Dystocia and Obstetrics
Causes of Dystocia

- Size and age of female
- Pelvic area
Sire Effect and Fetal size
Nutrition
Some Maternal Factors Influencing Dystocia
Other Causes of Dystocia

- Twins
- Confinement
- Infections
- Length of Gestation
Fetal Causes of Dystocia
Fetal Presentation

Cranial (anterior) longitudinal

Caudal (posterior) longitudinal
Fetal Presentation

Transverse ventral  Transverse dorsal
Fetal Presentation

~Vertical ventral
(‘dog sitting’)

Vertical dorsal
Fetal Position

Dorso-sacral

Left dorso-ilial

Dorso-pubic
Fetal Posture – Head Deviations
Fetal Posture – Limb Deviations

Breech presentation
Normal Situation
Common causes of Dystocia

- Mares
- Cows
- Small Ruminants
- Sows
- Bitches
- Queens
Management of Dystocia

- Emergencies
- Feeding management in cattle will produce more daytime calvings
- Careful monitoring to prevent prolonged dystocia
  - Can be done in shifts
Monitoring
Monitoring - Horses

Foalert System

Milk calcium tests
Monitoring - Dogs

WhelpWise System
Guidelines for Intervention

- History
  - Helps one prepare adequately
Guidelines for Intervention

- Mares
  - Second-stage labour is very rapid e.g., ~20 minutes
  - Premature placental separation occasionally increases the urgency to get the foal out
Guidelines for Intervention

- Ruminants
  - Second-stage labour can last up to an hour for single bovine calves
  - Sheep and goats may take up to 2 hours if there are twins or triplets and primipara may take longer
Gudelines for Intervention

- Sows, bitches and queens
  - >2-4 hours of second-stage labour without delivering a fetus
  - >1-2 hours between fetuses
    - May take 2-3 hours between the 1st and 2nd puppy or kitten
  - A green-black discharge indicates placental separation in dogs
  - Can get interruption of parturition in cats
Additional Criteria to Intervene in Whelping

- **No puppies**
  - >67 days from the LH surge
  - >60 days after cytological diestrus
  - >72 days from the last breeding

- Whelping should begin within ~24 hours a drop in rectal temperature to <37.5°C

- Stillborn puppies

- Decreased fetal heart rates
Other Indications to Intervene

- Prolonged first-stage labour
- Prolonged periods of non-productive straining
- Prolonged decrease in the intensity of abdominal contractions during second-stage labour
- Maternal distress, exhaustion or weak straining
- Signs of shock or systemic illness
- Abnormal discharge from the vagina
- Bloody or meconium-stained discharge from the vagina without evidence of labour
- A cause of dystocia is apparent
General Examination

- Physical condition of the dam
- Degree of abdominal distension
- Character of vaginal discharge
- Character and amount of fetal membranes showing
- Fetal parts showing
Facilities – Large Animals

- Animals caught and restrained
- Good lighting
- Protection from the weather
- Warm water
- Clean area to work in
Restraint - Mares
Restraint - Mares
Restraint - Mares
Restraint - Cows
Restraint

- Small ruminants
- Sows
- Bitches and queens
Chemical Restraint

- Anesthesia
- Sedation
- Epidural anesthesia
- Clenbuterol

Illegal to use in food animals
Protective Clothing – Large Animal Cases

Clothing as stylish and yet more practical than this is suggested
Hygiene
Lubrication

J-Lube can produce peritonitis if it gets in the abdomen
Pump Lubrication in as Needed
Obstetrical Examination
Assessment of Fetal Viability

- Fetal responsiveness
- Ultrasonography
  - Real-time B-mode
  - Doppler
- Placenta
- Odor
- Radiography
Size and Situation of the Fetus
Prognosis

- Depends on the:
  - Condition of the dam
  - Length of dystocia
  - Condition of the reproductive tract

- Guidelines:
  - Mares
  - Ruminants
  - Sows
  - Bitches
Obstetrical Equipment – Large Animals

Crutch repeller; safer to use hand and arm
For the Legs – Chains, Straps, Ropes and Handles
For the Head – Snares, Chains, Ropes, or Eye Hooks (?)
Other Grasping Devices

