



Unit : Rumen and omasal impaction and dysfunction in cattle
Lesson : 1

Introduction Rumen and omasal impaction and dysfunction in cattle

Dr.E.Venkatesakumar, Ph.D.,

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

Lesson I Introduction

List of disorders in rumen and omasal impaction and dysfunction in cattle

Simple indigestion

Ruminal Impaction

Lesson II Ruminal lactic acidosis

Lesson III SARA, Ruminal drinkers & Ruminal alkalosis

Lesson IV Ruminal tympany

Lesson V Vagus indigestion & Omasal impaction

Introduction

- Rumen – microbial digestion & production of VFA
- Dysfunction leads to major economical loss

List of rumen and omasal impaction and dysfunction in cattle

- Simple indigestion
- Ruminal impaction
- Acute carbohydrate engorgement
- Subacute ruminal acidosis
- Ruminal drinkers
- Ruminal alkalosis
- Ruminal tympany
- Vagus indigestion
- Impaction of omasum

Simple indigestion

- Common sequelae of abrupt change in ration
- Rumen is most commonly affected
- Occurs at any stage of lactation and mostly first week following parturition

Etiopathogenesis



Clinical signs

- Dull & depressed
- Suspended rumination
- Decreased appetite
- Suspended rumination
- Ruminal atony – due to reduced feed in take
- Rumen enlargement – moderate tympany / firm or doughy rumen
- Milk yield -due to decreased VFA
- Temperature, respiratory and heart rates - normal

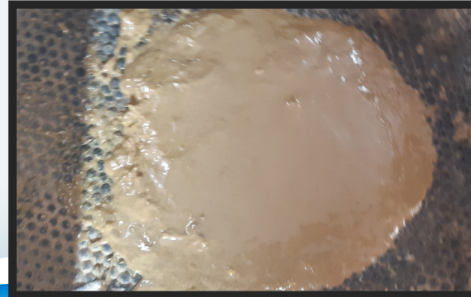


Dung



- Initially - decreased quantity and drier

- 24 to 48 hours after diarrhoea (voluminous & malodorous)



Rumen fluid collection & Examination



- Rumen fluid collection

- Altered ruminal pH
(Normal ruminal pH 6.2 to 7.2)



Rumen fluid – Protozoal activity

Decreased rumen protozoal
count & motility

Normal protozoal motility

Diagnosis

- History
- Clinical signs
- Laboratory findings

Differential diagnosis

S.No.	Name	Signs
1.	Acetonemia	Gradual reduction in milk yield Ketonuria Weak ruminal contractions
2.	Traumatic reticuloperitonitis	Sudden anorexia & agalactia Painful grunt on deep palpation over xiphoid Rumen stasis with gas gap
3.	Carbohydrate engorgement	Abdominal distension, ruminal stasis, fluid splashing sound, dehydration, staggering gait
4.	Left displacement of abomasum	Ping sound over Left lower flank, Liptak test – positive, few days after parturition
5.	Right displacement of abomasum	Ping sound over right flank, Liptak test – positive, 2 to 4 weeks postpartum, rectal examination – distended viscus palpable
6.	Vagal indigestion	Gradual distension of abdomen – papple shaped abdomen, scanty feces, dehydration, initial hypermotility of rumen, froathy bloat, ruminal atony
7.	Phytobezoar	Distended loops of intestine
8.	Septicaemia /toxaemia	Secondary ruminal tympany
9.	Allergic and anaphylactic states	Atony of rumen
10.	Hypocalcaemia	Ruminal atony with mild bloat

Treatment

- Improve appetite
- Stomachic
- Probiotics
- Ruminatorics – tartar emetic, nuxvomica, ginger (Prokinetic in rumen)
- Ginger extract – 40 mg/kg bwt
- Parasympathomimetics
- Carbomylcholine chloride – acts on musculature
- Physostigmine
- Neostigmine – (0.02 – 0.04 mg /kg sc)
- Metoclopramide - increase ruminal contraction & useful in vagal nerve damage (0.3 mg/kg im)
- Laxatives 0.5 to 1.0 kg Epsom salt

Treatment

- **Improve appetite**
 - Stomachic
 - Probiotics
 - Ruminatorics – tartar emetic, nuxvomica, ginger (Prokinetic in rumen)
 - Ginger extract – 40 mg/kg bwt
- **Parasympathomimetics**
 - Carbonylcholine chloride – acts on musculature
 - Physostigmine
 - Neostigmine – (0.02 – 0.04 mg /kg sc)
 - Metoclopramide - increase ruminal contraction & useful in vagal nerve damage (0.3 mg/kg im)
- **Laxatives 0.5 to 1.0 kg Epsom salt**

Treatment

- **Alkalinizing & Acidifying agents**

- Acidosis – alkalinizer – magnesium hydroxide 400 g /cow po
- Alkalosis – acetic acid or vinegar – 5 to 10 lit po

- **Transfaunation**

- Transferring a broad spectrum of micro-organisms including bacteria, protozoa, fungi and archaea from the rumen of a healthy donor animal to the rumen of a sick recipient animal
- 5 lit rumen fluid po for 3 days
- Commercial rumen dried solids

- **Provision of palatable hay**

- **Calcium borogluconate iv**

- **Gradual change of ration over 7 – 14 days**

Rumen impaction

- Mainly occurs with indigestible feed materials or foreign bodies

Etiopathogenesis

- Foreign body ingestion common in ruminants – lack of alimentary finesse
- Metallic – TRP
- Non-metallic – weight loss, decreased feed intake, electrolyte and acid-base imbalances
- Non metallic foreign bodies – Plastic bags, cloth, rope, leather, etc.,

Clinical signs

- Distended Left side abdomen
- Doughy consistency on palpation of rumen
- Emaciation
- Lack of feces in rectum,
- Abdomen distension and lack of symmetry
- Foamy salivation
- Recumbency
- Inappetence

Diagnosis

- History
- Clinical signs
- Ultrasound scan of rumen
 - 3.5 MHz transducer at 11 to 12th intercostal space after 1.5 to 2.0 lit of water
- Oesophageal and ruminal endoscopy

Endoscopy - Oesophagus



Endoscopy - Rumen



Treatment



- Medical management
- oral rehydration



- Surgical management
– rumenotomy



*Thank
you*