

Calving Management

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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



Arthrogryposis 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



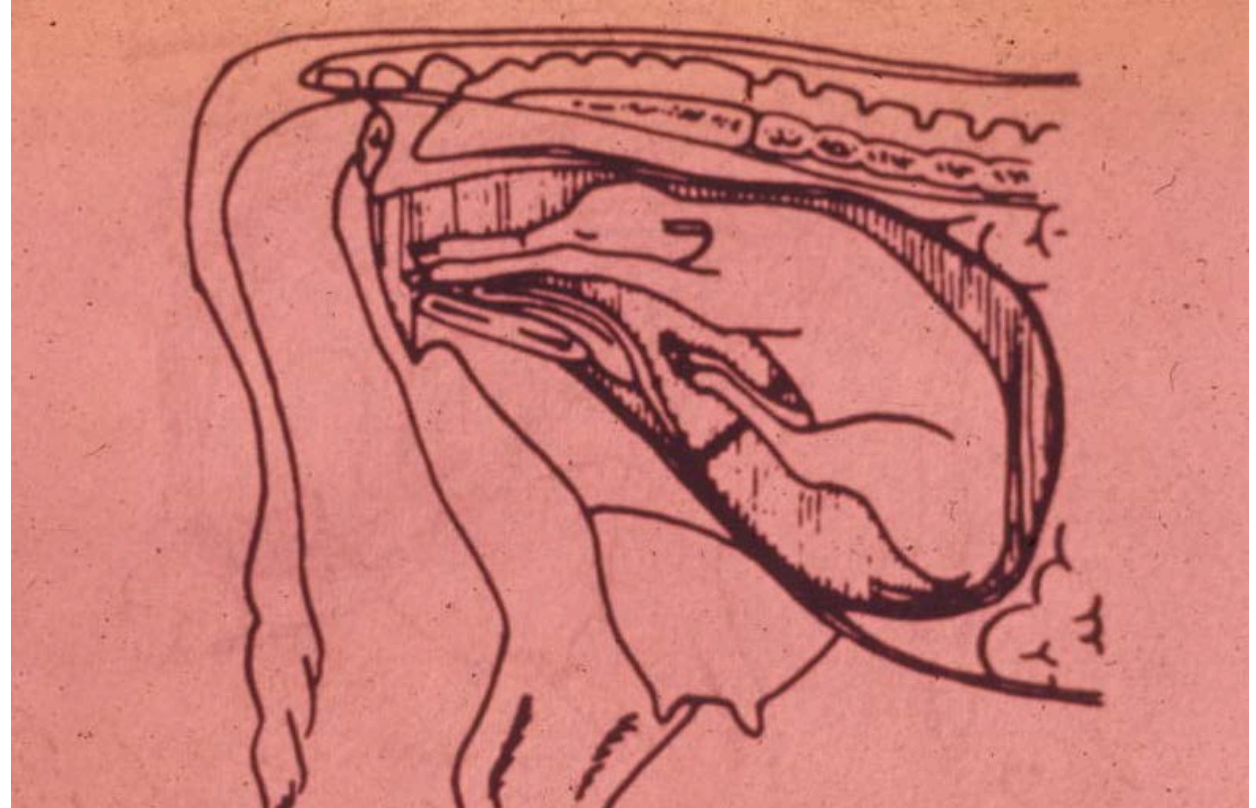
Conjoined twins...not so great

NC STATE

Veterinary Medicine

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

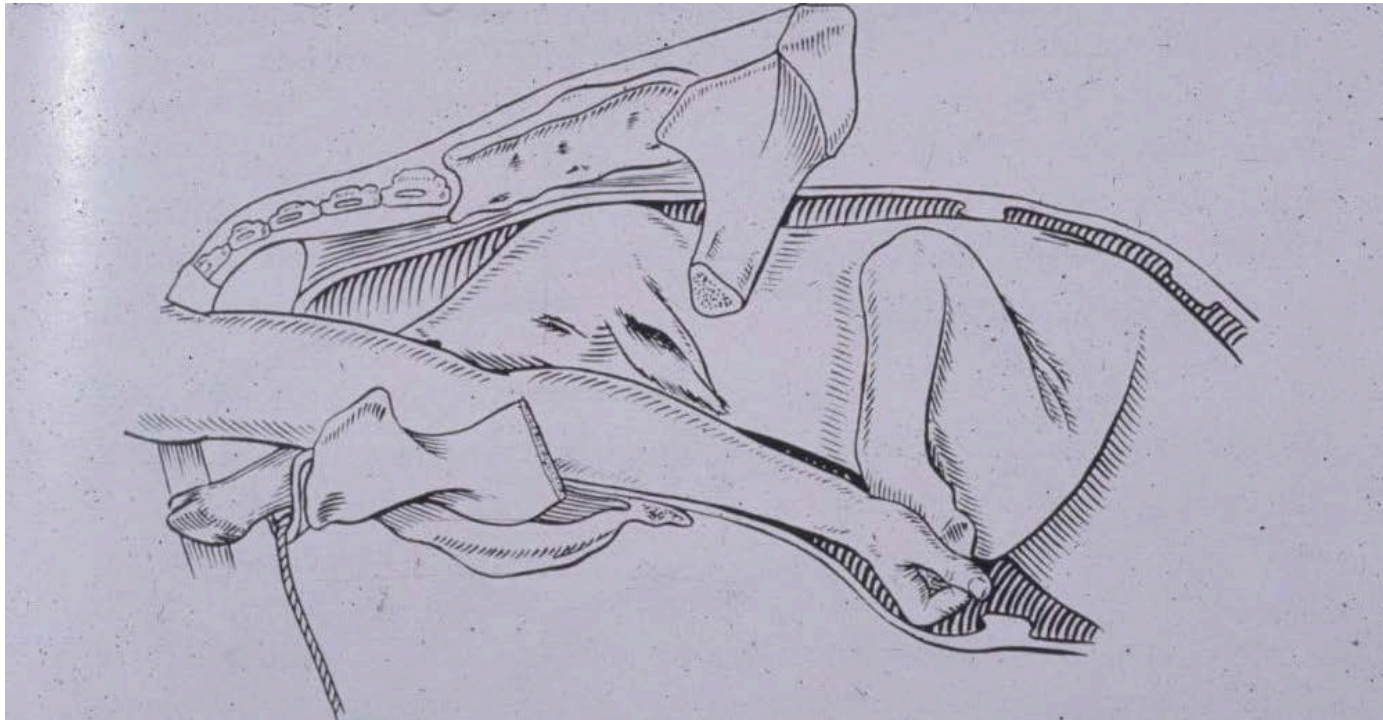
- Good history
 - Length of gestation
 - When were the first signs of labor?
 - Previous manipulations by the owner
 - Breed of the bull
- Place dam in desired location (that is safe for handler and cow)
 - Correct the dystocia with the cow standing
 - Deliver the calf with the cow in lateral

