



Tikrit University
College of Veterinary Medicine

Diseases of digestive system

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Lecturers link

Principles of Alimentary Tract Dysfunction

Primary functions of the alimentary tract

- Prehension.
- Digestion.
- Absorption of food and water.
- Maintenance of the internal environment by modification of the amount and nature of the materials absorbed.

Modes of alimentary dysfunction

- Abnormality of motility.
- Abnormality of secretion.
- Abnormality of digestion
- Abnormality of absorption.

1-Motor Function

• Normal Gastrointestinal Motility

- o The form and function of the small intestine of farm animals are similar between species.
- o The stomachs and large intestines vary considerably between animal species.
- Abnormalities of the stomach and intestinal motility can result in:

o Hypermotility and Hypomotility

- ♣ Motility depends on stimulation via the sympathetic and parasympathetic nervous systems.

- ♣ Peristalsis and segmenting movements are usually affected equally and in the same manner.

o Distension of segments of the tract

- ♣ Can be the result of accumulation of gas, fluid, or ingesta.

- ♣ Distension causes pain and, reflexively, increased spasm and motility of adjoining gut segments.

- ♣ Distension also stimulates further secretion of fluid into the lumen of the intestine, and this exaggerates the distension.

- ♣ When the distension passes a critical point, the ability of the musculature of the wall to respond diminishes, the initial pain disappears, and a state of paralytic

ileus

develops in which much muscle tone is lost.

o Abdominal pain

♣ Alimentary tract disease is the major cause of visceral and, more specifically, of abdominal pain.

♣ The most important mechanism is stretching of the wall of the viscus, which stimulates free pain endings of the autonomic nerves in the wall.

♣ Edema and failure of local blood supply, such as occurs in local embolism or in intestinal accidents accompanied by twisting of the mesentery.

♣ Spasm: “an exaggerated segmenting contraction of one section of intestine” will result in distension of the immediately oral segment of intestine when a peristaltic wave arrives.

o Dehydration and shock

♣ Further secretion of fluid and electrolytes into the oral segments can occur as a result of distension of the stomach or small intestine by the accumulation of saliva

and normal gastric and intestinal secretions

♣ Dehydration can occur can be accompanied by loss of alkali or large loss of acid radicals.

♣ Dehydration is also of major importance in diarrhea.

♣ The distension of alimentary segments is a marked reflex depression of vasomotor, cardiovascular, and respiratory functions, resulting in shock.

2-Secretory Function

• Diseases caused by abnormalities of secretion of digestive enzymes are not generally recognized in farm animals.

• Some neonates are deficient in lactase activity, which results in dietetic diarrhea.

• Undigested lactose causes diarrhea by its hyperosmotic effect.

3-Digestive Function

• The ability of the alimentary tract to digest food depends on its motor and

secretory functions and,
on the activity of the microflora.

- In a number of circumstances, the activity of the flora can be modified so that digestion is abnormal or ceases.
- Failure to provide the correct diet, prolonged starvation or inappetence, and hyperacidity such as occurs in engorgement on grain
- Bacteria, yeasts, and protozoa may also be adversely affected by the oral administration of antibiotic and sulfonamide drugs.

Absorptive Function

- Absorption of fluids and the dissolved end products of digestion can be adversely affected by increased motility.