Abortions in Broodmares

Placentitis a leading cause, but not the only one

BY AMANDA DUCKWORTH

ANNE M. EBERHARDT

Even in a 'normal' year a percentage of mares are going to abort their foals, no matter the level of care they receive

RACING FANS AROUND THE GLOBE were saddened last year to learn that 2010 Horse of the Year Zenyatta had aborted her expected foal by Into Mischief. According to her connections, she lost her pregnancy last April due to low-grade placentitis, which caused premature placental separation.

Placentitis, which is inflammation of the placenta usually caused by an infectious agent, is one of the most common causes of abortions in broodmares, and it is estimated to impact 3-5% of pregnancies. While placentitis is a leading cause of abortions, it is not the only one.

"It can be somewhat variable," said Dr. Luke Fallon of Hagyard Equine Medical Institute. "Each year it varies as far as the number of abortions we tend to see, the types

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of abortions we tend to see, and the stage of gestation it tends to occur."

Most years will end up being fairly typical, but some feature spikes of specific problems. The most extreme example of this occurred in 2001 when Mare Reproductive Loss Syndrome (MRLS) devastated broodmare bands in Central Kentucky.

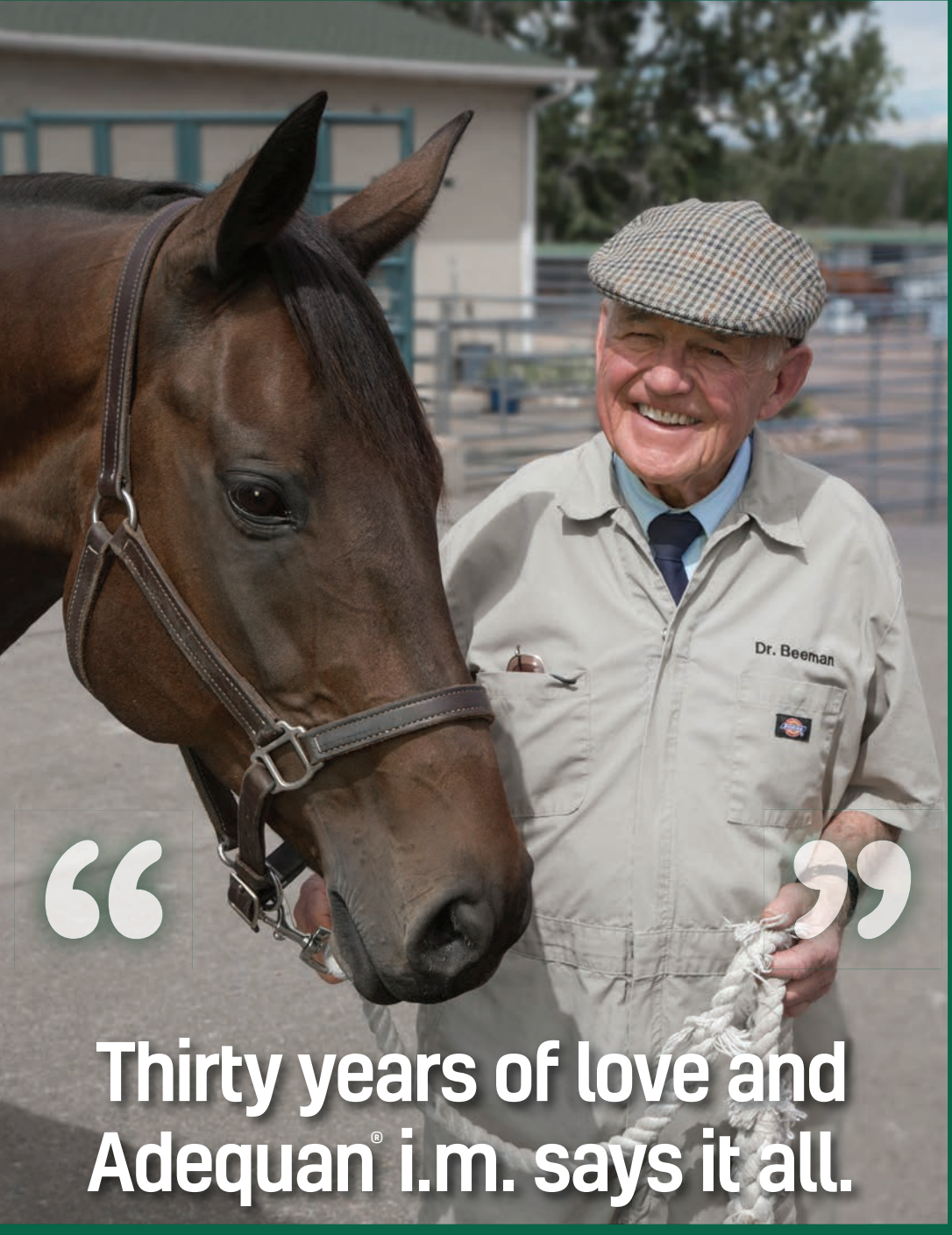
The exact cause of MRLS was never determined, but it was linked to the ingestion of eastern tent caterpillars. More than 30% of Kentucky's expected Thoroughbred foal crop for 2002 was lost, leading to an estimated financial fallout of about $300.5 million due to MRLS.