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

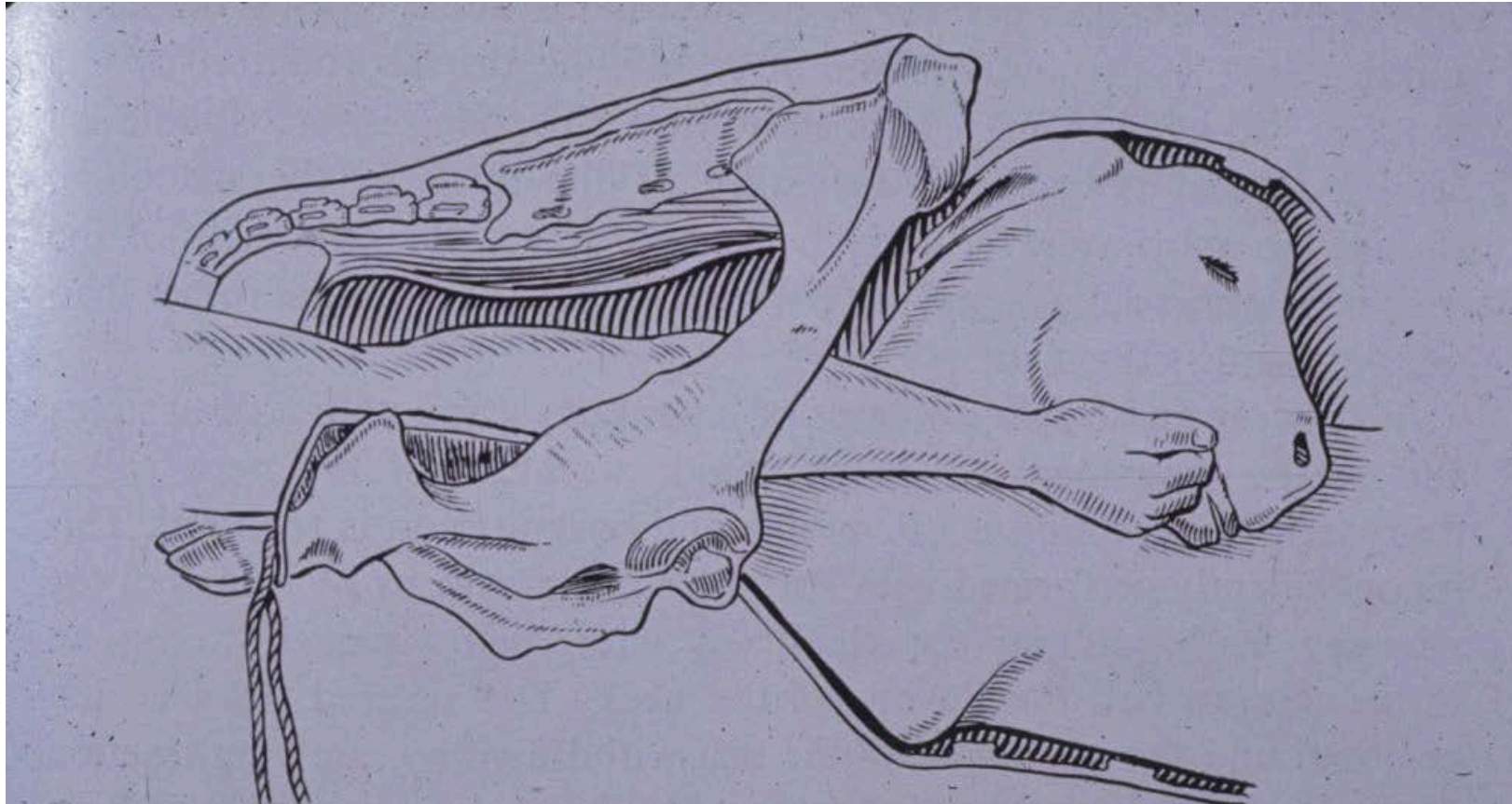
Common Causes of Bovine Dystocia

- Postural defects in anterior presentation
carpal flexion – grasp foot and pull upward and outward

