

PULLORUM DISEASE



This disease
is known to
occur in
Afghanistan.



1. Definition

Pullorum disease is a contagious, often fatal diarrheal bacterial disease of young poultry, characterized by moribund and dead birds at hatching time. It usually occurs in an acute systemic form in chicks and pouls, but in adults can be more chronic.

2. Etiology

The causative organism is *Salmonella pullorum*, a non-motile bacteria highly adapted to chickens and turkeys.

3. Transmission

The route of infection is oral or via the navel/yolk. Transmission may be transovarial or horizontal mainly in young birds and may sometimes be associated with cannibalism. The organism can penetrate to eggshell and infect the embryo. Mechanical transmission via fomites (carried around on clothes, shoes or equipment) is also possible. Survivors become infected breeders (cycle begins again).

4. Species affected

The organism is fairly well adapted to chickens and turkeys. People consuming raw eggs can get a mild three-day diarrhea.

Salmonella pullorum can cause a mild diarrheal disease in humans.

5. Clinical signs

Morbidity is 10-80%; mortality is increased in stressed or immunocompromised flocks and may be up to 100%. Chicks from infected eggs are weak and often die within several days. Affected birds tend to huddle under brooders and are depressed. They frequently give out a shrill cry when voiding droppings, which are white and pasty. Growth is retarded and feathers are poor. Gasping may also be observed as the lungs are often infected. Adult birds usually don't show clinical signs, however, there may be a reduction in egg production and fertility.

6. Pathologic findings

Gross lesions may be seen in chronic disease, but are usually absent in peracute disease. When lesions occur, they consist of enlarged and congested liver, spleen and kidneys. Yolk sac can be retained with creamy or caseous yolks material. White caseous nodules may be present in the lung, heart, and intestinal tract, especially ceca. Joints are often swollen with yellow viscous fluid.

7. Diagnosis

Tissue and fecal samples can be submitted for bacterial identification through culture or genetic techniques. Serologic testing alone is not considered adequate for a positive diagnosis. Differential diagnoses include fowl typhoid, fowl cholera, erysipelas, and others.

8. Treatment

Pullorum disease can be slowed by antibiotics, but no drug is capable of eliminating pullorum from a flock.

9. Prevention and Control

If introduced, control should focus on eradication of the disease through isolation and destruction of contaminated flocks, proper disposal of carcasses and disinfection of fomites. As with other salmonella, recovered birds are resistant to the effects of infection but may remain carriers. Vaccines are not normally used as they interfere with serological testing and elimination of carriers. *S. pullorum* may survive for years in a favorable environment, but is less resistant to heat, cold, and most disinfectants.