



Unit : Rumen and omasal impaction and dysfunction in cattle

Lesson : 4

# Ruminal tympany

**Dr.E.Venkatesakumar, Ph.D.,**

Assistant Professor and Head,  
Department of Veterinary Clinical Medicine,  
Veterinary College and Research Institute,  
Namakkal-637002. Tamil Nadu, India.

# Introduction

- **Abnormal distension of rumen & reticulum caused by excessive retention of gases of fermentation either in the form of persistent foam mixed with ruminal contents or as free gas separated from ingesta**
- **Gas bubbles – coalesce together form gas pocket – eructation**

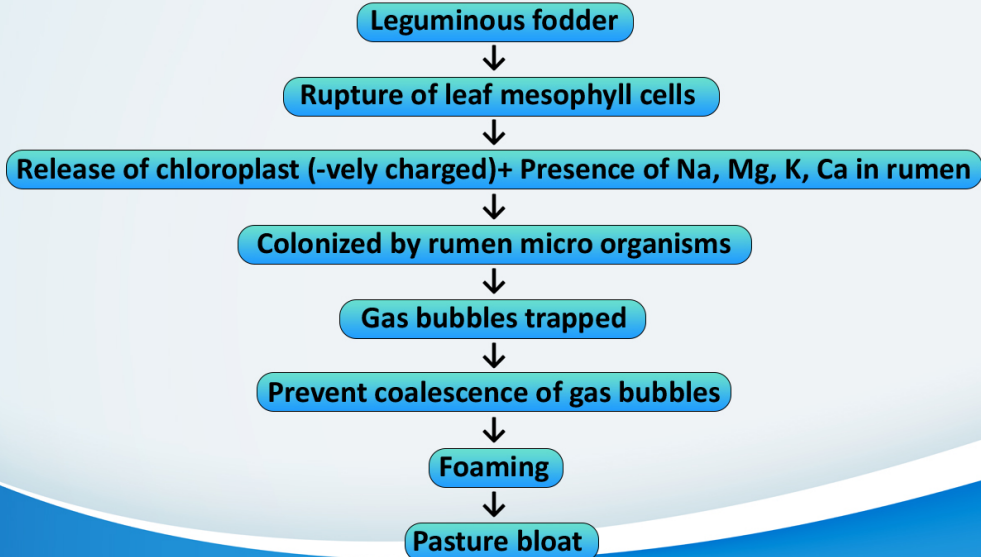
# Types of bloat

- **Primary ruminal tympany (Frothy bloat) – dietary origin**
  - Pasture bloat – leguminous fodder*
  - Feedlot bloat*
- **Secondary ruminal tympany (Free gas bloat) – eructation failure**

## Other conditions associated with bloat

- **Vagus indigestion – hypermotility lead free gas bloat to frothy bloat**
- **Diaphragmatic hernia – recurrent frothy bloat**
- **Unusual postures**
  - Sternal/Lateral recumbency
  - Crowded transportation
- **Chronic ruminal tympany – occur in calves upto 6 months of age**
  - Persistence of enlarged thymus
  - Continued feeding of coarse indigestible roughage & milk replacers (fermentation)

# Pathogenesis – Frothy bloat



# Pathogenesis – Feedlot bloat

Finely ground grain feeding (particle size < 388  $\mu\text{m}$ )



