

## **AORTIC RUPTURE AND AORTO-PULMONARY FISTULATION IN THE FRIESIAN BREED. A GUIDELINE FOR HORSE OWNERS TO RECOGNIZE THIS FATAL PATHOLOGY**

Ruptures in the aortic arch near the ligamentum arteriosum are uncommon in domestic animals. However, four cases have been described in Friesian horses (1) and many cases have been admitted to the Utrecht University Faculty of Veterinary Medicine, Wolvega Equine Clinic and the Ghent University Faculty of Veterinary Medicine over the course of several years. Our research group that focuses on the phenotypic (clinical) and genotypic appearance of aortic rupture and aorto-pulmonary fistulation within the Friesian breed consists of 4 major partners: **The Utrecht University, The Ghent University, The Wageningen University and Wolvega Equine Clinic.**

The prevalence of aortic rupture is estimated to be  $\pm 2\%$  within the Friesian breed, which is a much higher incidence than that seen in warmblood horses. Unlike warmblood horses, Friesian horses can develop a chronic form of aortic rupture that most often is overlooked by the owner, leading to possible dangerous situations, such as acute death during exercise. **Aortic rupture is always fatal.** Some horses die instantly, others can walk around with this pathology for weeks to months. And even when a veterinarian suspects a patient of having an aorto-pulmonary fistulation, the diagnostic methods are limited. Ante mortem diagnosis is quite often a challenge because the aorta ruptures in Friesian horses occur at another location than that seen in warmblood horses. Post mortem diagnosis requires adaptation of specific standardized cardiac incision techniques during autopsy. This means that the person who performs the autopsy should suspect presence of aortic rupture before start of the autopsy procedure. It learns us that most probably quite some cases are and have been overlooked in the present and the past.

Over the course of a few years our research group has managed to pool 46 fully illustrated aortic ruptures subjected to complete protocolized autopsy and pre-mortem diagnosis. This has led to the publication of International peer reviewed articles about the disease and presentations at International conferences. In view of the difficulties to recognize and diagnose this pathology, it is important that a lot of clinicians have access to this information.

Epidemiological check of the pedigree of all ruptured cases, going 5 generations backwards has learned us a lot about the way this pathology is inherited. It also has helped us to identify a proper population of Friesian horses that can function as control population for genetic studies. We are currently checking for relatedness between our population of aortic ruptures on one hand and the population of dwarfism and hydrocephaly in horses on the other hand.

This talk will help horse owners understand the pathological background of aortic rupture and help them recognize the early clinical signs. By being able to identify horses which are in the early stages of developing this pathology, dangerous situations can be prevented.