Parturition related disorders in sheep and goat

G.N. PUROHIT

Department of Animal Reproduction Gynaecology and Obstetrics
College of Veterinary and Animal Science, Bikaner Rajasthan
Parturition – Successful culmination of pregnancy

- **1st stage of labor** lasts for 6 - 12 hr both in sheep and goat. The animal is restless and paws the ground.

- **2nd stage of labor** lasts for 0.5 – 1 hr. The fetus is delivered in this stage in anterior longitudinal presentation sometimes in posterior presentation.

- **3rd stage of labor** lasts for 3-4 hr after the delivery of last lamb. The placenta is expelled and the uterus starts involution. Vocalization shown by goat. The birth canal of goat more fragile.
Stages of labor

1st Stage

2nd stage
Disorders of Parturition -

- During Pregnancy (Pre-Partum)
- At Parturition (Parturient)
- After Parturition (Post-Partum)
Pre-Partum Disorders
During pregnancy the fetus grows in utero deriving nutrition from its mother and constantly changing its position and excreting end products into maternal circulation. The feto-maternal interactions when obstructed or altered result into disorders.
Commonly encountered disorders

- Abortion
- Pregnancy Toxaemia
- Vaginal prolapse
- Hydrometra
- Hydro-allantois
Abortion - Delivery of fetus before full term which is incapable of independent life

Incidence: 3 - 11%
Causes of Abortion are multifarious

- **Genetic disorders:** Abortion is an inherited disorder in older Angora goats.

- **Nutritional factors:** Deficiency of energy, protein, iodine, copper, selenium etc..

- **Toxic plants and pharmaceuticals:** Ex. copper, dexamethasone injections etc.

- **Stress or trauma:** predator attacks, heat stress.

- **Infectious:** Ex. Brucella ovis, akabane virus
Specimens to be submitted to diagnostic laboratory

Fetus and placenta – chilled and in a clean container
Fresh chilled fetal heart blood, serum or thoracic fluid - 5mL
Frozen fetal abomasal contents
Blood samples from minimum 10% of aborting animals

Management of aborting flock

- Remove pregnant ewes/goats from aborting animals to a clean area.
- Initiate specific control measures on the basis of agents suspected
- Send animals that have aborted and proposed for culling directly to slaughter only after discharge from reproductive tract have ceased.
Hydrometra (Pseudopregnancy) or cloud out-burst

- Seen in goats
- Incidence: 3-14%
- Etiology: High prolactin levels
  Persistence of CL subsequent to fetal death and reabsorption commonly accepted cause

Diagnosis: Clinical cases discharge of large quantity of fluid without fetal delivery
Cases referred for PD diagnosis by ultrasonography
Ultrasonography reveals anechoic fluid, strands without fetal cotyledons or fetus/es
In a study hydrometra was diagnosed in 21 does and out of these it was diagnosed in 5 does by ultrasonography while in 16 does it was diagnosed in goats presented for examination with history of discharge without fetal delivery (Purohit, 2006)

**Therapy:**
Prostaglandin injections

*Inj. Lutalyse 1.5 – 2.0 mL IM*
*Inj. Prostodin 125 µg IM*

Anti-prolactins

*Bromocryptine 1 mg SC twice daily for 6-10 days*
Hydroallantois: Accumulation of excessive fluid in allantois, seen both in sheep and goat

- **Etiology:**
  - Legumes with high estrogens
  - Hypothyroidism
  - Placental or uterine disease

- **Clinical signs:**
  - Sudden excessive abdominal enlargement
  - Difficulty in respiration

- **Diagnosis:** Clinical signs, ultrasonography

- **Therapy:**
  - Pregnancy termination with prostaglandins, caesarean section

- **Prognosis:** Poor extreme care necessary in therapy.
Pregnancy Toxaemia/Hypocalcaemia

- Preg. Toxaemia affects both sheep and goats
- Occurs at final month of gestation
- Deficiency of glucose in multiple fetus bearing females the most common cause
- Often associated with hypocalcaemia
Clinical signs
Depression, recumbency, tremors, circling, grinding of teeth, etc.

**Diagnosis:**
- Ketone bodies in urine
- Low blood glucose/ calcium

**Therapy:**
Difficult pregnancy termination must be considered
- 20-80 mL of 25% glucose
- 0.5-2 mL of Insulin inj.
- 5-20 mL of calcium borogluconate
Rupture of the prepubic tendon/ventral Hernia

- Occurs in animals with multiple fetuses
- Pregnant females with abdominal trauma

THERAPY

- Application of canvas girdle
- Reduction in salt and trace minerals in feed
PARTURIENT DISORDERS

- Dystocia
- Prolonged gestation
- Fetal mummies
<table>
<thead>
<tr>
<th>Factor</th>
<th>Incidence</th>
<th>Reference</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Common in 2 years old ewes</td>
<td></td>
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<tr>
<td><strong>Sex of fetus</strong></td>
<td>More in ewes with male fetuses</td>
<td>Majeed and Taha (1989b) Majeed et al. (1993)</td>
</tr>
<tr>
<td><strong>Parity</strong></td>
<td>More in first and second parity</td>
<td>Echternkamp and Gregory (1999)</td>
</tr>
<tr>
<td><strong>Season of lambing</strong></td>
<td>Common in spring and winter lambings</td>
<td>George (1975), George (1976) Cecilia et al. (1996)</td>
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<tr>
<td></td>
<td>Higher in Cheviot ewes</td>
<td></td>
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<tr>
<td><strong>Length of Gestation</strong></td>
<td>Higher in prolonged gestation</td>
<td>Dennis (1974)</td>
</tr>
<tr>
<td><strong>Health of ewes</strong></td>
<td>Higher in weak ewes</td>
<td>George (1975)</td>
</tr>
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Causes of dystocia – Maternal and fetal:

<table>
<thead>
<tr>
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<tbody>
<tr>
<td>Fetal maldisposition</td>
<td>50%</td>
<td>48%</td>
</tr>
<tr>
<td>Fetopelvic disproportion</td>
<td>5%</td>
<td>15%</td>
</tr>
<tr>
<td>Fetal dropsical conditions/ monsters</td>
<td>3%</td>
<td>6%</td>
</tr>
<tr>
<td>Obstruction of the birth canal</td>
<td>35%</td>
<td>21%</td>
</tr>
<tr>
<td>Uterine inertia</td>
<td>-</td>
<td>7%</td>
</tr>
<tr>
<td>Others (Uterine torsion, uterine rupture etc..)</td>
<td>7%</td>
<td>3%</td>
</tr>
</tbody>
</table>
Common conditions causing dystocia

- **Ring womb**
  - Cervical dilation failure:
  - Etiology: multiferous
  - Suggested therapies:
    - Isoxsuprine Hcl
    - Caesarean in non-responding cases

- **Uterine inertia**
  - Etiology: Calcium deficiency, Fear, Young age
  - Therapy:
    - Oxytocin injections
    - Calcium dextrose
    - Caesarean
## Fetal maldisposition

<table>
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<tbody>
<tr>
<td>Lateral deviation of head/neck</td>
<td>41%</td>
<td>44%</td>
</tr>
<tr>
<td>Shoulder flexion</td>
<td>6%</td>
<td>22%</td>
</tr>
<tr>
<td>Carpal flexion</td>
<td>10%</td>
<td>14%</td>
</tr>
<tr>
<td>Breech</td>
<td>8%</td>
<td>10%</td>
</tr>
<tr>
<td>Hock flexion</td>
<td>4%</td>
<td>06%</td>
</tr>
<tr>
<td>Others</td>
<td>31%</td>
<td>4%</td>
</tr>
</tbody>
</table>
Fetopelvic disproportion

- Fetal oversize
- Fetal monsters
- Fetal emphysema
Examination of animals for dystocia must not begin before 30 min after beginning of contractions. Cleanliness, gentleness and lubrication in examination and handling of dystocia are of utmost importance.

- Handling of dystocia → Manual correction
  Due care necessary in vaginal manipulation especially in the goat to avoid rupture.
Fetotomy Only partial fetotomy of one limb or head possible.

Caesarean section

Sites
- Midline
- Flank
- Paramedian
- Oblique ventrolateral

Anesthesia Local infiltration with sedation
Subsequent to delivery the uterus must be examined to explore any remaining fetus. Abdominal ballotment may be confusing because of presence of ruminal foreign bodies/bezoars.

- **Prolonged Gestation**

  Difficult to detect in animals without breeding records

  **Cause**

  - defects in hypothalamopituitary axis
  - Consumption of plant toxins
  - Viral diseases

  **Therapy**

  - pregnancy termination using PG + dexa methasone

  **Result**

  Extra large fetuses
Fetal mummies delivered with normal fetus or recognised on vaginal or sonographic examination.
Therapy PG + dexamethasone or caesarean section.
Post-parturient disorders

- Retained placenta
- Metritis
- Uterine prolapse
- Uterine rupture
Retained Placenta

- Known to occur both in sheep and goats
- More prevalent in young goats

**ETIOLOGY**
- Vitamin A deficiency
- Obesity, hypocalcaemia
- Infectious disease

**THERAPY**
- Manual removal
- Prostaglandin Injections
- Oxytocin
- Uterine echbolics
Post Parturient metritis

- Uncommon in sheep common in goats
- **Cause:** Poor hygiene at kidding/lambing
- **Therapy:** Intrauterine/Parenteral antibiotics, Prostaglandin injections

Post parturient disorders (Purohit et al., 2006)

<table>
<thead>
<tr>
<th>Condition</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>Retained placenta</td>
<td>51.5%</td>
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<tr>
<td>Post-parturient metritis</td>
<td>38.3%</td>
</tr>
<tr>
<td>Vaginal prolapse</td>
<td>4.4%</td>
</tr>
<tr>
<td>Uterine prolapse</td>
<td>2.9%</td>
</tr>
<tr>
<td>Uterine rupture</td>
<td>2.9%</td>
</tr>
</tbody>
</table>
Vaginal and Uterine prolapses
Cause
Lack of exercise
High estrogenic feeds
Hereditary

- Prepartum vaginal prolapse common in sheep and a commercial accessory is available for therapy
- Post partum- replacement calcium therapy
Uterine ruptures

- Common subsequent to dystocia handling by breeders using undue force on a maldisposed fetus. Rarely spontaneous rupture is possible.
- Referred to vet when Intestinal loops prolapse out
- Emergency laparotomy suggested
- Sometimes repair not possible
- Potent antibiotic therapy is suggested
- Prognosis is poor to fair
Pre and Post parturient care

- Ultrasonography is a good preparturient diagnostic tool. Regular scanning is useful. Scanning at 3-4 months appears important, it can give clues to conditions like twin fetuses, fetal mummification, pseudopregnancy. Evaluation of fetal viability can lead to decision on the manner of dystocia handling.

- Deworming and vaccinations are suggested 1 month before lambing.

- Supplementary feeding with mineral vitamins can avoid subsequent retained placenta etc.

- Close monitoring and timely help can prevent dystocia.

- Post partum hygiene is important in prevention of many problems.
THANK YOU