



Diseases caused by Anaerobic Spore- Forming Bacteria

*PREPARED BY DR. HARITH ABDULLA NAJEM
COLLEGE OF VETERINARY MEDICINE –
UNIVERSITY OF BASRAH*

Predisposing Factors for Clostridial Infections in Chickens

- **Poor litter quality** (wet, caked, high moisture).
- **Coccidial damage** to the intestinal mucosa (*Eimeria* spp.).
- **Immunosuppression** (IBD, Marek's, mycotoxins).
- **Sudden dietary changes** or feed transitions.
- **High stocking density** and overcrowding.
- **Poor ventilation** leading to high ammonia and humidity.
- **Antibiotic withdrawal** or inappropriate antimicrobial use.
- **Presence of intestinal parasites** (e.g., *Ascaridia*).
- **Contaminated feed or water sources** with clostridial spores.

Ulcerative Enteritis(UE):

Synonyms: Quail Disease.

Susceptibility:Quail, Chickens and Turkeys.

Definition: High infection and virulent disease characterized by intestinal ulceration and liver necrosis caused by *Clostridium colinum*.

Transmitted by ingestion of contaminated feed, litter and water.

Symptoms:

- 1–All ages are infected.
- 2–In acute case : Birds sometimes die without any signs(symptomless).
- 3–In Chronic cases:
 - a– Listlessness.
 - b– Humped up and eyes partially closed.
 - c–Watery droppings containing urates.

Post-mortem lesions:

- 1–**In birds which die early:** Lesions limited to hemorrhagic enteritis of the upper portion of intestine.
- 2–Ulceration may occur in any portion of the intestine and ceca.
- 3–Ulcers are small, yellow foci with hemorrhagic border, and are visible on the serosal and mucosal surfaces, they are Crater-like in shape.
- 4–**Liver:**Light yellow mottling with large irregular yellow area of necrosis.
- 5–**Spleen:** Congested, enlarged and hemorrhagic.Necrosis may also be present.
- 6–**Lung:** Congested, sometimes consolidated.

Histopathology:

- 1– Large focal areas of coagulation necrosis.
- 2– Granulocytic and lymphocytic infiltration.

Diagnosis:

- 1– Signs.
- 2– Lesions.
- 3– Bacterial isolation and identification.
- 4– Blood smears.
- 5– Histopathology.

Treatment: Amoxicillin in drinking water (first choice; effective against Clostridium).

Control

- **Add organic acids** (formic, propionic, lactic) to lower gut pH and inhibit clostridia.
- **Probiotics / competitive exclusion products** to restore normal gut flora.
- **Coccidiosis control** if present (use anticoccidials or treat with Toltrazuril).
- **Improve litter** (drying, adding new bedding) and **increase ventilation**.
- **Remove feed containing animal proteins** or spoiled ingredients.

Necrotic Enteritis:

Synonyms:

- 1-Rot gut.
- 2-Crud gut.
- 3-Cauliflower gut.

Definition:

Is an acute disease which produces destruction of the intestinal lining of the digestive tract.
Caused by *Clostridium perfringens* type C.

Clinical signs:

- 1–Age : 6–8 week–old chickens.
- 2–Rapid loss of condition(Emaciation).
- 3–Anorexia.
- 4–Blood–stained feces.

Post–mortem lesion:

- 1–Thickening of distal third of small intestine, lumen containing bloody exudates.
- 2–Necrotic layer adheres to the surface or in the lumen of small intestine.
- 3–The liver is congested.

Diagnosis:

- 1 – Signs.
- 2 – Lesions.
- 3 – Bacterial isolation and identification.
- 4 – Blood smears.
- 5 – Histopathology.

Treatment: Antibiotics.

Botulism

Synonyms:

- 1-Limberneck.
- 2-Western Duck Sickness.
- 3-Duck Disease.
- 4-Bullbar Disease.

Definition:

Acute intoxication of fowl caused by ingestion of spoiled food contain toxin produced by Clostridium botulinum, characterized by flaccid paralysis of the neck, weakness and prostration.

Gangrenous Dermatitis

Synonyms:

- 1–Skin necrosis.
- 2–Wing rot.

Definition:

Necrosis of the skin and deeper tissues caused by several species of clostridial bacteria.