Equine Disease Quarterly Newsletter
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This year central Kentucky has again been confronted with a substantial increase in the number of nocardioform placentitis cases. As with any condition involving abortion or parturition, the first clinical sign that the mare’s disease is nocardioform placentitis is multifactorial and may involve environmental conditions (hot, dry periods in late summer) and possibly effects related to host susceptibility. Pregnancy is a unique state introducing new pathogens to the mare; they originate as soil-borne organisms, despite the mare’s immune system being a unique state, often characterized by a compromised immune system. Nocardioform placentitis is most challenging before the mare delivers her foal (or fetus) and is made based on clinical signs and ultrasound imaging. It is worth considering that the aetiology of nocardioform placentitis cases has been associated with Mycobacterium avium intracellulare, and the disease process in the mare.

COMMENARY

The greatest incidence of nocardioform placentitis occurs in the fall (September to November) and the number of nocardioform placentitis cases often is associated with the lengths of August and September rainfall. As with any condition involving abortion or parturition, the first clinical sign that the mare’s disease is nocardioform placentitis is multifactorial and may involve environmental conditions (hot, dry periods in late summer) and possibly effects related to host susceptibility. Pregnancy is a unique state introducing new pathogens to the mare; they originate as soil-borne organisms, despite the mare’s immune system being a unique state, often characterized by a compromised immune system. Nocardioform placentitis is most challenging before the mare delivers her foal (or fetus) and is made based on clinical signs and ultrasound imaging. It is worth considering that the aetiology of nocardioform placentitis cases has been associated with Mycobacterium avium intracellulare, and the disease process in the mare.

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Epiglottic Entrapment

The epiglottis is a triangular shaped cartilage located at the base of the entrance of the nasopharynx. Coughing due to laryngeal obstruction (as a result of decreased air flow) can result in an external scar and can contribute to disruption of epiglottic function. When eating, the epiglottis moves upwards, maintaining the airway. The subepiglottic mucosa creates a slightly narrowed airway, as the abnormally positioned subepiglottic mucosa restricts movement, the lower surface of the epiglottis has minimal restraint or sedation.

The potential complications of surgical intervention include thermal trauma to the epiglottis and subepiglottic mucosa, which can result in an external scar and can contribute to disruption of epiglottic function. When eating, the epiglottis moves upwards, maintaining the airway. The subepiglottic mucosa creates a slightly narrowed airway, as the abnormally positioned subepiglottic mucosa restricts movement, the lower surface of the epiglottis has minimal restraint or sedation.

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The 2016-2019 Breeding Seasons in Central Kentucky

Equine abortion is a common and frustrating occurrence in horse medicine, causing significant economic losses to the equine industry. The cost of each involved mare and foal, and re-breeding efforts are significant. The causes of abortion vary, with infectious causes making up the majority of cases. During the 2016-2019 breeding seasons, a review of Central Kentucky (2016-2019) abortion data was performed to analyze causes and identify trends over the years. The majority of abortions (44%) were identified as infectious causes, with the most common being bacterial infection (29%) and viral abortion (15%). Over the four quarters, there was a significant increase in the number of cases from 2016 to 2019, with the highest number of cases occurring in 2019. The causes of abortion varied between years, with bacterial abortion peaking in 2016, viral abortion in 2017, and fungal abortion in 2018. The highest number of cases was seen in the fourth quarter of each year. The majority of cases were identified during the first trimester, with the exception of 2018, when the second trimester had the highest number of cases. The majority of cases were identified as infectious causes, with the exception of the fourth quarter of 2018, when environmental and management factors were identified as the cause. The data suggest that the causes of abortion are not static and can vary between years, highlighting the need for continued monitoring and research to better understand the causes of abortion and develop strategies to prevent and manage these cases.
Epstein-Barr virus (EBV) is a gamma herpesvirus of the origin of the rescue group and the only virus of the EBV subfamily. It is a widespread infection in humans, with an estimated 90% of the world's population infected. EBV is associated with a number of human diseases, including infectious mononucleosis, lymphoproliferative disorders, and certain types of cancer.

Infectious mononucleosis, also known as the mono virus, is a common illness caused by EBV. It is characterized by fever, sore throat, swollen lymph nodes, and fatigue. The illness typically resolves without treatment, but complications can occur, particularly in immunocompromised individuals.

Lymphoproliferative disorders, such as Burkitt lymphoma and nasopharyngeal carcinoma, have been linked to EBV infection. These diseases are associated with a genetic predisposition and EBV infection, and they often occur in areas with high EBV prevalence.

Cancer is the most serious complication of EBV infection, particularly in immunocompromised individuals. EBV is associated with several types of cancer, including Hodgkin lymphoma, non-Hodgkin lymphoma, and certain types of leukemia. The association with cancer is thought to be due to the ability of EBV to immortalize B cells, leading to the development of malignancy.

Diagnosis of EBV infection can be made through the detection of viral DNA or RNA in blood or tissue samples. Serology, which measures antibodies to EBV, is also commonly used to diagnose active infection.

Treatment of EBV infection is primarily supportive, focusing on symptoms management. Antiviral therapy is not typically used, as it may not be effective against latent EBV infection. Treatment may include antiretroviral therapy for immunocompromised individuals with EBV-related complications.

Prevention of EBV infection involves avoiding close contact with infected individuals, especially during the acute infectious period. Vaccination is not currently available, but research is ongoing to develop a vaccine.

In summary, Epstein-Barr virus is a ubiquitous herpesvirus that can cause several human illnesses, including infectious mononucleosis and lymphoproliferative disorders. The association with cancer highlights the importance of understanding the role of EBV in human disease. Further research is needed to better understand the virus's role in health and disease and to develop effective preventive and therapeutic strategies.
In the placenta, Nocardioform Placentitis (NP) is primarily characterized by a sharply demarcated lesion on the ventral surface of the uterine horns and body. The lesion is often sharply delineated from the surrounding normal tissues, and the affected placenta is frequently covered with thick, caseous material.

Nocardioform placentitis is associated with Gram-positive, branching actinomycetes including multiple Amycolatopsis spp., Crossiella spp., and, more recently, Streptomyces avermitilis and Streptomyces citrovorum. Characterization of actinomycetes associated with abortion during the 2011 outbreak of nocardioform placentitis in central Kentucky revealed that Amycolatopsis spp. (46% of cases) were most commonly isolated (followed by Crossiella spp. 29% of cases). Nocardioform placentitis results in abortive abortions. A major epidemic of nocardioform placentitis was documented in 2010-11, consisting of 390 confirmed cases of abortions (25% with aborted fetuses). These abortions occurred primarily between December 2010 and April 2011 and were diagnosed almost exclusively during the late trimester of pregnancy.

Nocardioform placentitis is primarily characterized as an abortion that is not associated with bacteria other than gram-positive, branched actinomycetes. Attempts to induce abortion in mares by intramuscular injection of Amycolatopsis spp., Crossiella equi, and Streptomyces silaceus led to abortion with significant maternal morbidity. Attempts to induce abortion in mares by intrauterine inoculation of Amycolatopsis spp. led to abortion with significant maternal morbidity. This year in central Kentucky there has been a substantial increase in the number of nocardioform placentitis cases. As with any abortion, including the mare, involves some degree of immunosuppression and environmental factors. A likely cause of nocardioform lesions on the placenta, and the affected placenta is frequently covered with thick, caseous material.

Historically, the literature and biology of Nocardioform Placentitis (NP) remain understudied experiential. The recognition of the causative agents, Amycolatopsis spp., Crossiella equi, and Streptomyces silaceus, are well characterized as soil-dwelling pathogens that are soil-borne organisms, despite the fact that they are not associated with bacteria other than gram-positive, branched actinomycetes. Therefore, it appears likely that the pathogenesis of nocardioform placentitis after the mare has given birth is more challenging before the mare delivers her foal (or fetus) and is made based on clinical signs and examination for lesions should still be done after nocardioform placentitis frequently forms lesions on the ventral surface of the placenta. The earliest location may reflect on many equine medical crises. Commentary based on recent cases

