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

Introduction Rumen and omasal impaction and dysfunction in cattle

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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

- Excess Grain overload/concentrate
- Indigestible roughages, mouldy feeds
- Sudden change in feed
- Limited access to water
- Putrefaction of protein
- Unlimited access to ensilage
- Prolonged oral antibiotics
- Histamine release due to allergy & grain feeding
- Accumulation of feed

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

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Treatment

- **Alkalizing & 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
Treatment

- Medical management
  - oral rehydration

- Surgical management
  – rumenotomy