

# Starting off in small ruminant practice

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## Abstract

The objective of this presentation is to provide useful and applicable information about common diseases and conditions that are encountered when including small ruminants and camelids in your daily veterinary practice. Being able to diagnose, manage, and treat common diseases requires basic knowledge and tools that any veterinarian can easily acquire. Anecdotally, the most common ailments encountered in practice, and that will be discussed today, include foot rot, urethral obstruction in male goats and sheep, rhododendron toxicity, dystocia, grain overload, pregnancy toxemia, external and internal parasites, arthritis, and polio.

**Key words:** small ruminants, urethral obstruction

## Common Health Issues

### Foot Rot

This disease is typically seen in goats and sheep as an infection of the foot, causing separation of the wall and sole which leads to lameness of the affected foot. It is easily identified as a black moist material between the sole and wall, or as a white flaky caseous, odorous substance sitting between the wall and sole.

Treatment of footrot includes:

- Aggressive trimming of the hoof to open and expose bacteria to air. The bacterial organism is anaerobic, thus exposing to oxygen helps rid the infection.
- Antibiotic treatment with either florfenicol or oxy-tetracycline to help eliminate bacteria.
- Severe cases can be treated by soaking the foot in 10% zinc/copper sulfate for 10 to 15 minutes twice weekly until resolved.

Prevention is the most important step:

- Trim hooves every 2 to 3 months to prevent areas of overgrowth.
- Provide an environment where animals are kept in clean and dry areas the majority of the time.

### Urethral Obstruction

Typically the owner reports that the animal has been “off” for 12 to 48 hours. In addition:

- The owner has not seen the animal urinate in past 12 to 48 hours.
- The animal is laying down, but is able to get up when forced to rise (animal is just choosing to lay down).
- Animal is vocalizing or grinding its teeth.
- Animal is acting “constipated”.

- Animal is standing in “saw horse” stance.

Physical exam typically reveals the following:

- Tachycardia.
- Sheath is dry when palpated.
- Urethral pulse is present.
- Pain on penile palpation.
- Bladder ultrasound reveals bladder at 8 cm diameter or greater.

Treatment of urethral obstruction includes:

- Sedation and amputation of pizzle/urethral process.
  - Often if unsuccessful, the stone can be felt in urethra near the banding site. This area can be clipped, cleaned, and then incised to remove stone. Affected area is left open.
  - Passing a catheter is often unrewarding.
- If the pizzle/urethral process amputation is unrewarding, further imaging, and possible abdominal surgery for **tube cystotomy** are necessary.
- Often euthanasia is chosen, as tube cystotomy is costly and may be unrewarding.

Prevention of urethral obstruction includes:

- Encourage water consumption.
  - Fresh water buckets.
  - Encourage salt consumption.
- Provide a loose or block local mineral specific for goats.
- Discontinue grain.
- Discontinue alfalfa.

### Rhododendron Toxicity

Presentation: The owner will call to report animals (usually goat) are either foaming at mouth, or violently vomiting all over the walls of the barn, and have a history of consuming rhododendrons, azaleas, or laurels.

Treatment for rhododendron toxicity includes:

- Banamine.
- Milk of magnesia mixed with baking soda orally.
- Vitamin B complex.
- Antibiotics for possible aspiration pneumonia.

### Dystocia

Presentation: Discuss 30 30 30 30 rule with the owner. After the owner sees a bag, the owner should see a head or a limb within 30 minutes. After seeing a head or a limb, the owner should have a baby on the ground within 30 minutes. After having a baby on the ground, the owner should see another bag within 30 minutes, etc. If longer than 30 minutes, it is time to investigate to see why labor is not progressing.

Treatment: Manage dystocias as follows:

- Clean the rectum, vulva and perineal area with dilute chlorhexidine.
- Attach a rubber tube to lube pump. Pump the uterus full of lube until it is coming out of back-end. Insert well lubed, sleeved clean arm into uterus to investigate.
- Epinephrine may be used to relax uterus to allow manipulation.
- Having clean dry towels, and a small lamb or pig snare is extremely important to be able to correctly and carefully manipulate cria, lambs, and kids. Chains are rarely (if ever) used.

### **Grain Overload/Ruminal Acidosis**

Presentation: Most acidosis occurs when animals break into a grain bin and consume large amounts of grain, or the animals are contained near chickens, and break in and consume chicken grain. Sometimes these cases can also be combined with polio or urethral calculi, or both, as a secondary condition to grain overload.

Treatment includes the following:

- Tubing with large amounts of warm water and milk of magnesia.
- Banamine (flunixin meglumine).
- Antibiotics for prophylactic treatment of liver abscesses.
- Vitamin B complex.
- Severe cases need rumenotomy and/or cud transfer.

