DIGESTIVE SYSTEM

Internal medicine; fourth stage

Part II

Alimentary tract hemorrhage

- Hemorrhage into stomach or intestine is common occurrence in farm animals. The main causes are:

1. Gastric or abomasal ulcers.
2. Severe hemorrhagic enteritis.
3. Structural lesions of intestinal wall.
4. Infestation with blood-sucking nematodes.
5. Local vascular engorgement or obstruction as in intussusception and verminous thrombosis.

- Hemorrhage into stomach results in formation of acid hematin which makes vomitus dark brown color like coffee grounds and feces have a black or very dark brown & tarry appearance (melena).
- Changes in appearance of feces that caused by hemorrhage into intestine are varies with level at which the hemorrhage occurs. If blood originates in small intestine, the feces may be brown-black, but if originates in colon or cecum, the blood is unchanged and give the feces an even red color. Hemorrhage into lower colon & rectum may cause voiding of feces containing or consisting entirely of clots of whole blood.

Alimentary tract pain

- Etiology
- Horses 1.Acute pain: All causes of intestinal obstruction, gastric dilatation and enteritis. 2.Subacute pain: Thromboembolic colic and impaction of large intestine.
- Cattle 1.Acute pain: Intestinal obstruction and poisoning. 2.Subacute pain: Traumatic reticuloperitonitis (TRP) and peritonitis

Tenesmus (persistent straining)

- It's a common state in many diseases of the pelvic cavity organs; therefore, it is not necessarily a diagnostic sign of disease in lower alimentary tract. It’s sometimes associated with frequent defecation caused by neurological stimulation of peristalsis.
- Causes of tenesmus: Cattle: 1. Lower alimentary tract disease. 2. Genital tract disease. 3. Estrogen toxicity in steers. 4. Lower spinal cord lesions. 5. Idiopathic. Horses: Tenesmus does not usually occur except during parturition. Cats & dogs: Lower alimentary tract disease, lower spinal cord lesion

Abdominal distention

- It's a state of distension of viscera with gas or fluid. The degree of abdominal distension depends on:

1. The viscera that are distended.
2. The species involved.
3. The age of the animal.

- The determination of the distension causes requires a careful examination of the abdomen by inspection, palpation, percussion, simultaneous auscultation and rectal palpation.

Special examinations of alimentary tract dysfunctions

1. Nasogastric Intubation.
2. Medical Imaging (Radiography).
3. Abdominal Ultrasonography.
4. Endoscopy (Gastroenteroscopy and Laparoscopy).
5. Exploratory Laparotomy.
6. Tests of Digestion & Absorption.
7. Abdominocentesis for Peritoneal Fluid.
8. Intestinal and Liver biopsy

Intubation of Rumen in Cattle

When the tube entered in rumen, some rumen juice can be siphoned out, collected and tested.

Intubation of Rumen in Cattle

- Color: depending on the feed to a limited extent will be green, olive-green or brown green. In cattle on pasture or being fed good quality hay, the color is dark green. When silage or straw is the diet, the color is yellow-brown. In grain overload, the color is milky-gray, and in rumen stasis of long duration with putrefaction, the color is greenish-black.
- Consistency: The consistency of rumen contents is normally slightly viscid and watery.
- Odor: The odor of rumen contents is normally aromatic, although somewhat pungent, and not objectionable to nose. The moldy, rotting odor usually indicates protein putrefaction, and an intensely sour (acidic) odor indicates an excess of lactic acid formation due to grain or carbohydrate engorgement.
- pH: The pH of rumen juice varies according to the type of feed and the time intervals between last feeding and taking a sample for pH examination. The normal range varies between (6.2-7.2) and the high pH values (8-10) will be observed when protein putrefaction that occurring in rumen or if the sample is mixed with saliva. Low pH values (4-5) are found after carbohydrates feeding

Specific Properties of Peritoneal Fluid

	Color	Suspected Causes
1	Crystal clear, Straw to Yellow	Normal Fluid
2	Turbid Straw to Yellow	Presence of Increased leukocytes and protein
3	Green	Food Material
4	Intense Orange - Green	Rupture of the Biliary System
5	Pink - Red	1. Presence of Hemoglobin, 2. degenerated Erythrocytes 3. Entire Erythrocytes 4. Damage to vascular system by infarction, perforation or hydrostatic pressure
6	Red Brown	1. Late Stages of Necrosis of the Gut wall, 2. The Presence of Degenerated Blood & Hemoglobin 3. Damage to Gut Wall with Hemorrhage
7	Whole blood , Clear fluid streaked with blood or heavily blood stained fluid	1. The Sample Collected from spleen or blood Vessel or That There is hemoperitoneum. 2. Rupture of the Uterus Or Bladder
8	Dark Green	1. The Sample Containing Motile Protozoa 2. With very few leukocytes & No mesothelial cells indicates the sample has been collected from the gut lumen

Principles of treatment of Alimentary tract diseases

1. Removing the primary cause of disease is essential.
2. Supportive and symptomatic treatment by:

1) Relieving pain: Non-narcotic and narcotic analgesics are in general use.
2) Relieving distension: By using :- a) Nasogastric intubation in horse and stomach tube trocarization of rumen in cattle. b) Laxatives and purgatives when there is accumulation of ingesta without a physical obstruction. c) Drugs such as metoclopramide to relief of atony or spasm. d) Surgical intervention is necessary when the distension is associated with a physical obstruction.

Principles of treatment of Alimentary tract diseases

3) Replacement of fluids and electrolytes
4) Correcting abnormal motility: a) Increased motility is treated by administration of atropine or other spasmolytics as Dipyrone, Proquamezine, Meperidine, Butorphanol, Pentazocine and Loperamide. b) Decreased motility is treated by administration of parasympathomimetic drugs as Metoclopramide, Cisapride or purgatives, usually combined with an analgesic (Xylazine, Naloxine Neostigmine)
5) Relieving tenesmus: It's difficult to treat effectively but the steps of treatment include: a) Long-acting epidural anesthesia and sedation. b) Combinations of xylazine and lidocaine. c) Irrigation of rectum with water. d) Application of topical anesthetic in a jelly-like base

Principles of treatment of Alimentary tract diseases

6) Reconstitution of digestive flora if necessary

- When prolonged anorexia or acute indigestion occurs in ruminants, the rumen flora may be seriously reduced. In convalescence, the reconstitution of flora can be hastened by oral administration of a suspension of ruminal contents from a normal cow or of dried ruminal contents which contain viable bacteria, yeasts and the substances necessary for growth of the organisms.
- The pH of rumen affects the growth of rumen organisms and hyperacidity (overeating of grain) or hyperalkalinity (overeating of protein-rich feeds) should be corrected by the administration of alkalinizing or acidifying drugs as the case may be.