



JANUARY 2006

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Managing high risk pregnancies

A high risk pregnancy can most simply be defined as one in which the foal is in danger of being aborted, born prematurely and/or born sick. For the purposes of this discussion we are limiting our scope to those pregnancies that are threatened by placentitis, or an infection of the placenta. Placentitis has been shown to be the most common cause of premature births and the cause of at least one third of all late term abortions.

Causes

Placental infections are theorized to have three causes. However, the first two of these are not well explored and remain more as “viable theories” than proven fact. One of these would be a uterine infection that begins at the time of breeding, or before, and is dormant until the pregnancy advances, finally overwhelming the placenta and fetus. Another possibility is disease reaching the placenta through the mares’ blood stream during pregnancy.

The cause of placentitis that is the best documented and most studied is what is referred to as an ascending infection. In other words, the infection ascends the mare’s reproductive tract by entering the vagina, passing through the cervix and contacting the placenta in the uterus. At least 90% of placental infections begin this way. Most of these infections are bacterial and are the same pathogens that we associate with uterine infections at the time of breeding.

Obviously the goal with any pregnancy is to have a normal, healthy foal carried to term so that it can reach its full potential. Most pregnancies reach this goal without incident. Pregnancies that are endangered by placentitis can be diagnosed and treated to help salvage a desirable outcome. Often times mares will exhibit clinical signs if they are trying to foal prematurely or abort late term. If these clinical signs are recognized these mares can often times be treated successfully.

Clinical Signs

Mares may exhibit a vaginal discharge alerting you to a problem. These discharges are often purulent and brown in color. The origin of this discharge (pus) is the uterus and it is expelled through the cervix and out.

Another clinical sign that may provide warning that the pregnancy is not proceeding normally is premature mammary development. If the mare’s udder is enlarging too early or she’s starting to produce milk than this should serve as a warning sign that the she may be trying to abort.

Diagnostics

If the mare is showing signs of her pregnancy at risk, then further diagnostics by a veterinarian should be performed for several reasons. The clinical signs may not be severe,

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leaving some question as to their validity. Further diagnostics may confirm or refute your suspicions. More information may give clues to the severity of the condition allowing some ability to prognosticate. Finally, by performing an initial exam and then sequential exams through the pregnancy, the effectiveness of the treatment can be monitored.

A vaginal exam should be performed to check for uterine discharge and cervical dilation. If a discharge is present it can be helpful to take a culture in order to identify the organism and the best antibiotic choice.

A transrectal ultrasound can be done to assess the health of the placenta and the placental fluids. Measuring the thickness of the placenta will determine if it has thickened due to infection. It can also be observed for separation from the uterus, which would be abnormal. Sometimes discharge (pus) can actually be seen collecting between the placenta and uterus. The placental fluids can become cloudy and filled with debris if the infection has advanced.

The progesterone level in the mare's blood stream can be assayed to assess the health of the pregnancy. An abnormally high progesterone level indicates that the pregnancy is in jeopardy and a progesterone level that is falling rapidly can indicate pending abortion. At this stage of gestation, the best information may be derived from taking three blood samples 48 to 72 hours apart.

A transabdominal ultrasound exam can give additional information about the uterus, placenta, and fetus. During this exam, the uterus and its contents are imaged thru the ventral abdominal wall. Much larger areas of the placenta can be assessed than what is seen from the transrectal window. Fetal viability can be evaluated by assessing fetal movement, position, size, heart rate, and fetal fluids (amnion and allantoic fluids). The utero-placental unit can be measured and serial monitoring can indicate if therapeutic intervention is effective.

Treatment

Placentitis often results in abortion, premature birth and/or sick and weak foals. To simplify this rather complex process, this occurs for several reasons. The infection can destroy the "bond" between uterus and placenta causing them to separate. In these areas of separation the placenta virtually becomes nonfunctional in its role to nourish the fetus and if enough separation occurs the fetus will be malnourished or even die. While this is happening, the bacterial (or fungal) agents causing the infection will cause the production of inflammatory products (cytokines). In turn, these cytokines can cause the release of prostaglandins and together these chemicals can result in premature uterine contractions, expelling the fetus early. And lastly, these pathogens can infect the fetus causing organ damage or even death.

Admittedly, we still have more to learn about how to treat these mares. But we do know that if we focus our treatment on the disease processes mentioned above we can salvage many of these pregnancies satisfactorily.

Antibiotics are necessary to fight the bacteria. Antibiotics that have a broad spectrum of activity, will penetrate the placental barrier and can be safely administered for long periods are the best choices. Trimethoprim sulfadiazine is such an antibiotic.

Anti-inflammatory medications help to counter the effects of the cytokines. It is important to select an anti-inflammatory that not only counteracts the cytokines but also can penetrate the placental barrier. One such medication is pentoxifylline.

Tocolytic agents are helpful because they will help prevent the type of contractions that can result in fetal expulsion. Regumate is such a medication and it has the added benefit of "holding down" the production of prostaglandins.

- May 2004 - Bacterial pneumonia in foals
- April 2004 - Digital radiographs
- March 2004 - Colic in the post-foaling broodmare
- January 2004 - Lameness and poor performance
- December 2003 - Internal parasites - the hidden battle
- November 2003 - Equine tapeworms - The forgotten parasite
- October 2003 - Blister beetle poisoning
- September 2003 - The horse owners' role in wound care
- August 2003 - West Nile update: Broodmare vaccinations
- July 2003 - Stifle radiographs

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