Even in a "normal" year, a percentage of mares are going to abort, no matter how high the level of care they receive. The normal gestation period for a Thoroughbred mare is around 11 months. She is considered to have aborted if she delivers a dead foal and its placenta before the foal was developed enough to survive on its own. After around 300 days of gestation, if a mare delivers a dead foal it is usually classified as stillborn.

ANNE M. EBERHARDT

Zenyatta, 2010 Horse of the Year, aborted her foal in 2018

Common causes for abortion include placentitis, leptospirosis, equine herpesvirus 1 and 4 (EHV-1 and EHV-4), umbilical cord torsion, systemic illness, and twins. Then, of course, sometimes a



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Dr. Luke Fallon of Hagyard Equine Medical Institute

mare will simply abort on her own because the pregnancy is not progressing in a proper way.

"There are those embryological accidents; they do occur," said Dr. Kristina Lu, an equine reproductive specialist at Hagyard. "It could be a one-off fluke. Sometimes it's just bad luck."

It is estimated that on average roughly 10% of equine pregnancies will result in abortion, but that number varies from year-to-year, breed-to-breed, and herd-to-herd.

"In every production model there is a built-in biological pregnancy attrition rate," said Lu. "Not 100% of pregnancies make it to term. The goal is to make sure we minimize that as much as possible. If you have a large herd, personally I love to see no more than 5%, and if it gets over 10%, my eyebrows go up.

"It also depends on your population of mares. If your population is made up of older mares, your pregnancy loss rate is going to be higher because of age. You see the same thing in people. If you have a population of young mares, losing 5% is realistic, but you have to take it all into account."

MAIN CULPRIT

Excluding embryological accidents, which can't be controlled, and twins, which are often caught in the early stages of pregnancy for Thoroughbred broodmares, placentitis is always a major concern if a mare is showing signs of abortion.

"A majority of abortions occur at the cervical star area, and they are typically ascending placentitis," said Fallon. "Most common is bacterial placentitis, but you do get fungal placentitis."

As the American Association of Equine Practitioners explains, "a mare's placenta comprises the amnion, which surrounds the fetus, and the chorioallantois that attaches to the endometrium (uterine lining). These structures protect the fetus and provide gas and nutrient exchange, allowing the foal to grow. Placentitis usually affects the chorioallantois, compromising the attachment of the placenta to the endometrium or causing infection and inflammation, all of which can be harmful to the foal."

Common warning signs of placentitis include premature lactation and vaginal discharge. However, the amount of either of these fluids does not automatically equate to the level of damage occurring within.

"The tricky thing is that the mare's external signs of having a problem with the pregnancy—such as the mammary development or discharge—do not necessarily equal the severity of the lesions that are going on in utero with the placenta," Fallon said. "The degree of placentitis doesn't coordinate necessarily with what they show you externally. It's not consistent."

After placentitis is diagnosed, there are steps that can be taken while attempting to save the pregnancy. As with most other medical issues, the chance of a successful outcome depends on the specifics of each case.

"My go-tos usually will be antibiotics and anti-inflammatories, and I usually reach for an antibiotic that has been proven to pass through the fetal membranes and have as few side effects as possible," said Lu. "I have a lot of luck with pentoxifylline, and I have had very good results with Equioxx. There is a lot of personal preference in the art of veterinary medicine. There's not a blanket treatment of every placentitis."

COURTESY HAGYARD

Dr. Kristina Lu is an equine reproductive specialist at Hagyard

The success rate and treatment plan depend on a number of factors and usually involve ultrasounds and close monitoring to go along with the prescribed medications, but there are no guarantees.

