

Milk Fever

As the early morning sun begins to warm the pre-dawn air, Burl heads out to feed the mares with foals. As a perceptive horseman, his attention quickly turns to one mare who approaches the feeding area with an unsteady gait.

Nursing the biggest, strongest and fattest foal in the group, this mare normally attacks her feed with great gusto. Today, however, she seems depressed. She is not her ravenous self and slowly picks at her ration.

As a precaution, Burl decides to bring the mare and her foal up into a small paddock where they can be more closely observed. As the day wears on, the mare nibbles on her morning grain. She is reluctant to move and gradually her unsteady gait progresses into a stiffened movement characterized by an elevated tail.

Finally, she lies down. All attempts to coax her back to her feet fail. Additional symptoms appear: Rapid breathing, sweating and muscle tremors. Her pulse is elevated but her body temperature is normal. It is time to summons the veterinarian. Without treatment, there is a possibility that this mare will lapse into a convulsive coma within twenty-four hours - a coma that may lead to her death.

This mare is demonstrating the classic symptoms of milk fever, also known as eclampsia and parturient paralysis. This condition is relatively common in dairy cattle but it can and does occur in mares - especially good milking mares. The rarity of the condition, however, may cause horsemen to overlook the potentially life-threatening symptoms until it is too late.

Milk fever is caused by low levels of calcium in the blood. And producing large amounts of milk can put an excessive drain on a mare's blood calcium levels.

Since calcium plays a major role in the contraction and relaxation of muscle fibers, low levels of blood calcium cause the muscles to function improperly. One of the first indications of low blood calcium levels is that the muscle can contract but relaxation is delayed. This causes the mare to appear to be tying-up: her movement appears to be restricted by generalized crampiness.

If the blood calcium levels continue to

drop, the mare may begin to have periods of muscle spasms or convulsions where she is unable to move, eat, urinate or defecate. Trying to move the mare during one of these episodes may cause the condition to worsen.

Untreated, mildly affected mares may recover on their own but in severe cases, the tetany will lead to death.

Milk fever should not be confused with tetanus or lock jaw which is caused by Clostridium tetni - the bacteria that enters the body through breaks in the skin. In the case of tetanus, this anaerobic bacteria produces a toxin which prevents normal relaxation of the muscle fiber.

In spite of the similarity of the tetany occurring during both conditions, there are two symptoms which provide a quick way to differentiate between lockjaw (tetanus) and milk fever. Raise the head of a horse with tetanus and the third eyelid will fall and the horse with tetanus will also be extremely sensitive to sound.

The highest incidence of milk fever in mares occurs ten or more days after foaling. Unlike cows, mares do not reach peak lactation immediately upon the birth of their foals but gradually build up to maximum production over the course of several weeks. Therefore, the maximum calcium drain is postponed. Mares grazing on lush green pastures or receiving high energy milking rations are also at greater risk. Pushing mares into peak milk production, which can run as high as five to six gallons per day, may cause a tremendous blood calcium drain which can result in milk fever.

Treatment of this condition by the veterinarian will most likely begin with an intravenous infusion of a solution of calcium in order to slowly return the blood calcium levels to normal.

Mares usually respond dramatically to this treatment. Prior to treatment, they can not get up and appear to be taking their last breath. Immediately upon receiving this infusion, the mare may raise and begin to graze as if nothing

was ever wrong. However, recovery can also occur at a much slower rate, taking several days for the mare to return to normal and perhaps even another infusion of calcium to rebalance her body.

To guard against this condition, it is the mare manager's responsibility to provide the proper nutritional management of minerals, especially calcium and magnesium.

According to the NRC, the total diet should provide 0.5% calcium and 0.1% magnesium.

To reiterate, the symptoms of milk fever are:

1. anxiety (depression), dull eyes
2. stiffness in movement (tetany)
3. lies down and is unable to rise
4. elevated pulse
5. increased and violent respiration characterized by dilated nostrils and thumping sounds in chest (thumps)
6. excessive salivation or grinding of teeth
7. sweating
8. dilated pupils (coma)
9. tetanic convulsions

While it is not necessary for all of these symptoms to be present, the mare usually does not initially show a loss of appetite; nor is her temperature elevated. In spite of the rarity of this condition in the horse, as foaling season continues, the possibility of milk fever in mares should be on the minds of those responsible for the production of the next generation.

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