Increased encapsulated bacteria



Slime



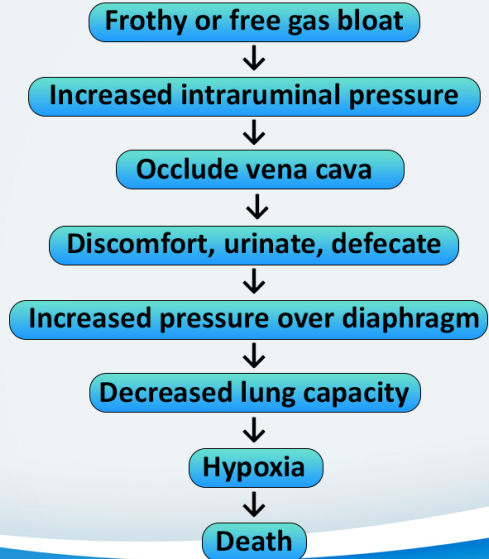
Stable foam



Feedlot bloat

# Secondary ruminal tympany

- **Physical obstruction to eructation**
  - By FB, stenosis of oesophagus
  - By pressure outside of oesophagus – Tuberculus lymphangitis, BVL
  - By obstruction of cardia
- **Tetanus, listeriosis, botulism**
- **Carcinoma**
- **Granulomatous lesion** – *Actinomyces bovis*
- **Papillomatous lesions of oesophageal groove & reticular wall**
- **Amphistomiasis in cardia**
- **Lesions in vagus nerve** – *pharyngeal injuries*
- **Indigestion with tympany**
- **Acute localized peritonitis with resultant ileus**
- **Anaphylaxis**
- **Hypocalcemia**
- **Atony of rumen by oesophagitis, acidosis, rumenitis**





# Clinical findings

- Sudden death/found dead
- Distention of LPF & abdomen
- Discomfort
  - frequent lying down & getting up
  - Kick at belly
  - Roll
- Frequent urination & defecation
- Dyspnoea
- Increased respiratory rate
- Occasional projectile vomiting
- Soft feces
- Hypermotility of rumen initially, atony subsequently
- Tympanic on percussion
- Drop in milk production
- Systolic murmur



# Distended abdomen with bloat



# Diagnosis

**By passing stomach tube**  
**–differentiation of free gas &**  
**frothy bloat**



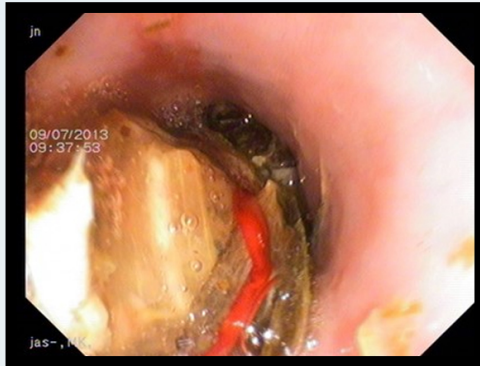
# Differential diagnosis

- **Vagus indigestion-** Intermittent bloat, loss of weight, scant feces
- **Infectious diseases –** Tetanus, Listeriosis, Botulism
- **Diaphragmatic hernia**
- **Sudden death**
  - **Black leg**
  - **Lightning stroke**
  - **Anthrax**
  - **Snake bite**
- **Postmortem findings**
  - **Carcinoma**
  - **Pillomata**
  - **Actinobacillosis**
- **Swellers**

# Treatment

- Rumenotomy
- Passage of stomach tube
- Trocharization
- Bit like structure
- Drenching of  $\text{NaHCO}_3$  (150-200g in 1lit of water)
- Mineral oil – 250 ml for cattle; 50 ml for sheep
- Emulsified oil with detergent like dioctyl sodium sulfo succinate
- Synthetic surfactants – poloxalene 25-50g
- Silicone dimethicone – Bloatosil or Bloatonil etc.,
- Alcohol ethoxylate

# Choke – Esophagoscopy – coconut kernel



# Control

## • Pasture bloat

- Oils & fats-60-120ml bid po
- Spraying of oil & fat on pasture
- Synthetic non-ionic surfactants – poloxalene 10-20g; pluronic L 64;
- alcohol ethoxylate detergents (teric) 17-19g
- Sustained release techniques – monensin 300g/head as capsule

## • Feedlot bloat

- 10-15% roughages in ration
- Grains rolled or cracked
- Avoid pellet feeding
- Non toxic dimethyl dialkyl quaternary ammonium compound
- Addition of 4% salt in ration
- Avoid overfeeding after starvation
- water supply in all times

# Control

- **General**

- **Strip gazing**
- **Legume + grass**
- **Condensed tannins in forages -**
- **Wilting swathed alfalfa for 24 hours**
- **Antifoaming agents - applied with a large paint brush to the flanks of cows**





*Thank  
you*