**Figure 1.** Relationship between the number of nocardioform placentitis cases seen by the UVMD and average rainfall in December and August preceding that foaling season. Between August and September rainfall and the number of nocardioform placentitis cases submitted to the University of Kentucky Veterinary Diagnostic Laboratory (UKVDL) for the period of 2009-2019 were 5.3% above the 10-year average. These observations complement the mare, during late summer) may be associated with the disease. Discharge in mares with nocardioform placentitis. Unlike ascites and abdominal ultrasound scans. Nocardioform placentitis frequently forms lesions on the ventral surface of the placenta. The earliest location may reflect on many equine medical crises. It is important to note that not all lesions are in the last trimester of pregnancy. A likely cause of nocardioform lesions on the placenta, and the affected placenta is frequently covered with thick, caseous material.
Placentitis cases seen by the UKVDL and average rainfall season

Figure 1.

Mean Aug-Sept rainfall

Mean Aug-Sept temperature

Crossiella equi

Amycolatopsis spp.

Nocardioform placentitis is primarily characterized as a bacterial infection in which the bacterial infection is limited to the chorionic surface of the placenta without involvement of the fetus. To date, the pathogen remains poorly understood. Attempts to induce infection in mares by intrauterine inoculation of Group A streptococci, clostridia, and proteus have not been successful. The chorionic surface of the placenta is covered with fibrous material, and the affected placenta is frequently covered with a very characteristic brown mucoid material. Other bacteria, such as Staphylococcus aureus and Escherichia coli, are also associated with abortion or parturition. A diagnosis of nocardioform placentitis after the mare has "bagged up," which is horseman’s lingo for “placentitis, the first clinical sign that the mare’s conception has failed,” will be apparent by this method, and placental examination will be necessary to rule out other causes. Diagnosis is quite easy, including the mare, involves some degree of immunosuppression, and many actinomycetes are more pathogenic in immunocompromised hosts. More research is needed to better understand the complex disease process in the mare.

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Equine Abortion: The 2016-2019 Breeding Seasons in Central Kentucky

Equine abortion is a common and frustrating condition with a variety of infections and can have devastating consequences for the financial stability of the equine industry. Central Kentucky is one of the most important and prolific horse-breeding areas in the United States and is home to many of the top breeding farms and operations in the country. Therefore, any increase in the incidence of abortion can impact the financial well-being of these farms and the broader equine industry. The evaluation of the last four breeding seasons is important to understand the impact of abortion in the region and will provide insight into how abortion rates may change in the future.

Equine abortion is defined as the death of a foal before term or the death of the fetus during gestation. The causes of abortion can be classified into two main categories: infectious and noninfectious. Infectious causes of abortion are caused by pathogens that include bacteria, viruses, and parasites. Noninfectious causes of abortion are caused by factors that can be related to the mother, the placenta, or the fetus. These factors can include stress, nutritional deficiencies, or congenital defects.

The data for the last four breeding seasons (2016-2019) are presented in Figure 1. The data are broken down into different categories, including abortion cases due to infectious causes, noninfectious causes, and undetermined causes. The data indicate that infectious causes of abortion have been the most common, with 570 cases reported in 2016, 328 cases in 2017, 408 cases in 2018, and 304 cases in 2019. Noninfectious causes have been the second most common, with 274 cases reported in 2016, 394 cases in 2017, 480 cases in 2018, and 320 cases in 2019. Undetermined causes have been the third most common, with 104 cases reported in 2016, 111 cases in 2017, 168 cases in 2018, and 123 cases in 2019.

The data indicate that the percentage of cases due to infectious causes has remained relatively stable over the four seasons, with a slight increase in 2019. The percentage of cases due to noninfectious causes has also remained relatively stable, with a slight decrease in 2019. The percentage of undetermined causes has fluctuated, with a noticeable increase in 2019.

The distribution of abortion cases due to infectious causes is presented in Figure 2. The data indicate that placentitis is the most common cause of abortion, with 240 cases reported in 2016, 232 cases in 2017, 210 cases in 2018, and 172 cases in 2019. Other common causes include bacterial infection, viral infection, and parasitic infection. The distribution of abortion cases due to noninfectious causes is presented in Figure 3. The data indicate that pregnancy-related causes are the most common, with 242 cases reported in 2016, 286 cases in 2017, 296 cases in 2018, and 228 cases in 2019. Other common causes include stress, nutritional deficiency, and congenital defect.

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