"It varies horse-to-horse as well as according to the nature of the cause or the agent causing the placentitis," Fallon said. "Fungal placentitis is typically more slow and insidious, and you can get ahead of that, but with all the negative effects the antifungals can have on a fetus, it can be a little bit of a tough call.

"Also, while you may have killed the initiating culprit—say you have ascending placentitis and you are able to treat it and you stop the progress—when that fetus gets to a certain size, it may exceed the capacity of that compromised placenta. No one knows exactly where that is. How much of that area is damaged has exponential effects on that fetus."

Assuming the mare is diagnosed, responds to treatment, and is able to deliver a live foal, veterinarians still advise caution. One, the foal has a good chance of being on the small side, and two, it is at a higher risk for other issues.

"If we get to term, we might have a conversation about whether the mare should foal at the clinic so that the foal can get immediate attention because they are at higher risk of needing additional intervention," said Lu. "I like the client to know that ahead of time. For instance, sometimes they don't manifest hypoxic ischemic syndrome (dummy foal syndrome) for 36-48 hours. They can look fine at birth, and it's great that the foal is on the ground, but there are several days of monitoring that are worth remembering."

ABORTION STORMS

Placentitis is far from the only culprit when it comes to causes of abortion. Other issues that lead to fetal loss include leptospirosis as well EHV-1 and EHV-4.

These issues can doubly be of concern because they can create a situation where multiple members of the same broodmare band start to abort, but vaccines are available for both.

Leptospirosis, often called "lepto" for short, is a disease caused by infection with *Leptospira* bacteria. These bacteria can be found worldwide, and leptospirosis is a zoonotic disease, which means it can be spread from animals to people. In addition to abortion in horses, it also is responsible for causing uveitis, or moon blindness.

It is hard to diagnosis lepto because some horses exhibit no symptoms while those that do often display signs commonly linked to other issues.

Laboratory tests are needed to confirm its presence, but horses in a wet climate are especially susceptible to the disease. The first sign of lepto affecting a mare's reproductive tract is often the abortion itself, meaning there is not much to be done.

"A lot of times with lepto, they just abort them, and you find out after the fact it was lepto," said Fallon. "The environment does play a role. We have had a record year for precipitation (in Kentucky), and I have honestly been waiting for the leptospirosis this year. If you have a bad year for lepto on a given farm, you can have multiple abortions."

The University of Kentucky did a study on reproductive leptospirosis and estimated that from 1993-2012, it caused economic losses of around $102 million in the Bluegrass.

An equine vaccine for lepto was not available until the end of 2015.

Meanwhile, according to the AAEP, EHV is found in most horses the world over with no serious side effects. Nine EHVs have been identified, and EHV-1 and EHV-4 can cause a mare to abort although it is rarer with EHV-4. Vaccines, especially key with pregnant mares, are still not a guarantee.

"You will still get the odd mare that will abort due to herpes even though she's been vaccinated, and she's in the presence of a vaccinated herd," said Fallon. "I don't know the exact percentage, but probably 1 out of 1,000 will do it. It can happen. They always have the virus circulating in their system; it's a question of whether or not there is some kind of compromise or stress in their life that causes them to be more susceptible to a herpetic infection.

"Virus abortion due to herpes in an unvaccinated herd would cause an abortion storm. They abort very quickly. It can be within 72 hours that they are spitting out foals left, right, and center. I have never witnessed that, thankfully. Because of good vaccination protocols, my experience has been a singular case every four or five years."

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Monitor showing scan for a pregnancy check

MOVING FORWARD

If a mare aborts once, it does not mean she will always abort. However, it does mean most veterinarians will keep a closer eye on her than on a mare who has never experienced such a loss.

"If a mare has had an abortion in the past, it increases my awareness on that mare, so I will investigate her history a little bit more carefully," said Lu. "I will ask to see the reports on the abortion if I wasn't involved on that mare. I look more into what might have caused that abortion—see if it was more likely an embryological accident or something else, like placentitis.

"Some mares do have recurrent abortions. The classic example would be a mare that has some compromised reproductive anatomy. She might be more prone to experiencing ascending placentitis and thus abortion. That type of thing could certainly reoccur, but just because a mare has aborted once doesn't necessarily guarantee she's going to do it again."

In the end, being vigilant can help protect a pregnant mare from the various scenarios that result in abortion, but there will never be a foolproof path to prevention.

Mother Nature simply does not work that way, and the chance of abortion will always be a part of the risk involved with owning broodmares. BH

Amanda Duckworth is a freelance writer based in Lexington.