

ALPACA CARE ~ FROM CRIA TO ADULTHOOD

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INTRODUCTION

The camelid family, which includes the alpaca and llama, have been around for centuries. These marvelous creatures have been noted in history books as far back as the 1400's. The Incan Empire was believed to have sacrificed an alpaca in the morning, noon, and evening in order to appeal to their gods. Their countries of origin include Chile, Peru, and Bolivia. Their fleece was used for clothing, their meat was used for survival, and their fecal matter was used for fuel. Alpaca fleece was often worn to demonstrate royalty. In the early 1500's the alpaca species came very close to extinction when the Spaniards conquered the Incan Empire and the land that they lived on. The Spaniards decided the best way to destroy the Incan Empire was to destroy their main survival item and religious icon. Alpacas were destroyed by the hundreds. The only key to the alpaca survival was that the Inca natives took their animals and hid them in the mountains. These rugged animals physically were put to the test of survival and due to their strong adaptation to that particular environment these creatures are still walking on this earth today.

The alpaca breed was introduced to the United States in the early 1980's and their popularity has been growing ever since. There are two different types of alpacas you may see. The first one is called a Suri alpaca. The fleece on these alpacas contains locks that hang vertically towards the ground. The second type of alpaca you may see are called Huacaya. Their fleece is more of a fluffy fleece and grows perpendicular to the skin. It is becoming more common for an individual to drive by alpaca farms or even buy clothing that has alpaca fiber present in it. With the number of alpaca and llama patients on the rise, our medical knowledge and husbandry information about these species needs to be on the rise and expanding. Veterinarians are no longer just treating companion animals. Knowledge is being challenged everyday with the introduction of these various species.

CRIA CARE

The beginning of a cria's life is very dependent on the dam. Like most of our other patients, colostrum is a necessity within the first couple hours of life. A first time mother may not have enough milk, may not let it down or may have colostrum of poor quality (low immunoglobulin content) or she may not adapt to having a "new baby" to take care of. A cria then may not receive adequate colostrum. Colostrum has immunoglobulins which help protect the body from disease and aid in growth. An alpaca owner should be prepared to intervene with frozen colostrum from another alpaca or llama if needed. Goat or cow colostrum may also be used for a "second best" replacement. The alpaca owner should request an IgG test be performed by your veterinary team. IgG, which stands for Immunoglobulin G, is an antibody found in the blood stream. There are tests available an owner can purchase to test the IgG on the farm but often times these tests are not the most reliable because the margin of error is higher. IgG results are a good indication if a new born cria has had a good start to life with

proper antibody protection. If an IgG is low a plasma transfusion is often times needed to aid the cria. There is a very small window of opportunity, typically 3 days, for this to be performed. The frozen plasma should be thawed in warm water and never microwaved. Microwaving plasma can denature the proteins (immunoglobulins) in the plasma. The route of administration is dependent on the cria's health. If a critical cria is presented for a transfusion the plasma should be given intravenously. These crias are usually flat out and an IV is placed with ease. If the cria is presented in better health but still requires a transfusion the route of choice would then be intraperitoneal. This route seems to be more comfortable for the cria. Crias are placed in a kush position ideally with the right side up. Banamine 1/4 cc SQ, is often given before the procedure to help minimize pain. The paralumbar fossa is the location for the transfusion. This area is clipped and scrubbed sterilely for preparation of the transfusion. An 18 gauge 2" catheter needle is a good choice for catheter placement. The catheter is directed toward the cria's midline and placed about 1" through the skin and the peritoneum. Remove about 1/2 of the needle out of the catheter at this time to prevent any lacerations that could occur if advanced too far. You should then advance the remaining catheter into the peritoneal area and remove the catheter needle. A plasma bag is attached to an IV line which is attached to the catheter and the transfusion is begun. The catheter may need to be adjusted during this process if it becomes lodged against the wall of the peritoneum or a loop of bowel. Typically the transfusion takes anywhere from 5-10 minutes. It is recommended to recheck an IgG level in 48 hours post transfusion in hopes that it has brought the alpaca IgG levels up into a desirable range. The recommended plasma dosage for crias are as following 15~18 lbs. should receive 300ml, 19~22 lbs. should receive 400mls, 23~26 lbs. should receive 500mls, and 27~32 lb. crias should receive 600mls of plasma.

