

## Fowl Cholera

### The Disease and It's Control

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## Fowl Cholera

### *Definition and Occurrences*

- Infectious disease of poultry, waterfowl and other bird species
- Often appears in poultry as an acute, septicemic disease with high mortality and morbidity
- Also occurs as chronic and localized, often following survival from the acute form
- Most likely occurs in birds under stressors, e.g. poor sanitation; parasitism, malnutrition and other diseases

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## Fowl Cholera

### *Definition and Occurrences*

- Occurs worldwide and is relatively common
- Recognized disease of poultry for over 200 years
- Louis Pasteur isolated and attenuated the causative organism and used it as one of the first vaccines

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## Fowl Cholera

### *Etiology*

- *Pasteurella multocida*, a gram-negative bacteria
- Organism is typed by 2 criteria:
  - \* *Capsule*- serogroups A-F, most field isolates A, all vaccines are serogroup A
  - \* *Somatic antigen*- serotypes 1-16; isolates may have multiple characteristics, e.g. 3x4

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## Fowl Cholera

### *Clinical Signs and Lesions*

#### *Acute cholera*

- Rapid onset, high mortality, sudden death
- May see anorexia, depression, respiratory signs, nasal/oral discharge, cyanosis, diarrhea
- Lesions may be in apparent in acute cases

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### *Clinical Signs and Lesions*

#### *Acute cholera*

Lesions may include:

- enlarged liver with necrotic yellow foci
- hemorrhages of internal organs, heart and membranes
- Fibrinopurulent pneumonia (at right)



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## Fowl Cholera

### *Clinical Signs and Lesions*

#### *Chronic cholera*

- Usually observed in birds surviving acute form
- Lower mortality, lesions more evident and localized than acute form
- Lesions typically consist of swellings of wattles, joints, footpads, conjunctiva, etc., containing cheesy exudate
- Inner ear, skull or brain infections may induce neurologic signs, e.g. incoordination or twisted neck

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### *Clinical Signs and Lesions*

#### *Chronic cholera*

- swollen wattles, facial edema, conjunctivitis



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### *Clinical Signs and Lesions*

#### *Chronic cholera*

- conjunctivitis and facial edema



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### *Clinical Signs and Lesions*

#### *Chronic cholera*

- conjunctivitis and facial edema



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### *Clinical Signs and Lesions*

#### *Chronic cholera*

- Skull infection; note congestion and inflammation of cancellous bone



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### **Fowl Cholera**

#### *Prevention and Control*

- Primary control is through vaccination
- Vaccination cannot be a substitute for good hygiene and sanitation
- Control of carriers and reservoirs (rodents, vermin, cats and dogs) is essential to prevent introduction and persistence of fowl cholera
- Treatment usually with antibiotics, e.g. fluoroquinilones and tetracyclines

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## Fowl Cholera *Vaccination*

### *Live vaccines*

- all live vaccines are serotype A:3x4
- broad protection across serotypes
- Clemson University (CU) strain is the most virulent live vaccine
- Pm-1 intermediate virulence
- M-9 least virulent
- wing web stick application
- vaccination induces palpable reaction or "take"  
5-7 days post-administration

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## Fowl Cholera *Vaccination*

### *Inactivated bacterins*

- most contain serotypes 1,3, and 4
- Some contain serotypes 1,3,4, and 3x4
- only protect against serotypes contained in the bacterin
- oil emulsion product
- administered by injection, usually subcutaneously into the neck

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## Fowl Cholera *Vaccination*

### *Example immunization programs*

- (live/live) 10-12 wk Cholervac Pm-1 by w.w.  
18-20 wk Cholervac Pm-1 by w.w.
- (live/inact) 10-12 wk Cholervac Pm-1 by w.w.  
18-20 wk Cholervac-IV subcut. neck inj.
- (inact/live) 10-12 wk Cholervac-IV subcut. neck inj.  
18-20 wk Cholervac Pm-1 by w.w.
- (inact/inact) 10-12 wk Cholervac-IV subcut. neck inj.  
18-20 wk Cholervac-IV subcut. neck inj.

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## Fowl Cholera Vaccination

### *Post-vaccination tissue reaction*

- well-placed stick
- uncomplicated "take"



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## Fowl Cholera Vaccination

### *Post-vaccination tissue reaction*

- well-placed stick
- uncomplicated "take"
- well-circumscribed



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## Fowl Cholera Vaccination

### *Post-vaccination tissue reaction*

- well-placed stick
- uncomplicated "take"
- well-circumscribed



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## Fowl Cholera Vaccination

### *Post-vaccination tissue reaction*

- well-placed stick
- may see "cords" of hardened, necrotic cellular debris
- well-circumscribed, consolidated
- uncomplicated



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## Fowl Cholera Vaccination

### *Post-vaccination tissue reaction*

- well-placed stick
- uncomplicated "take"
- stick site wound may occasionally open



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## Fowl Cholera Vaccination

### *Post-vaccination tissue reaction*

- "rim-shot", stick close to edge
- note punctures at thumb; may not get optimal reaction due to "feather wiping"



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## Fowl Cholera *Vaccination*

### *Post-vaccination tissue reaction*

- open wound with bruising
- generally no problem if resolving or "drying down" in timely manner



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## Fowl Cholera *Vaccination*

### *Post-vaccination tissue reaction*

- open wound with bruising
- generally no problem if resolving or "drying down" in timely manner



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## Fowl Cholera *Vaccination*

### *Post-vaccination tissue reaction*

- bruising; possibly a nicked blood vessel
- generally no problem if resolving or "drying down" in timely manner



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