Calving Management

Derek Foster, DVM (for Harrison Dudley, DVM)
Assistant Professor, Ruminant Health Management
Dept. of Population Health and Pathobiology
Outline

• Define normal birth process
• When to intervene
• How to intervene
• Neonatal resuscitation and support
Stages of Parturition (Birthing)

• First (4-8hr)
  • cervical relaxation
  • uterine contractions
  • ends with complete cervical dilatation and rupture of the fetal membranes

• Second (2hr)
  • active contractions with the fetus in the birth canal (stage of true labor)
  • ends with the expulsion of fetus

• Third (12hr)
  • expulsion of fetal membranes
  • beginning of uterine involution
Stage 1
Stage 1
Stage 2
Stage 2
Stage 2
Stage 2
Stage 2
Stage 3
Stage 3
When to intervene

• Stage 1 should be no longer than 8 hours
  • Typically less for mature cow, longer for heifers
• Stage 2 should last no more than 2 hours
  • Did you see her actually “start”?  
• The delivery should progress every 30 minutes
  • If cow not done in 2 hours, or not progressing for more than 30 minutes, check the cow.
  • If you know what the problem is and know how to correct it, proceed.
  • If the calf isn’t delivered in 30 minutes, call vet
Dystocia

• Any difficult birth due to maternal or fetal abnormalities

• Aren’t they all difficult?
Causes of dystocia

**Maternal Causes:**
- Birth canal defects, size mismatch
- Uterine torsion
- Uterine inertia
  - Primary: lack of exercise, old cow stretching
  - Secondary: exhaustion
- Nutritional deprivations
  - Calcium
  - Magnesium
  - Energy/protein
- Nutritional excess
  - Fat in birth canal

**Fetal Causes:**
- Twinning
- Oversized calf/dysmaturity
- Deformities
- Fetal monsters
- Postural defects
Common Causes of Bovine Dystocia

• Fetal oversize
  • Relative - normal size fetus, but maternal pelvis is abnormally small (common in heifers)
  • Absolute – maternal pelvis is normal, but fetus is abnormally large
• Most can be treated with forced extraction
• May require fetotomy
• More difficult in posterior presentations
  • prolonged partial labor reduces lubrication
  • contrary direction of fetal hair
Prolonged gestation/fetal dysmaturity
Ankylosed Joints

PeroSomus elumbis

Arthrogyrosis multiplex (curly calf)
Bovine Fetal Monsters

• *Shistosomus reflexus* – acute angulation of spinal column and incomplete closure of the abdominal wall
Bovine Fetal Monsters

Hydrocephalus
Twinning

• Great, when it goes right...
Twinning

Conjoined twins...not so great
Postural defects

• Normal delivery
  • Front feet first
  • Head tucked between carpi
  • “Diving out”

• Posterior position with legs in full extension can be equally successful, but not considered normal
• Any deviation from the “diving” position can be problematic and may require intervention

• Before you can correct a dystocia, you have to be able to identify the problem!!

• Never just start pulling!!!!!!
Involve professionals!

• North Carolina:
  • Only a licensed veterinarian is legally permitted to diagnose, treat, or advise on any medical condition.
  • Pregnancy (problems with) and parturition = medical condition/diagnosis

• Utilize veterinarians who understand the cattle business and are dedicated to becoming a business partner.

• “Vet as last resort” mentality is not utilizing services adequately.
Dystocia Correction

• Objective is to deliver a viable fetus while preventing injury to the dam
  • May settle for a compromise
  • Multiple factors to consider
  • Value of calf vs. cow
Approach to Dystocia

• Good history
  • Length of gestation
  • When were the first signs of labor?
    • Previous manipulations by the owner
  • Breed of the bull

• Place dam in desired location (that is safe for handler and cow)
  • Correct the dystocia with the cow standing
  • Deliver the calf with the cow in lateral
Handling Dystocias

• Attempt to correct in one manner for 15 minutes
• If no progress, move to another approach
• Maintain a relatively clean uterine environment, as a C-section is the ultimate choice
Common Causes of Bovine Dystocia

• Postural defects in anterior presentation
carpal flexion – grasp foot and pull upward and outward
Common Causes of Bovine Dystocia

• Postural defects in anterior presentation
  Lateral deviation of the head and neck
• Postural defects in posterior presentation
  Hock flexion – uni- or bilateral
• Postural defects in posterior presentation
Hock flexion – repel and place into fetlock flexion
• Postural defects in posterior presentation
  Bilateral hip flexion – true breech
Obstetrical Equipment

• Lube
  • J-lube (polypropylene powder) vs. carboxymethylcellulose
    • First rule of theriogeneology (veterinary reproduction)

• Long chains with handles OR clean ropes
  • Stainless steel vs plated
    • Preferably sterilized

• Head snare (+/-)

• Considerable operator preference involved
Forced Extraction

Defined as the withdrawal of a fetus from the dam through the birth canal by means of outside force/traction application.

Never use more force than the strength of two men—no winches, tractors, pulleys, etc.

Exception (?): properly applied CalfJack® can exert force of 3 grown men.
Proper Placement of Obstetrical Chains
Results of Improper Placement of Obstetrical Chains and Excess Extractive Force
Proper Placement of Obstetrical Chains

- Around the poll and through the mouth, but not around the mandible
- The mandible will break
Procedure for Forced Extraction

• Three point traction when possible

• Direction of extractive force
  • Begin pulling up and back
  • After the head is at the vulva direction changes to down and back
  • Alternate traction on the limbs and head
  • Rotate fetus 30 degrees right or left just before the fetal pelvis enters the maternal pelvis
Assessment of Fetal Reflexes

• Depress fetal globes $\rightarrow$ globes move or eyelids flutter
  • Last reflex lost
• Insert finger into mouth $\rightarrow$ suckling response
  • First response lost
• Insert finger into anus $\rightarrow$ anus contracts
• Pinch skin $\rightarrow$ withdrawal reflex
• Flex a limb maximally $\rightarrow$ withdrawal reflex
Following Dystocia Correction

• Examine the uterus for the presence of another fetus
• Examine the uterus for tone
• Examine the birth canal for the presence of lacerations

• Cord should break when cow stands or as calf is pulled
  • Do not cut or pull on cord or afterbirth
Neonatal resuscitation and support

• One person stimulates the calf
  • Place in sternal, rub vigorously with clean towels, stimulate nose
    • Needle in philtrum, straw up nostril
  • Do not sling the calf or hang upside down

• If calf not breathing spontaneously...
  • Compress chest behind elbow 50-90x/min
  • Blow into nose 20-30x/min
  • Attempt for 5 minutes
  • Compressions more important than breaths
Neonate Support

• Any calf born through dystocia needs colostrum supplementation
  • Easy pull...maybe not, but still good idea
  • Milk out cow and tube feed calf >> saved colostrum from another cow in herd
    >> bovine colostrum replacer >> colostrum from another herd

• Dip navel
  • 0.5% chlorhexidine, 7% iodine, Vetricyn® Navel dip
  • CLEAN cup

• Isolate with dam (only if cow is comfortable with confinement)
  • Enhances bonding
  • Can be dangerous for compromised calf if cow nervous or rejecting

• Once calf is up and nursing confidently, pair can be returned to herd
Questions?

• Demonstrations on dummy calf