Chlamydiosis

- Called ornithosis in non-psittacine birds, psittacosis or parrot fever in psittacine birds and man.

- **Turkeys** – Most commonly affected poultry. Important in psittacine birds, parrots, cockatiels, etc....

- **Man** – Turkey processing plant workers in the picking room or on the evisceration line. Also cage birds such as parakeets.
Causative Agent

- *Chlamydia psittaci* – Specialized bacteria that is an obligate intracellular parasite. Lacks own enzyme for reproduction.
- Size: 0.3 to 1.5 µ in diameter.
- Psittacine bird = high.
- Turkeys = low toxigenic or high toxigenic.
- Usually in combination with another disease condition – Pasteurellosis.
Comment

- Can be seen with light microscopy. If impression smears of infected tissue (air sac, liver, spleen) are stained with Giemsa, Machiavello, or Gimenez method.
- Appear as multiple intracellular elementary bodies in the cytoplasm of host cells with stains & FA conjugate – the most common method of detection.
Incubation Period

- Variable – According to strain, species and age.
- Turkeys – High virulence – Six to eight (6-8) days.
- Psittacine – Three to twenty-nine (3-29) days experimental forty-one to one hundred and six (41-106) days natural.
- Man – Five to sixteen (5-16) days.
Course of Disease

- Variable depending on virulence of organism. May be silent infections that become acute upon stress to host.
- Can be acute or chronic.
- Will persist for long periods in convalescent host which may be carrier host.
Mortality

- **Variable** – Depending on host, strain of organism and particularly the age of the host. The younger the birds, the greater the mortality.

- In turkeys, mortality may range from 10–30% with toxigenic strain – 1 – 4% with less toxigenic strains, which are more common.
Method of Spread

- Not known for sure – possible carrier host.
- Problem has been related to migratory shore and wading birds (seagulls). Surface water frequented by such birds.
- Airborne in dried excreta.
- Contaminated premises.
Clinical Signs

Depends on virulence of organism:

- Depressed, off feed, with emerald greenish diarrhea due to the presence of bile.
- May take 2–8 weeks to produce signs in large numbers of birds.
- At peak, 50–80% flock show clinical signs with toxigenic strains – 5–20% show signs with less toxigenic strains.
- Birds may have characteristic “resting” attitude – raised tail, resting on breast.
Diarrhea
Sick birds
Typical posture
Postmortem Lesions

ACUTE:

- Pericardial membrane is thickened, congested, and coated with fibrinous exudate.
- Heart may be enlarged and covered with thick yellowish flocculent exudate.
- Lungs are diffusely congested and pleural cavity may contain fibrinous exudate.
Pericarditis
Pericarditis
Fibrinous exudate
Lung congestion
Postmortem Lesions (Continued)

- The liver is enlarged and congested and may be covered with a pseudo-membrane.
- There is usually severe airsacculitis mainly in thoracic area.
- The spleen may be enlarged, 2–4 times, dark and soft or have gray-white spots.
Pericarditis/hepatitis
Peritonitis
Splenomegaly
In less severe infections and chronic cases - lesions less pronounced:
- Enlargement of liver and spleen.
- White focal areas in liver and spleen.

In Parakeets:
- Airsacculitis in thorax
- Enlarged liver and enlarged mottled spleen
- Emaciated but eating
Pericarditis/perihepatitis
Nasal exudate
Diarrhea
Airsacculitis
Hepatitis
Differential Diagnosis

- *E. coli*
- Cholera – without lung lesions
- Mycoplasma
Diagnosis

- **SUGGESTIVE** – Lesions with antibody titer of 1:64 or more.
- **POSTIVE** – The organism can’t grow on artificial media. It needs a host’s enzyme system to grow and multiply. Isolation & identification usually done in embryonated eggs or mice, or upon demonstration of a four-fold rise in titer between acute and convalescent serum.
  - Visualization of elementary bodies by special stain on impression smear.
Inoculated embryo
Elementary bodies
Elementary bodies
This is a reportable disease.

If chlamydiosis is suspected, you should immediately contact the state health department. If you see psittacine birds in your practice that you are suspicious of, contact the state health department. They will tell you what to do.

Always wear gloves and a mask when “posting” suspect birds.
Diagnosis suggestive of chlamydiosis – use 400 G. chlortetracycline/ton until confirmed if high toxigenic or low toxigenic.

- High = 400-800 gm/ton for 3 weeks
- Low = 200-400 gm/ton for 3 weeks

- Must sterilize infection before processing.
- USDA involved with determining treatment in turkeys.
PSITTACINE BIRDS

- 70% for sale have been treated. To sterilize unknown population use chlortetraacycline – impregnated millet, 0.5 mg/gm for 15 to 45 days.

- Sick bird – suspect psittacosis.

- Give doxycycline by gavage 8-12 mg/lb. twice daily for 5 days, then CTC in feed for 30-40 days.
Control

- Place new turkeys on clean premise – free of excreta contaminated by previous infected flocks.
- Separate diseased birds & excreta from well birds.
- Isolate sick birds.
- Treat sick bird promptly & thoroughly.
Control (Continued)

- Serologically test flock close to infected flocks.
- Prevent wild & feral bird exposure.
- Imported birds should be quarantined and fed tetracycline impregnated feed (can’t get high enough levels in the water).
- Treat birds an additional 15 days after release from quarantine.
Prevention

- **Turkeys**
  - Vaccination not effective as yet.
  - Research in progress.

- **Psittacine Birds**
  - Described under treatment.