

Caprine Abortion (Prevention and Control)



Susan L. McClanahan, DVM
University of Minnesota
College of Veterinary Medicine



Introduction

- Abortions most commonly observed during last 2 months of gestation
- Early to mid gestation fetal losses usually not detected
- Abortion rate $>2\%$ is unacceptable
- Causes can be infectious agents, stress, nutritional, pharmaceuticals, toxic plants, parasitism, or unknown



Introduction

- Abortion outbreaks can cause serious economic losses (short and long term)
- Abortion agents may become endemic
- Most outbreaks are highly contagious
- Infectious agents are usually zoonotic
- Reference: Sheep and Goat Medicine Book (D.G.Pugh, 2003), good reference to own



Abortion Prevention Program

- Construct a good biosecurity program
- Know the seller of the animals
- Ask for health records with history
- Visit the farm of origin or the seller
- Ask questions regarding preventive health
- No farm is perfect but educated owners are ideal
- If you have concerns, call experts for advice before purchase
- Quarantine new additions for 30 days



Prevention Program

- Maintain good body condition scores
- Good nutrition, clean water and feed
- Reduce potential contaminants: store feed properly and away from rodents/cats
- Environment: clean, uncrowded, stress-free
- Maintain records on all activities of the herd



General Control Measures

- Construct preventive health strategies
 - Good nutrition
 - Sound vaccination program
 - Parasite control (certain dewormers cause abortion, be aware)
 - Clean, dry, low stress environment
- Keep cats healthy (neuter, VAX, deworm)
- Reduce the feral cat population
- Develop good observation skills
- Keep the environment clean



Are there any concerns here???



General Control Measures

- Provide all feed and water off the ground
- Reduce fecal-oral contamination
 - Controls parasites, bacterial diseases
- Prudent use of feed additives
- Feed quality forages (feeding excessive corn does not make up for feeding poor, low protein hay)



General Control Measures

- Don't put individuals or groups of newly purchased and resident pregnant does together until after kidding,
- Raise & kid doelings separately from mature does if possible
- Do not bed pregnant does with bedding from the kidding area or contaminated with cat feces



What to Do if a Doe Aborts

- Isolate aborting doe (s) immediately
- Never ignore any abortion!
- Use clean technique when handling doe or fetal tissues (wear gloves, wash hands!)
- Consult your veterinarian for guidance
- Disinfect contaminated areas
- Prophylactic antibiotics (feed, water, injectable) should be considered



Abortion Diagnostics

- Make every effort to collect placenta/kids
- Place tissues in leak proof plastic bags
- Refrigerate or chill, don't freeze
- Have your veterinarian collect blood
- Send tissues/blood into the Minnesota Veterinary Diagnostic Lab: they are the experts in abortion diagnostics
- Provide a detailed history to the lab!!



Common Non-infectious Causes

- Nutritional: poor body condition score, energy and protein deficiencies (abortions usually 90-120 days in gestation)
- Pharmaceuticals: read the labels (albendazole, levamisole, steroids, prostaglandins)
- Parasitism: leading to blood and protein losses
- Stress: cold weather, predators, over-crowding



Non-infectious Causes

- Minerals: deficiencies in Iodine, Manganese, Copper (feed or water sources containing excessive Sulfur, Iron, Zinc, or Molybdenum can decrease Copper availability of absorption)
- Palatable free-choice trace granular mineral salt is usually preventative
- Plants that accumulate nitrates: sweet clover, oat hay, sorghum, Johnson grass, pigweed, sunflower or drought-stressed crops causing toxicity



Most Common Infectious Causes

Remember: Most abortion outbreaks are due to infectious causes and are most likely zoonotic (infectious to people)

Handle tissues with caution: use gloves, isolate animals, check records, use disinfectant, call your veterinarian for guidance and advice, use the Diagnostic Lab



Infectious Causes

- Most consistent finding with most cases of infectious abortion is placentitis
- Placentitis: infection of the placenta, placenta usually appears abnormal (thickened and brown) and can be retained
- Resulting in retarded fetal growth, death, and possible septicemia (blood infection) of the doe



Most Common Infectious Causes

- Chlamydia psittaci (Endemic Abortion)
- Q Fever
- Brucellosis (sporadic in Texas and Colorado)
- Leptospirosis
- Salmonellosis
- Toxoplasmosis
- Listeriosis
- Campylobacter (more common in ewe abortions)