Farrowing Instrument

KNOWLE’S FORCEPS
Fetal Extractors

Frank’s fetal extractor
Application - Cornell Detorsion Rod
Application – Cammerer’s Torsion Fork
Chisel for Splitting the Pelvis of Heifers
Fetatomes

Not Acceptable

Use only if there is no alternative

A poor model

Satisfactory but cumbersome
Utrecht Model Fetatome - Recommended
Fetatome - Handles
Fetatome Accessories

Wire introducers/guides  Krey’s hook and fetotomy knife
Obstetrical Equipment – Small Animals (Not often used)

Hobday’s whelping forceps

Robert’s snare

Hobday’s vectis
Obstetrical Procedures - Mutation

Repulsion
Rotation
Version
Correction of Retained Front Legs
Correction of Retained Hind Legs, e.g., Breech Presentation
Correction of Retained Hind Legs, e.g., Breech Presentation
Correction of Abnormal Head and Neck Postures
Forced Extraction - Cranial Presentation
Forced Extraction – Caudal Presentation
Avoiding Hiplock

FETAL EXTRACTION IN ANTERIOR PRESENTATION

Calf rotated about 90° to position its hips to come through the widest diameter of the maternal pelvic inlet.
Amount of Traction to Apply

No!  OK
Guidelines for Forced Extraction
Splitting the Pelvis
Splitting the Pelvis, Cont’d
Fetotomy

- Reduces the size of the fetus by dividing it or removing some of its parts
  - Most useful on a dead or deformed fetus when mutation fails (usually requires a partial fetotomy)
  - Also used when a dead or deformed fetus is too large for the birth canal (sometimes requires a complete fetotomy)

- The birth canal and uterus must be in satisfactory condition

- Epidural anesthetic required for cows
- Sedation +/- epidural or anesthetic may be required for the mare
Fetotomy Techniques
Fetotomy
Fetotomy – Cranial Presentation
Fetotomy – Cranial Presentation
Fetotomy – Cranial Presentation
Fetotomy – Cranial Presentation
Fetotomy – Caudal Presentation
Fetotomy – Caudal Presentation
Lateral Deviation of the Head and Neck

Occasionally necessary to amputate the forelimb to reach the neck
Shoulder Flexion
Hip Flexion

Figure 32
Hip flexion posture (true breath).
Pseudoneurotisation of the rear limb. Note:
An incision is not required for exiting the saw wire.
Transverse Ventral Presentation
Dog-sitting or Transverse Ventral
Schistosomas Reflexus
Schistosomes Reflexus
Perosomus Elumbis
Fetal Anasarca or Ascites
Hydrocephalus or Hydranencephaly
Other Fetal Anomalies
Caesarean Section
Elective Caesareans in Dogs
Special Situations - Hiplock
Stifle Lock
Twins
Uterine Torsion

Figure 93a. Diagram of a normal and twisted bovine uterus and vagina. (Upper center) Normal position of broad ligaments and vagina. (Lower left) 180° right torsion of the uterus. (Lower right) 180° left torsion of the uterus.
Uterine Torsion
Uterine Torsion

Figure 93a. Diagram of a normal and twisted bovine uterus and vagina. (Upper center) Normal position of broad ligaments and vagina. (Lower left) 180° right torsion of the uterus. (Lower right) 180° left torsion of the uterus.

Figure 93b. The Schaffer method for the correction of right uterine torsion. A. The cow is cast on the right side corresponding to the direction of the 180° right uterine torsion, note the position of the right mesometrium. A plank and weight of 75 to 100 kg (black arrows) are applied over the abdomen. B. The cow is rolled slowly to the right in the direction of the uterine torsion. C. Rolling is completed, with the correction of the uterine torsion. Courtesy of the Cornell Veterinarian.
Uterine Torsion
Other Conditions

- Uterine torsion
  - Ewes and does
  - Sows
  - Bitches and queens
- Insufficient cervical dilation
- Vaginal obstruction or prolapse
Uterine Inertia

- Primary
  - Includes canine single-fetus pregnancies
- Secondary
- Treatment:
Emphysematous Fetus
Questions?