Prevention: Lock doors and discuss proper grain storage with owners.

### **Pregnancy Toxemia**

Presentation: Typically this condition occurs in goats or sheep in last trimester of pregnancy, and they suddenly become weak or recumbent. In most cases, the dam was either very underweight, or very overweight when bred. Usually the owner has **not** been feeding grain or alfalfa during last month of pregnancy

Physical exam:

- Weak and recumbent.
- Ruminal hypomotility → atony.
- High blood for ketones. You can use a “Precision Xtra” ketone meter with test strips.

Ketone levels:

- <0.8 - Normal.
- 0.8 - 3.0 - Subclinical ketosis.
- >3.0 - Clinical ketosis.

Treatment of pregnancy toxemia should be attempted is follows:

- Nutridrench,
- Flunixin meglumine.
- Calcium, potassium, phosphorus, magnesium, dextrose (CMPK) injection.
- Vitamin B complex.

If needed, attempt abortion; if no response, perform c-section. Aborting the baby removes energy demands - abortion should occur in ~30 hours.

Prevention of pregnancy toxemia:

- Maintain an ideal BCS when females are bred.
- Feed each ewe/doe approximately 1 to 2 lb (0.45 to 0.90 kg) of grain per day in last trimester of pregnancy.

### **External Parasites**

The prominent external parasites of sheep and goats include:

- Biting lice. Typically tan lice with darker tan head.
- Sucking lice. Typically dark from sucking blood.
- Mites. Typically found on caudal aspects of the back legs. Red crusts and scabbing is seen immediately distal to dewclaws.

Treatment:

- Biting lice. “Ultra Boss” pour-on insecticide.
- Sucking lice. Ivermectin administered subcutaneously.
- Mites. Eprinex pour-on anthelmintic.

Prevention of external parasites:

- Start topical lice treatment in winter months.
- Clean housing.

### **Internal Parasites**

Presentation: The 2 main parasites that you deal with are strongyles and coccidia.

- Strongyles. Typically affected animals are 6 months of age and older, and are often weak and lethargic secondary to anemia.

Physical exam:

- Ill thrift.
- Pale mucous membranes.
- Underweight.
- Coccidia

History:

- 3 weeks to 6 months’ duration.
- Hunched back.
- Diarrhea.
- Weight loss/underweight.
- Ill thrift.

Physical exam:

- Ill thrift.
- Pale mucous membranes.
- Diarrhea.
- Lethargy.

Treatment:

- Strongyles.
  - 1st treatment: fenbendazole for 1 day.
  - 2nd treatment (if first treatment not effective): fenbendazole for 3 to 5 days.
  - 3rd treatment (if second treatment not effective): Cydectin (moxidectin) orally.

- Coccidia.
  - Sulfadimethoxine, 12.5% or 5%.

Prevention:

- Discuss fecal-oral contamination. Look at every bucket, feeder, etc. in the barn that could be a possible source of fecal-oral contamination. Change placement or facilities where necessary to prevent infection.
- Conduct routine fecals every 3 to 6 months on 20% of the herd, or immediately on animals that are sick, losing weight, or have diarrhea.

### **Polio**

Presentation: The animal was normal day before, now seems slightly off, separates itself from herd, and progresses to recumbency.

Physical exam:

- Always check menace – menace response will typically be absent, and is your first clue that the animal may have polio. (Remember to always use your pointer finger when testing menace, not full hand, as air can cause them to blink. Also, always aggressively test palpebral reflex 3 to 4 times prior to testing menace so that the animal knows you will be poking it in the eye when testing menace.)
- Bruxism.
- Nystagmus.
- Decreased or absent papillary light response (PLR).

Treatment should include:

- Thiamine or Vitamin B complex.
- Flunixin meglumine or dexamethasone.
- Penicillin or oxytetracycline.
- Supportive care.

### **Arthritis**

Presentation: Older animals typically that are:

- Walking on their knees.
- Having difficulty getting up from a laying-down position.
- Holding up 1 limb while standing, then the other, then back to the original, etc.
- Laying down and can't get up, but owner can move them from laying down presentation to standing position of the owner helps get them up.

Physical exam:

- Severe muscle atrophy, typically of the biceps femoris, and quadriceps.
- Decreased range of motion in joints.

Treatment of arthritis includes:

- Encourage owner to get animal up and walk around multiple times a day; put animal into standing position if laying down.
- Pain and anti-inflammatory medication (caution—seek advice from FARAD regarding pre-harvest withdrawal times):
  - Meloxicam.
  - Gabapentin.
  - Adequan.

Prevention: Ask questions early on in order to educate owners on what to look for in regards to catching arthritis early. If detected early, medications can be started that may encourage animals to walk around more, which limits muscle atrophy and secondary complications.