Chlamydia psittaci

- One of the most common causes of abortion
- Clinical signs: pneumonia, pink eye (keratoconjunctivitis), epididymitis, polyarthritits, fever
- Pigeons/sparrows may be reservoirs, insects and tick may be involved in transmission
- Chlamydia may live in the intestinal tract, then multiply during pregnancy attacking cotyledons
- Aborting does shed large numbers of the organism in uterine discharge, fetuses, placenta



Chlamydia psittaci

- Does are contagious up to 4 weeks after the abortion ZOOONOTIC!
- Abortion occur after day 90 of pregnancy
- Infected females that have aborted may continue to shed the organism in vaginal secretions, feces
- Following year, no infertility, natural immunity lasts about 3 years
- Rams may be carriers in semen
- Also called Endemic Abortion



Treatment and Control Options

- Oxytetracycline (20mg/kg) injectable at 105 and 120 days of pregnancy
- Chlortetracycline (200mg/head/day) during pregnancy
- Chlortetracycline (250mg/head/day) during outbreaks
- One gram active tetracycline per gallon of water for 5 days every month during pregnancy
- Attention to meat and milk withdrawals
- Decontaminate environment



Q Fever

- ZOOONOTIC! Livestock may not show many clinical signs
- Organism is hardy and can live in dried condition for extended time
- Animals/humans: infected by inhalation of contaminated dust or thru contact with aborted material or infected animals
- Can be sexually transmitted between animals
- Pastures can become contaminated, also tick transmission



Q Fever Clinical Signs

- Non-pregnant females may not have any clinical signs or mild conjunctivitis and upper respiratory signs (cough, snotty nose)
- Pregnant females: anorexia, depression, late term abortions or stillbirths
- After infection, animals become immune
- Highly contagious to sheep/goats, humans



Treatment and Control

- Oxytetracycline (20mg/kg) injectable
- Treat all goats on farm for 2-3 weeks
- Attention to meat and milk withdrawals
- Decontaminate environment, if possible
- Environment can be contaminated for long period of time
- Organism can be aerosolized with dust



Brucellosis (*B. melitensis*)

- Also ZOOONOTIC! Most often in Texas and Colorado
- Organism excreted in milk, urine, feces, placenta, 2-3 months after abortion in vaginal discharge
- Kids can be born infected
- Abortion is during final trimester
- Rare: fever, depression, diarrhea, mastitis, lameness, orchitis/epididymitis (males)



Leptospirosis

- Goats and sheep less susceptible than cattle
- Usually Lepto interrogans serovars (pomona most common)
- Usually infection occurs after exposure to urine from other sheep or goats, or contaminated water
- Clinical signs: fever, anorexia, jaundice, red urine, anemia, nervous disease, abortion during last trimester
- Organism shed in urine **ZOONOTIC!**
- Antibiotics ineffective: ruminants are carriers



Salmonellosis

- ZOOONOTIC!
- Sources of Salmonella: birds, cattle, feed
- Stress: climatic changes, shipping, over crowding, diseases can predispose herd
- Route of infection: oral, common in feces
- Clinical signs: fever, diarrhea, depression, abortion thru-out gestation but most common in last trimester
- Injectable Ampicillin at 5mg/lb for 7 days



Toxoplasmosis (*T. gondii*)

- ZOOONOTIC! Worldwide distribution, common infection
- Cats vital in transmission by ingesting rodents or birds, shed oocytes in feces
- Does infected by contaminated feed/water
- Abortion, fetal mummies, stillbirth, weak goat kids (does usually normal acting before aborting)
- *T. gondii* also found in semen but transmission to does is unlikely
- Serology important



Treatment and Control

- Monensin (15-30mg/head/day) throughout pregnancy
- Control of cats, management practices



Listeriosis (*L. monocytogenes*)

- ZOONOTIC!
- Clinical signs: septicemia, brain disease (meningoencephalitis), fever, blindness, depression, abortion
- Organism shed in milk and feces
- Can be found normally in soil, water, silage, plant litter, feces, hay, boggy areas
- Organism likes to grow in high-pH (basic conditions)
- Goat kids can contract the disease thru milk



Treatment and Control

- Good response to penicillin, tetracycline, or florfenicol for 7-10 days
- Adhere to meat/milk withdrawals
- Decrease exposure (organism prefers alkaline soil or improper ensiled silage)



Any questions or comments?

- Thanks to the University of Minnesota, Extension Service and the producers who have hosted us (including the veterinary students) on their farms
- Thanks to Pipestone Veterinary Clinic: good resource (www.pipevet.com)
- Remember: Biosecurity, Call your veterinarian, Send tissues to Diagnostic Lab, Wear gloves, Isolate Aborting Does, Disinfect!!!