**Classic case:** Young adults, SUDDEN DEATH or depression, ruffled feathers, green diarrhea

**Presentation:** *Pasteurella multocida*
- Outbreaks most commonly associated with:
  - Chickens, **turkeys (most severe)**, ducks, geese
  - Semi-mature & mature chickens
  - **Physiologic stress** (egg laying cycles)
  - Cooler seasons
  - Commonly complicated by **secondary infection**

**Two Forms**

1. **ACUTE form** (**Acute septicemia**)
   - Sudden onset
   - High morbidity & mortality
   - **Clinical signs:**
     - Depression, fever, ruffled feathers
     - Tachypnea, cyanosis (wattles, comb)
     - Anorexia, mouth discharge (mucoid)
     - Watery, whitish diarrhea progressing to green mucoid
     - **Survivors may become chronically infected carriers**

2. **CHRONIC form** (**Survivors of acute form or low virulence strain**)
   - May last 3 to 4 weeks or persist indefinitely
   - **Asymptomatic OR**
   - **Localized infections** throughout body
     - Exudative conjunctivitis, sinusitis, hypopyon
     - Exudative inflammation of:
       - Face, wattles, sternal bursa
       - Foot pads, leg and wing joints, tendon sheaths
     - Respiratory tract infections
       - Exudative pharyngitis
       - Dyspnea, tracheal rales
     - Middle ear, meningeal, cranial bone infections
     - Torticollis

**DDX:** Infectious coryza (*Haemophilus paragallinarum*), mycoplasmosis, fowl pox, Vitamin A deficiency, infectious laryngotracheitis, avian influenza, infectious bronchitis, erysipelas, acute colibacillosis, *Avibacterium gallinarum, P. gallinarum, P. haemolytica, P. anatipestitfer*
Test(s) of choice:

- Field diagnosis – Clinical signs, lesions
- Necropsy

Acute form
Lesions associated w/ vascular pathology (COMMON)
- Marked hyperemia
  - Veins of abdominal viscera
    - Duodenum
  - Ovaries
- Visceral ecchymotic/petechial hemorrhages
  - Lungs
  - Intestines
  - Abdominal fat
  - Heart
- Digestive tract
  - Congestion
  - Excessive mucous
  - Green diarrhea
- Pneumonia
  - Especially turkeys
  - Fibrinous pericarditis, pleuritis
  - Pericardial & coelemic cavity fluid
  - Hepatomegaly, coagulative necrosis (virulent strains)
  - Ovaries
    - Flaccid follicles
    - Egg yolk peritonitis

Chronic form
- Localized exudative infections throughout body
  - Hock joints, foot pads
  - Oviduct, coelemic cavity
    - Wattles, sinuses
  - Calvarial bones, middle ear
  - Meninges, air spaces
    - Respiratory tract
    - Pneumatic bones
- Pneumonia: Especially turkeys
Test(s) of choice: (continued)

- Microscopic exam
  - Impression smears
    - Lesions, bone marrow, blood, liver, heart
    - Gram-stain negative bipolar rods
    - Wright’s stain or methylene blue demonstrate bipolar morphology

- Bacterial C & S
  - Culture samples
    - Liver, lungs, spleen, wattles, affected joints
    - GROWS readily on blood agar
    - Serotype bacterial isolate
      - 16 somatic serotypes
        - 1, 3, 3X4 (most common)
    - TEST isolate for antibiotic sensitivity and resistance

Rx of choice:
- NOT generally practical in commercial poultry
  - Rx usually small flocks, individual birds
- Supportive care
- Antibiotics
  - Early treatment
  - Adequate dosages
  - Sensitivity testing
  - Sulfonamides
    - In feed or water
    - Usually controls mortality
  - Tetracyclines: High levels in feed (0.04%), drinking water or parenteral
  - Penicillin: Sulfas-resistant infections

Prognosis:
- Decreased mortality in birds treated early
- Birds with caseous sinusitis require surgical removal of exudate to prevent chronic shedding

Prevention:
- Vaccination
  - Live and inactivated vaccines
    - Inactivated bacterins
      - Trivalent whole cell products
      - Most common serotypes
    - Autogenous vaccines
- Eliminate contact between poultry flocks and reservoirs
  - Wild birds, rats, mice, cats, raccoons, skunks, other
  - Sick and dead birds
    - Very effective in controlling disease
- Strict biosecurity
- Strict sanitation protocols P. multocida is susceptible to disinfectants, sunlight, drying, heat
**Pearls:** Periodic enzootic outbreaks occur in most countries, worldwide

- *Pasteurella multocida* is causative organism
- *Chronically infected birds* = major reservoir

- Transmission:
  - Horizontal transmission
  - Direct contact, fomites
  - Bite wounds, cannibalism (sick, dead birds)
  - Contaminated food & water
  - Excretions from mouth, nose, conjunctiva

- *P. multocida* infects a wide variety of animals, however, strains isolated from non-avian species generally do not produce fowl cholera

**Images and links worth a look:**

- [Fowl cholera](#), clinical signs and gross lesions, Cornell Atlas of Avian Diseases
- [Pasteurella multocida](#), Australian Center for International Agricultural Research (ACIAR)


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**My Notes:**