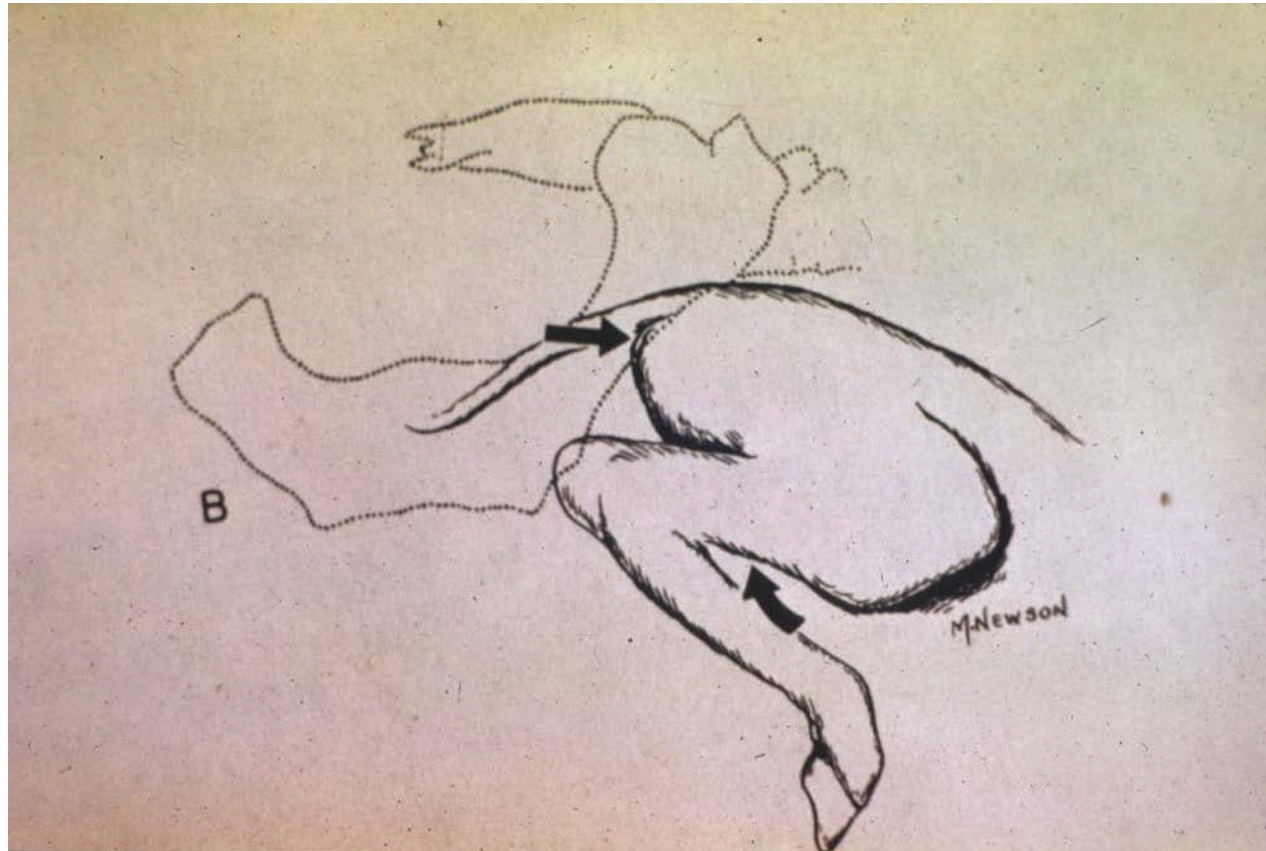


Common Causes of Bovine Dystocia

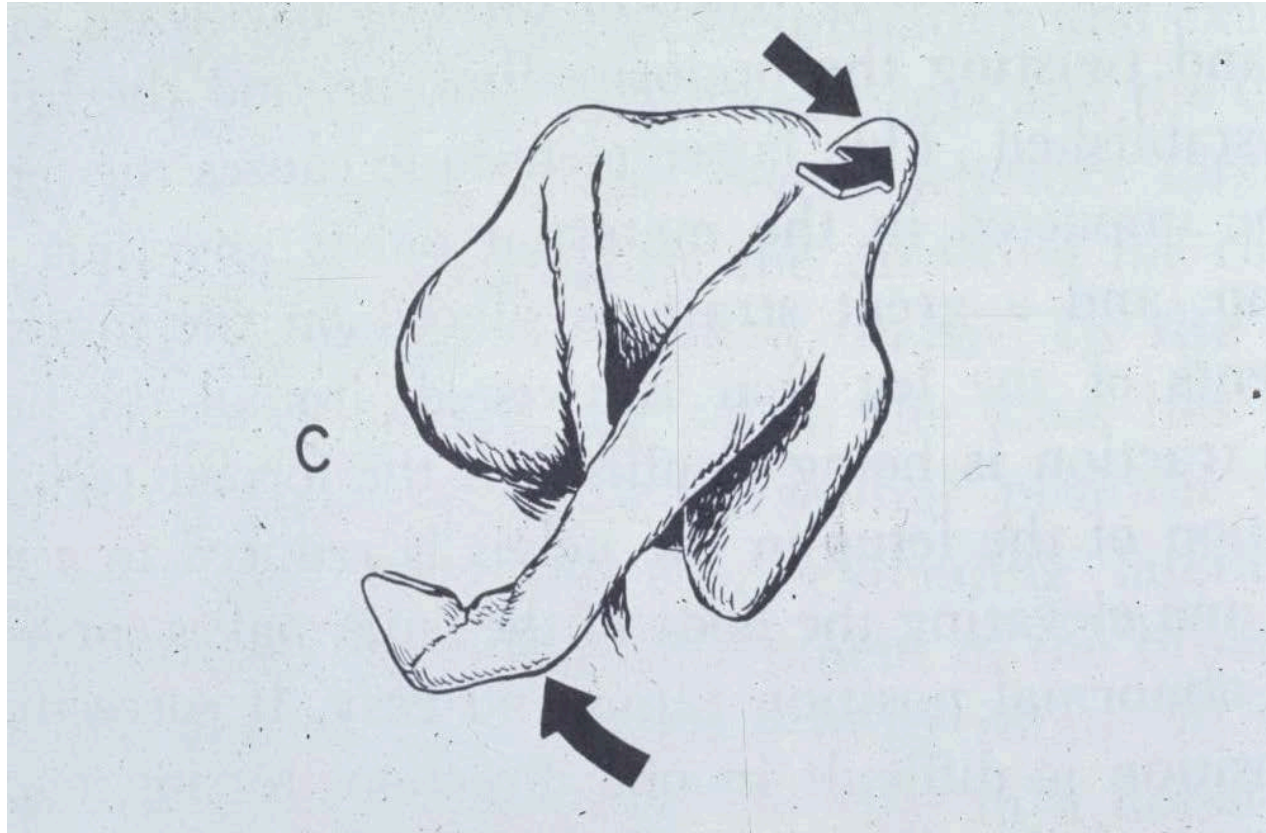
- Postural defects in anterior presentation
Lateral deviation of the head and neck