There are some important steps to follow when a cria is first born to help provide the best quality of life. The newborn cria's navel should be dipped in an iodine solution when the cria is first born followed up by dipping the navel at least 3 more times in a 24 hour period. The umbilical cord is a good route for bacteria to enter into the body. The owner should also watch for urination and for the cria to pass its first meconium. If it looks as though the cria is having difficulties with a bowel movement a warm water enema is often needed for assistance. The next thing an owner may be responsible for is feeding the cria. If a mother does not allow the cria to nurse or a cria is having difficulties with the concept of nursing an owner may need to intervene. Knowing how much to feed a cria is an important part of the equation when supplementing milk. The formulation used to calculate this is by knowing that a newborn cria requires 10% of its body weight for maintenance and another 5% for growth and gain. A typical birth weight of a newborn cria is around 10~17 lbs. An example of how to calculate this out is as follows: 10% of a 25 lb cria is 2.5 lbs.

8lbs = 1 gallon

1 pint = 1 lb

16 oz = 1 pint

2.5 lbs equals 2.5 pints which equals 40 ounces each day. This total should be split into 4~6 feedings per day for healthy crias. A premature cria's feeding should be split into every 2~3 hour feedings. An owner may need to gradually add another 5% to the feeding for proper weight gain. An owner needs to increase the amount of feeding very slow, 1% every 3~4 days until you reach 5%. Be sure to keep encouraging the cria to nurse off of

the mother because her milk is the best for a cria. Owners also need to think about the crias temperature. The normal temperature of a cria ranges anywhere from 100~102.5°F.

THE TRANSITION INTO ADULTHOOD

Life expectancy of an alpaca is between 15 ~ 20 years of age. To achieve this lifespan, proper care is just as important in the alpaca's adulthood years. Some of the most important factors to consider in keeping the healthy camelid herd is nutrition and parasite control. Problems such as infertility, poor doing crias, poor fiber quality, disease susceptibility and premature mortality all can be results of poor nutrition and inadequate parasite control.

Constructing appropriate rations should involve the assistance of a trained nutritionist that will construct a proper ration for each of the groups in a herd. Juvenile groups have different requirements than adults and they all are different in their nutritional needs than gestating or lactating females. Forage analysis is a key component to appropriate ration construction and balancing. Often, suboptimal forages will make the ration much more expensive due to the need for extra protein and energy in certain animal groups and the subsequent need to purchase these components in the form of grain mixes to supplement. Alternatively, excellent quality forages can be mixed with lower protein and lower energy feedstuffs for certain groups with lower requirements. Few camelid operations work to optimize their ration to this degree, but assisting them to do so and educating them to the needs for it are an important part of our duties on these operations.

Most of these operations rely on their reproductive programs for income and very little comes from fiber. As a result, veterinary interventions on these operations tend to be weighted towards these activities. A discussion of the repro basics is in order. Female alpacas reach their reproductive age at about 16~20 months. Unlike some species, heat cycles are not often overtly shown. Proper teasing with a male is therefore important. An alpaca's gestation length is around 335 days. Ultrasounding for pregnancy can occur as early as 21 days. Embryonic deaths are quite common in Llamas and Alpacas. They are very sensitive to increased temperatures therefore heat stress can be a primary cause of abortion. Poor nutrition, as stated earlier, also plays a role in their infertility and early embryonic deaths. The occurrence of an alpaca carrying multiple fetuses is rare. Male alpacas reach reproductive maturity at around 2 ½ years of age. A male can breed a female as early as 15~20 months. Testicles on males are carried much closer to the body. This can lead to sterility due to the alpaca's body heat. If castration is an option for a male alpaca, this procedure can be performed at any age.

