasis in the Mamre area, and one due to EEV in the Tierfontein area. The symptoms can be confused with AHS. AHS, EEV and piroplasmiasis should be considered as differential diagnoses for sudden deaths, or even simply pyrexia horses.

Two of the horses that tested negative for AHS but were in contact with the affected horse are showing nasal discharge and pyrexia, and nasal swabs and resampling of EDTA blood is being planned for these horses.

Conclusion and Acknowledgments

This case shows the importance of responding timeously to suspect cases of AHS. Furthermore, if post mortems are performed as soon as possible after death and samples are taken from affected equids and from in contact equids in the vicinity then it provides confidence in the final outcome of the case. This case has shown what can be done with cooperation even during times when historically no personnel have been available (i.e. over public holidays and weekends). The Western Cape Department of Agriculture is very grateful to the contribution made by the Equine Health Fund officials involved including their generous sponsorship of time and funding for insecticide control measures, as well as the prompt response from Prof. Alan Guthrie (Equine Research Centre – University of Pretoria) who tested and reported the results before midday on Tuesday, allowing early and informed decision making.

Any sudden death or pyrexia of unknown or unconfirmed origin within the [AHS control zones](#) should be reported to Dr Weyer and to the Western Cape Department of Agriculture (Veterinary Services) as soon as possible so that assistance in investigation and disease control can be prompt.

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