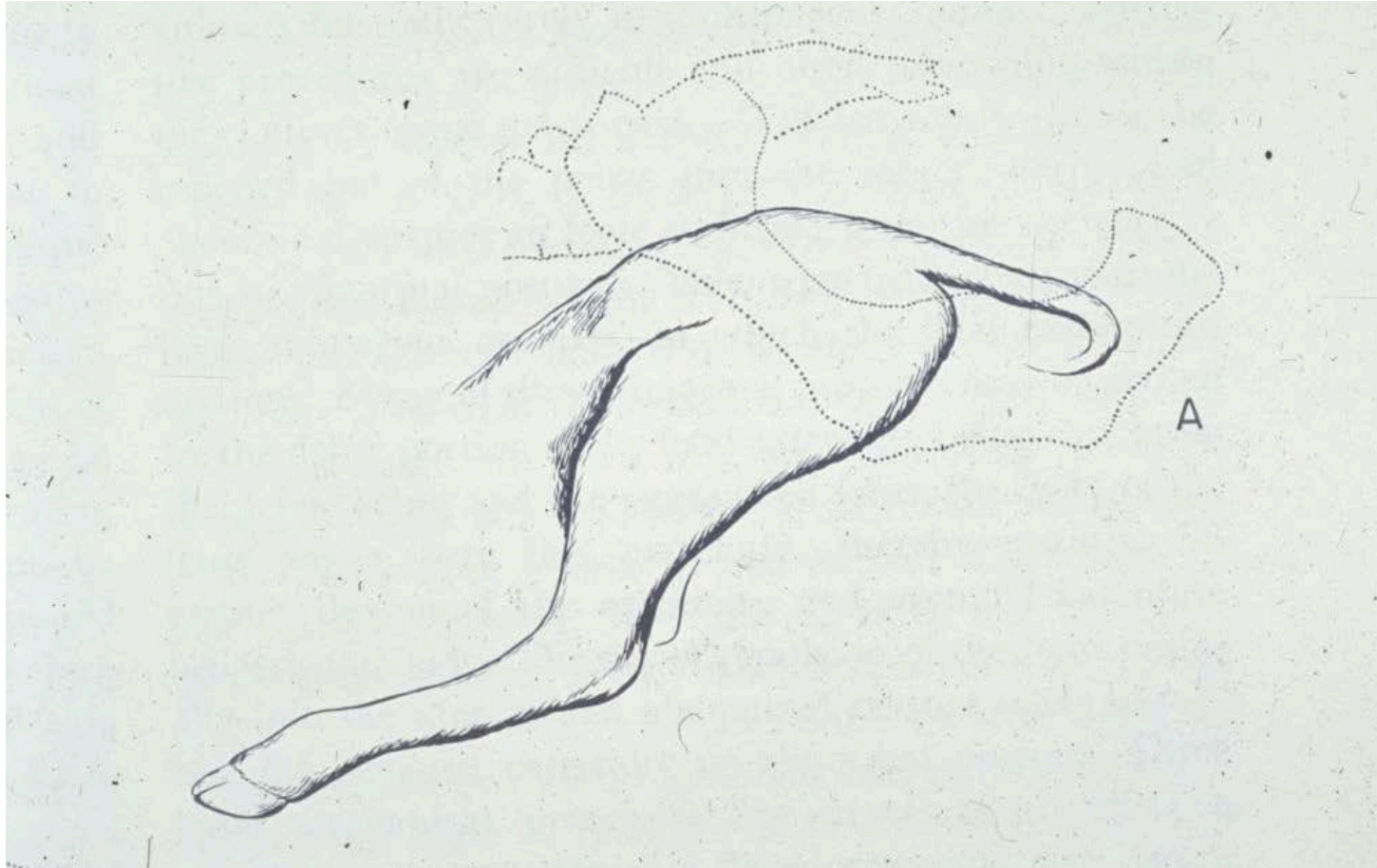
- Postural defects in posterior presentation
Hock flexion – uni- or bilateral