PARASITE CONTROL

Deworming is an area owners need to pay close attention to but often slips through the cracks. A farm may never be free of parasites but with the help of the veterinary team, the negative impact of parasites should be manageable. Like many animals, camelids can become infected with sarcoptic mange mites. They can be transmitted through bedding, clothes, grooming equipment, and even dust baths. Skin scrapes are needed for identification. Typical spots occur between toes, abdominal area, chest, and thigh area. Treatment for sarcoptic mange is Dectomax 1ml/50 lbs. SQ given every 10 days for 3 treatments. Another commonly seen parasite is coccidia. Diarrhea in

young stock tends to be the primary complaint. Treatment options for coccidiosis would include Corid at 25mg/lb of body weight orally for 5 days, or SMZ-TMP oral suspension at a dose of 1ml/5lbs orally for 5 days. Meningeal worms can be a deadly parasite in the camelid species. The meningeal worm is common parasite in white tail deer. This parasite can live its life cycle in the deer without causing harm to the deer but unfortunately this is not the case for llamas and alpacas. An alpaca can become infected by this parasite by ingesting the intermediate host, a slug or snail. The larvae travel through the central nervous system causing trauma to the nervous tissue which then produces neurologic symptoms. The larvae are able to reach the spinal cord and brain within 10~14 days after an animal is exposed to the parasite. Symptoms of this parasite damage will vary depending on the amount of worms present and the location they have traveled to. Symptoms can range from a leg weakness and lameness to paralysis. Blindness, head tilt, circling, or disinterest in eating could all be signs that the meningeal worm has traveled to the brain or brainstem. There is no adequate way of testing for the disease other than sedating the animal and drawing cerebrospinal fluid for evaluation. Fecal samples will not show this parasite because it does not shed eggs like most. Treatment options for alpaca are steroids, higher dosage of ivermectrin or fenbendazole and supportive therapy if needed. Damage caused to an animal by this parasite is unfortunately generally considered to be irreversible.

VACCINATION GUIDELINES

Vaccination Program design and integration for these camelid operations must be carefully constructed based upon the disease prevalence in the specific area of the country.. Dr.Anderson of Ohio State has come up with a nice protocol for core vaccinations that your hospitals may use as a starting point to protect these operations.

tetanus)	Pre-weaning 2~3 days old	Vaccination Clostridium C&D (also contains
	2~3 weeks old	C&D
	Weaning 4~6 months old	Clostridium 7 or 8 way
	Yearlings 12 months	Clostridium 7 or 8 way
	Pre-Breeding 18~24 months	Clostridium 7 or 8 way
	Annually vaccination Pre- breeding or 60 days before birthing	Clostridium 7 or 8 way Clostridium C&D

Noncore vaccinations to consider are Rabies vaccinations, Leptospira vaccination (3-4 times per year if endemic), or an E.coli vaccination may be an option if diarrhea issues occur.

THE TECHNICIAN'S ROLE

The licensed technician plays a very important role in the field of alpaca medicine. Many of these operations would rather hire a licensed veterinary technician to implement their health intervention programs rather than hire a full time person and train them. There are many opportunities to implement the SOP's that your veterinary team has developed for an operation. Routinely visiting and implementing vaccination and deworming programs is an important way to be on these operations regularly and assist them. Cria care and IGG level assessment and plasma transfusions are critical areas that LVT's can assist. In hospital procedures such as anesthesia, surgical assist and diagnostic imaging are also very rewarding areas to spend some effort as an LVT. Certainly, client education is one of the most important roles that we will perform for any of our clients and our professional approach will make the health and wellness of these animals improve dramatically.

CONCLUSION

The camelids are a rare and unique species that is slowly increasing in numbers in the U.S.. With this increase, many owners will tend to look to their veterinarian and technician for support and knowledge. Veterinarian and technician roles have become ever so important in regards to vaccination schedules, deworming protocols, wellness programs, laboratory testing and other SOP development. Well educated clients tend to make the best clients and healthy patients should be the goal for not only the farmer but also the entire veterinary team..

REFERENCES:

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- 2) <http://www.sheepandgoat.com/articles/deerworm.html>
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