



Unit : Rumen and omasal impaction and dysfunction in cattle

Lesson : 5

Vagus indigestion & Omasal impaction

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

- Hoflund syndrome
- Chronic disease of fore stomach and abomasum
- Characterized by a dysfunction in the tenth pair of cranial nerves that leads to changes in forestomach motility
- **Two main types of vagal indigestion:**
 - Proximal functional stenosis between the reticulum and the omasum
 - Distal functional stenosis between the abomasum and the duodenum

Etiology

- **Complications of traumatic reticuloperitonitis – inflammation & scar**
 - Dorsal vagal nerve affection – achalasia of reticulo-omasal orifice (Anterior functional stenosis)
 - Ventral vagal nerve affection – achalasia of pyloric part of abomasum (Posterior functional stenosis)
- **Reticular adhesions**
 - Mechanical impairment of reticular motility
 - Oesophageal groove dysfunction
- **Other causes**
 - Actinobacillosis
 - Sheep – Cysticercus tenuicollis
 - Fibropapilloma of cardia
 - Abomasal impaction
 - Pyloric achalasia due to Septicaemia & toxæmia
 - Indigestion in late pregnancy

Pathogenesis – Anterior functional stenosis

Achalasia of reticulo omasal orifice



Failure of omasal transport



Paralysis of fore stomach & abomasal walls



Accumulation of ingesta in rumen & reticulum



“L” shaped rumen & hypermotility of rumen (3-6 /min)
with ineffective propulsion

Pathogenesis – Anterior functional stenosis

Decreased reticular motility



Achalasia and atony of rumen



Particulate separation affected



Affects the outflow of ingesta/Large particles (more than 0.5 cm) in feces



Bradycardia – increased vagal tone of injured nerve
leading to parasympathetic slowing of heart



No metabolic alkalosis & dehydration

Pathogenesis – Posterior functional stenosis

Achalasia of pylorus/Pyloric obstruction and abomasal impaction



Failure of pyloric outflow - pyloric stenosis



Abomasal fluid with Hydrochloric acid reflux into rumen
(abomasal reflux syndrome/internal vomiting)



Rumen – chloride increased (more than 30 mEq/L)



Dehydration – metabolic alkalosis, hypochloremia, hypokalemia

Clinical signs

- Inappetence to anorexia
- Scanty pasty feces
- Papple shaped abdomen – left apple & right pear
- Vital signs – normal
- Rumen distention with hypermotility
 - Rectal examination – L shaped rumen
 - Rumen content macerated & frothy
 - Bradycardia
- Rumen distension with atony
 - Seen in late pregnancy
 - Scanty feces
 - Atony of rumen
 - Persistent bloat
 - Fluid splashing sound
- Pyloric obstruction & abomasal impaction
 - Seen in late pregnancy
 - No abdominal distension

Papple shaped abdomen



Diagnosis

- **History**
- **Clinical signs**
- **Exploratory laparotomy & rumenotomy**
- **Atropine test**
 - **Atropine sulphate 40 mg (1%) subcutaneously**
 - **15 minutes later – minimum of 15.8 % increase in heart rate**

Differential diagnosis

- TRP
- Abomasal impaction
- Phytobezoar
- Foreign body
- Abomasal ulceration without melena
- Omasal impaction
- Late pregnancy

Treatment

- **Rumenotomy /rumen lavage
(rumen flushing with warm water)**
- **Fluid and electrolyte therapy**
- **Mineral oil 5 – 10 lit for 3 days**
- **Induction of parturition**
- **Slaughter for salvage in cases with unfavourable prognosis**

Impaction of Omasum

- **Spherical in shape with leaf like structures**
- **Location: right midline in the central third of the abdomen**
- **Main functions – absorption of VFA, electrolyte, water**
- **Omasum - not easily accessible for clinical examination by palpation, percussion and auscultation**
- **Impaction - Secondarily involved in any other diseases of the digestive tract & also associated with advanced pregnancy**

Clinical signs

- Anorexia
- Decreased ruminal movements
- Cessation of defecation
- Empty rectum
- Subacute abdominal pain
- Drop in milk yield
- Pain elicited – 7th to 9th intercostal spaces on right side

Diagnosis

- **Omasal impaction difficult to diagnose, mostly diagnosed at necropsy (enlarged, excessively hard and dry powdery contents).**

Treatment

- **During Rumenotomy**
 - **Passage of flexible tube through reticulo-omasal orifice & infusion of warm water to flush the omasum**
 - **Kneading through medial rumen wall to soften the content of omasum**
- **Repeated dosing of mineral oil 4 lit/day for 3 days**
- **Adequate water intake**



*Thank
you*