Care & Management of the Growing Foal (One Week through Weanling): Part 2

In Part 1 of this article, I discussed management and veterinary considerations for the baby foal from birath through one week of age. In this article I continue with some important health considerations for the growing foal from 1 week old to weaning. The period through weaning is a critical time for the developing foal. Healthy growth is critical for horses to reach their full athletic potential.

The young colt from the last article is beginning to eat some of the mare's feed. You notice that that he eats manure. He is vigorous, nursing well, and seems to be growing rapidly. You notice that he has some diarrhea still. You also notice that he has what seems to be an abnormal angle of the right front fetlock when viewed from the front. As he grows, you notice swellings appearing just above his fetlock joints.

These are typical observations made by those involved in the care and management of nursing foals. In this article, I address these concerns with emphasis on nutrition and developmental orthopedic disease, what I consider to be the most common problem in this age foal. I also discuss infected joints, vaccination and parasite control.

Proper nutrition is a critical part of managing the nursing foal. At one to two weeks, the foal is eating solid feed in addition to nursing many times per day. The foal sleeps much of the day between meals. Manure eating is normal. The foal populates his intestine with the essential bacteria and protozoa in the mare's manure. At two weeks, foal heat diarrhea is usually resolving, but a small degree of diarrhea may last for weeks and still be considered normal.

RAPID GROWTH

Up to six weeks of age, most of the foal's nutrition comes from milk. Starting at six weeks and through weaning the mare's milk production gradually declines and the foal eats more and more solid feed. The most common nutritional problem for foals of this age is over-nutrition and excessively rapid growth. Foals drink large quantities of milk and in addition are often being supplemented, or are eating the mare's grain. Excess energy in the feed causes the foal to grow faster than it should. This causes problems for the developing musculoskeletal system.

These problems are grouped into a category known as Developmental Orthopedic Disease (DOD). The syndromes that make up DOD mostly involve problems with the lengthening of bones with growth. This process involves converting soft cartilage to bone in a lengthening section of the bone known as the growth plate (physis). There are areas of enlargement in the bone accounting for both increased length of the bone (physis) and enlargement of the joint (epiphysis). Physitis affects growth of the lengthening long bone at the growth plate. Osteochondrosis (OCD) affects growth of the bone underlying the joint. This syndrome is also associated with "Wobbler Syndrome," spinal compression from abnormally developed vertebrae in the neck.

Physitis is caused by defective bone growth at the physis, or the area where bones are lengthening. This causes swelling, pain and may cause lameness. This problem can also be related to angular limbs through excessive loading of one side of the growth plate. A foal afflicted by physitis might seem sore and stiff, and have visible swellings, usually above the joints of multiple limbs. In the young foal these swellings are mostly just above the fetlock joints.

Osteochondrosis is caused by defective bone formation in the area directly under a joint. This causes a faulty foundation for the joint, allowing the joint surface to be irregular or even collapse, causing eventual lameness and arthritis. This

problem often is not discovered until training commences.

Excessively rapid growth may cause these problems the following ways:

- Overweight foal. Subjecting the delicate bone lengthening process to too much weight per unit area.
- Excessive Exercise. Moderate exercise is critical to healthy foal development. Foals that are fed a high-energy diet play more than foals that are fed a more moderate diet. This excessive exercise may irritate the physis by overloading it.
- Inadequate Nutrients. Excessive rate of growth at the growth plate may outpace the availability of other nutrients needed for healthy bone growth.

Growth-related problems can also result from other factors such as:

- Lameness in one limb can cause overload of the growth plates in the other limb.
- Genetics likely plays a role both in the tendency to have physitis/ OCD and in the potential for growth.
- Under-nutrition and improper mineral balance. Protein deficiency and imbalances of levels of calcium, phosphorus, copper and zinc have all been found to be involved in the development of some cases of DOD.

PREVENTION OF DEVELOPMENTAL ORTHOPEDIC DISEASE – DOD

Over-nutrition is the most common cause of developmental orthopedic disease. A foal generally cannot consume enough grass hay to cause a problem. Over-nutrition usually results when the foal is supplemented with additional grain or alfalfa or is eating too much of the mare’s grain or alfalfa.