- 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 Extr

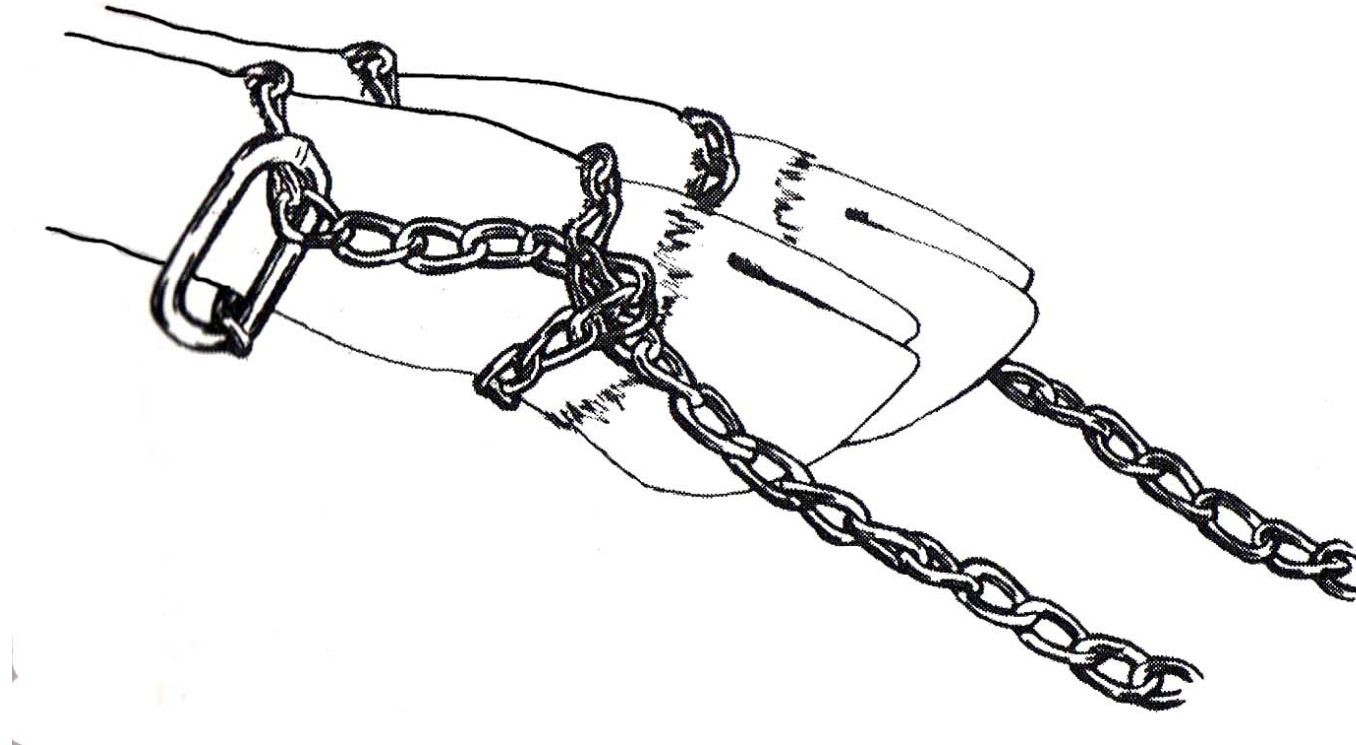
Defined as the v
birth canal by m
h through the
plication

Never use more
tractors, pulleys
o winches,



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 → globes move or eyelids flutter
 - Last reflex lost
- Insert finger into mouth → suckling response
 - First response lost
- Insert finger into anus → anus contracts
- Pinch skin → withdrawal reflex
- Flex a limb maximally → 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, Vettricyn® 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