

Infectious Coryza

Extended Version

Classic case:

Chickens, acute onset nasal /ocular discharge, sneezing, facial edema, swollen infraorbital sinuses

Presentation:

- Acute upper respiratory infection of **CHICKENS ONLY**
- Worldwide distribution
- High morbidity, low mortality
- **Developed countries** (less of a problem)
 - Primarily **layers** and **pullets**
 - Commerical flocks
 - California, Southeast, Northeast USA
- **Developing countries** (more of a problem)
 - Young chicks (3 weeks old+) most prevalent
- **Clinical Signs**
 - **Mild form**
 - Young chickens
 - Depression
 - Serous nasal discharge
 - Mild facial swelling
 - **Severe form**
 - Young adults, older birds
 - Depression, diarrhea
 - Decreased feed and water consumption
 - Decreased growth
 - Severely reduced egg production or delayed laying
 - Sneezing, serous, mucoid or suppurative nasal discharge
 - Swelling of infraorbital sinuses
 - Facial edema - swollen eyelids that do not open
 - Swollen wattles and intermandibular space (especially **males**)
 - Conjunctivitis - Epiphora
 - Rales
 - Usually with lower respiratory tract involvement, secondary infection
 - Pneumonia, air sacculitis



Infectious coryza- Conjunctivitis. Note infraorbital sinusitis/swelling (arrow)

DDX: Chronic fowl cholera, Newcastle disease, infectious bronchitis, avian influenza, avian metapneumovirus (swollen head syndrome), mycoplasmosis, infectious laryngotracheitis, vitamin A deficiency

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Test(s) of choice:

- **Field diagnosis** – Clinical signs, lesions
- **Necropsy**
 - Inflammation and catarrhal lesions
 - Nasal passages
 - Sinuses
 - Conjunctiva
 - Subcutaneous edema
 - Face
 - Wattles
 - Intermandibular region
 - Conjunctivitis
 - Fibrinosuppurative +/- adherence of eyelids
 - Tracheitis, bronchitis, airsacculitis, pneumonia
 - Most common with 2° pathogen involvement
- **Histopathology**
 - Respiratory organs
 - Disintegration and hyperplasia of mucosal and glandular epithelium
 - Edema with infiltration of heterophils, macrophages, mast cells
- **Microscopic exam**
 - Smear of sinus exudate
 - **Gram negative bipolar rods, tendency to form filaments**
- **Bacterial culture**
 - Grows on blood agar, but *requires* 'nurse' colony of *Staphylococcus aureus*
 - Excretes V-factor
 - **Microaerophilic** - Incubate in candle jar or CO2 incubator
 - **Catalase test** is essential- *A. paragallinarum* is **catalase negative**
 - Nonpathogenic species, *A. avium*, may be present in chicken sinuses
 - Nonpathogenic species are catalase positive
- **Inneculation of susceptible chickens with sinus exudate**
 - Signs occur within 3-5 days
- **Serologic tests**
 - Hemagglutination inhibition test (best of serologic tests)
 - Agar gel precipitation
- **PCR**
 - Superior to culture
 - Available in most developing countries
 - Can be used on live chickens



Infectious coryza
Catarrhal and suppurative sinusitis.
The sinus is filled thick yellow slightly mucoid material.

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Rx of choice:

- Supportive care
- Antibiotics
 - Antimicrobial therapy very effective
 - Must consider **residue regulations** when treating birds
 - Early treatment important
 - Medicate water immediately until medicated feed available
 - Antibiotics commonly used
 - Sulfonamides
 - Macrolides (erythromycin)
 - Oxytetracycline, fluoroquinolones
 - Severe outbreaks
 - Treatment results in improvement
 - May recur when medication discontinued
 - Pullets reared or housed on infected premises - **preventive medication + vaccination program** commonly used



Cornell University
*Infectious coryza-Severe ocular involvement.
Closed swollen eyelids, severe
fibrinosuppurative conjunctivitis*

Prognosis: Economically important disease

- Most birds recover in 2-3 weeks unless complicated by secondary infection
 - **Recovered birds frequently become chronic carriers**
 - **Chronically ill or healthy carrier birds are the reservoir of infection** ★★
- Economic losses due to depopulation, decreased growth, decreased egg production

Prevention:

- **ELIMINATE CARRIERS!**
 - Depopulate
 - Clean, disinfect
 - Leave premises vacant a few days
- **Vaccination**
 - **Inactivated whole cell bacterins**
 - Must contain serovar present in target population
 - **Serovars- A, B, C**
 - Not cross-protective
 - Administer by IM or SQ injection
 - **Autogenous vaccines**
 - Commonly used during severe outbreaks
- **Controlled exposure to live organisms**
 - Sometimes used in endemic areas to immunize layers
- **Strict biosecurity and sanitation protocols**
 - 'All-in / All-out' flock management
 - Get replacements from clean farms or raised on same farm

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Pearls:

- Causative bacterium: *Avibacterium (Haemophilus) paragallinarum*
- Transmission by direct contact, fomites, airborne, contaminated food and water
- **OFTEN** complicated by other diseases (*Mycoplasma gallisepticum*)

Refs: Merck Veterinary Manual, 10th ed (online): Infectious Coryza. Images courtesy of Cornell University and the Atlas of Avian Diseases,

My Notes: