

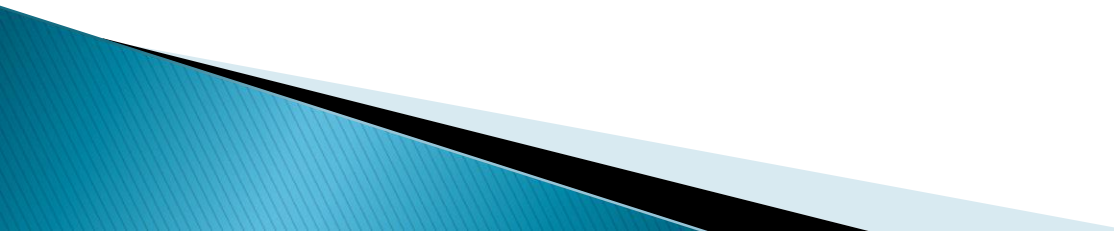
# Colibacillosis

- ▶ Colibacillosis refers to any localized or systemic infection caused entirely or partly by avian pathogenic *Escherichia coli* (APEC), including colisepticemia, coligranuloma (Hjarre's disease), air sac disease, swollen-head syndrome, coliform peritonitis, coliform salpingitis, coliform osteomyelitis/synovitis and coliform omphalitis/yolk sac infection.

# ETIOLOGY

- ▶ The etiology of colibacillosis is *Escherichia coli*.
- ▶ Other infectious agents and noninfectious factors usually predispose an animal to infection.

# Natural and Experimental Hosts

- ▶ Most, if not all avian species, are susceptible to colibacillosis.
  - ▶ Clinical disease is reported most often in chickens, turkeys, and ducks.
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# Transmission, Carriers, and Vectors

- ▶ *E. coli* is present in the intestinal tracts of most animals and shed in the feces, often in high numbers.
- ▶ Direct or indirect contact with other animals or feces can introduce new strains into the poultry flock.

# Localized Forms of Colibacillosis

- ▶ **Coliform Omphalitis/Yolk sac Infection**
- ▶ Omphalitis is an inflammation of the navel (umbilicus). In birds, the yolk sac usually is involved, too, because of its close anatomic relationship.
- ▶ Infection follows contamination of the unhealed navel with virulent strains of *E. coli*.
- ▶ *Fecal* contamination of eggs is considered to be the most important source of infection. Bacteria may be acquired *in ovo* if the hen has or *salpingitis* or *via contamination* following artificial insemination

- ▶ Swelling, edema, redness, and possibly small abscesses characterize acute inflammation of the navel of affected birds. The abdomen is distended, and blood vessels are hyperemic. In severe cases, the body wall and overlying skin undergo lysis and are wet and dirty.
- ▶ These birds are referred to as mushy chicks or poults *E. coli* often persists in the inflamed yolk sac for weeks or months.

# Salpingitis / Peritonitis (Adult).

- ▶ Inflammation of the oviduct caused by *E. coli* results in decreased egg production and sporadic mortality in laying chickens and breeders.



# Colisepticemia

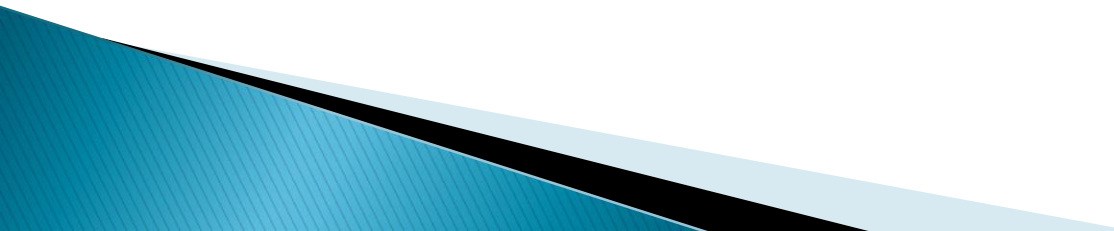
- ▶ The presence of *E. coli in the blood* stream characterizes colisepticemia.

Virulence of the organism and efficiency of the host defenses determine the duration, degree, and outcome of the disease, as well as the pattern and severity of lesions

# Coligranuloma (Hjarre's Disease)

- ▶ Coligranuloma of chickens and turkeys is characterized by multiple granulomas in liver, ceca, duodenum, and mesentery but not in the spleen

# DIAGNOSIS

- ▶ **Isolation and Identification of Causative Agent**
  - ▶ **Differential Diagnosis**
  - ▶ Many other organisms including viruses, mycoplasmas, and other bacteria can cause synovial lesions similar to those resulting from *E. coli infection*.
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# PREVENTION, CONTROL, AND TREATMENT

- ▶ **Management Procedures**
- ▶ **Immunization**
  - Inactivated Vaccines
  - Live Vaccines

# Treatment

- ▶ *E. coli* may be sensitive to many drugs such as ampicillin, chloramphenicol, chlortetracycline, neomycin, nitrofurans, gentamicin, ormethiprim–sulfadimethoxine, nalidixic acid, oxytetracycline, polymyxin B, spectinomycin, streptomycin, and sulfa drugs.