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**Lecture title: ESCHERICHIA COLI INFECTIONS (COLIBACILLOSIS):**  
**LECTURE 2.**  
**Lecturer Affiliation:**

**3. Colisepticemia:**

An acute septicemic disease caused by E. coli it resembles fowl typhoid and fowl cholera. Dead birds are in good flesh and have full crops suggesting acuteness of the disease. This can occur in young or mature birds. There are sudden deaths, and variable morbidity and mortality.

Parenchymatous organs are swollen with congested pectoral muscles. Livers are green in color and may have small necrotic foci. There may be petechial hemorrhages, pericarditis, or peritonitis.

Acute systemic disease may also be caused by various Pasteurella, Salmonella, Streptococci, and other organisms.

**4. Enteritis:**

Enteritis caused by E. coli is considered rare but pathogenic attaching E.coli have been reported. Diarrhea and dehydration are noted on clinical examination.

At necropsy there is enteritis, often with excessive fluid in the intestines. E. coli may be isolated from parenchymatous organs.

**5. Salpingitis:**

This lesion may occur following the entry of coliform bacteria from the cloaca in laying hens. It is also likely to develop when the left abdominal air sac becomes infected by E. coli causing a chronic salpingitis.

Affected birds usually die during first 6 months postinfection and never lay.

The oviduct is distended with exudate that may be caseous and has a foul odor. No specific signs are noted but there may be an upright (penguin) posture

**6. Coligranuloma:**

Signs vary in this uncommon disease of chickens and turkeys. Nodules (granulomas) occur along the intestinal tract, and mesentery, and in the liver. The spleen is not involved.

The lesions resemble those of tuberculosis. Granulomas of the liver have many causes, some of which would include the anaerobic genera Eubacterium and Bacteroides

**7. Synovitis and osteoarthritis:**

Affected birds are lame or recumbent. There is swelling of one or more tendon sheaths or joints. Synovitis and/or osteoarthritis are frequently a sequel to a systemic infection. With synovitis many birds will recover in about 1 week.

Osteoarthritis is a more severe and chronic condition where the joint is inflamed and the associated bone has osteomyelitis. These severe chronic infections make birds unable to walk. The necropsy findings often include dehydration and emaciation.



Synovitis-arthritis may also be caused by reovirus, or species of Mycoplasma, Staphylococci, and Salmonella.

### **8. Cellulitis:**

This is one of the most common causes of culling at slaughter house in broiler chickens in the United States, some European countries, and Canada. It is recognized primarily at post-mortem inspection, with no abnormality in live birds.

Gross lesions include; variable yellowing and thickening of the skin in the vent and in severe cases over the breast. On incising the skin has yellow caseous plaque of variable size is noted in the subcutis.

Histologically; there is cellulitis involving both dermis and subcutis. The inflammatory reaction includes edema and heterophil infiltration in active areas.

Cellulitis is caused by the secondary infection of skin wounds. Risk factors such as certain broiler breeds, poor feathering, sex (males more susceptible), skin scratches, increased stocking density and litter type have been associated with this condition.

### **9. Panophthalmitis and meningitis;**

Occasional birds have a hyphema, usually in one eye, which is blind. The eye is swollen, cloudy to opaque, and may be hyperemic initially and infection is unilateral. Later the eye shrinks as it undergoes atrophy. numerous bacterial colonies are present throughout the eye.

Varying degrees of retinal detachment, retinal atrophy, and lysis of the lens also may be seen. The organism persists in the diseased eye for long periods of time.

Likewise, meningitis is a rare sequela to E. coli septicemia

### **10. Pericarditis:**

Most serotypes of E. coli, after a septicemia, cause pericarditis. Opaqueness and thickening of the pericardial sac, an edematous epicardium along with myocarditis typically occurs.

Pericarditis can also be caused by other bacteria including Chlamydothyla sp. and can be seen in mycoplasma infection.

### **Control:**

1. Measures should be taken to minimize the eggshell contamination of eggs used for hatching. Eggs should be disinfected on the farm prior to storage and should be stored under ideal conditions. Hatchery sanitation, disinfection, and/or fumigation procedures should be practiced.
2. A vigorous sanitation program should be followed after raising poultry.
  3. Diseases, parasitism, and other stresses on a flock should be minimized as much as possible. Dust should be controlled.
  4. Only feeds free of faecal contaminations should be fed to poultry.

Treatment of water with halogens and related compounds as well as conversion to nipple drinkers has greatly decreased the incidence of septicemic forms