- Do not overfeed foals. Pay attention to body condition of mare and foal. If necessary, separate mare and foal for supplementation as needed.

- Provide balanced nutrition. There are now many commercial, pelleted feeds designed for the growing foal. These generally have a good balance of energy, protein and necessary minerals. I recommend using these products rather than grains and large quantities of alfalfa to supplement foal diets.
- Know the signs of DOD and be on the lookout for them. Deal with them promptly by contacting your vet right away.
- Genetics: Breed individuals that do not have a history of these problems.

Careful observation is key. It is very important to observe your foal's legs as it grows and to know normal "correct" conformation. Flexural and angular limb deformities are deviations from correct limbs. Flexural deformities refer to abnormalities you can see when viewing the limbs from the side. Flexural deformities usually affects the joints of the lower limb and can appear at birth or be acquired, developing with time. Flexural deformities relate to a relative shortening of the flexor tendons of various joints. An example of a flexural deformity is "Club Foot." This is an abnormally upright hoof, which can be severe enough that the heel may be off the ground.

Angular limb deformities are abnormal angulations at joints, visible from the front or back. Your veterinarian can help you decide which of these problems will resolve spontaneously and which require treatment. Treatment for flexural deformities and angular limbs depends on the case and may involve exercise restriction, splinting, medications, surgery or a combination of these treatments.

The most important thing you can do is to recognize that these problems exist and know what to look for. If you have questions, call your veterinarian promptly. Early treatment of developmental limb problems is the key to their successful management. Delay causes irreversible change as the growth

plates “close.” This starts happening in very early life, depending on the specific growth plate in question. In addition to evaluation by a veterinarian, foals with angular limb and flexural deformities should have their feet trimmed and balanced regularly by an experienced farrier.

OTHER IMPORTANT MANAGEMENT CONSIDERATIONS

Young foals with severe lameness should be examined promptly by a veterinarian. A common cause of severe lameness in foals is septic arthritis (infected joint). An infected joint is a life-threatening problem and must be treated aggressively and correctly. This catastrophic problem usually results from spread of bacteria into the blood from intestinal, umbilical, and other infections. These blood borne bacteria then seed the joints, starting infection. Always keep an eye on the young foal’s umbilical area for swelling or drainage. Be aware that even if you cannot see swelling of the umbilicus, infection can exist, allowing bacteria into the blood.

FOAL VACCINATIONS

Foals out of mares that are current on their vaccination should be vaccinated the first time at four months for Encephalitis, Tetanus and West Nile Virus. Keep in mind that all foals require a second booster shot three to six weeks after the first. Studies suggest that it is best to wait to vaccinate foals for influenza and rhinopneumonitis until they are 6-12 months old. Other vaccines may be given based on advice of your veterinarian.

There is a reason not to vaccinate foals too early. A newborn foal gets its immunity from the mare’s colostrum or first milk. The concentrated antibodies from this colostrum are absorbed during the first day of life and this antibody is protective for the first few months of life. Giving a vaccine while these antibody levels are high is counterproductive. The vaccine itself (which is a prepared part of the actual virus) becomes bound up by the antibody in the foal’s blood. In this way both antibody and vaccine are used up, leaving the

foal unprotected against disease. Foals out of mares not currently vaccinated should have their vaccination program started at two months instead.

PARASITE CONTROL

Parasite control in the young foal is important. Young foals are very susceptible to internal parasites. I recommend monthly small doses (by weight) of safe products (ivermectin alternating with pyrantel is an example), beginning at one month of age and through a year. The foal's mother and any herd mates should be on an every two month worming schedule as well. It is important that this is coordinated with the foal's schedule.

The period through weaning is a critical time for the young foal's development. Careful management of nutrition and prevention of DOD during this time is important to maximize future athletic potential. Other important considerations discussed here are vaccination and parasite control, but this article only touches on a few important aspects. There are many other factors that must be considered in perfecting management of the growing foal. The better the management, the better the likelihood of producing a weanling that reaches its full potential for development and future performance.

By Douglas O. Thal DVM Dipl. ABVPBoard Certified in Equine PracticeThal Equine LLCLast Updated August 2011