Egg Yolk Peritonitis

Egg yolk peritonitis (the presence of yolk material in the coelomic cavity) is a common cause of abdominal distension in birds. Yolk material by itself induces a mild inflammatory response and may be reabsorbed by the peritoneum. Because yolk is an excellent growth medium for bacteria, peritonitis may result from secondary bacterial infection. Localized to diffuse fibrinous peritonitis may result, and may lead to secondary ascites and organ inflammation or compromise in chronic cases.

Egg peritonitis is characterized by fibrin or albumen-like material with a cooked appearance among the abdominal viscera. It is a common cause of sporadic deaths, but in some flocks may become the major cause of death and give the appearance of a contagious disease. It is diagnosed at necropsy.

Lodgment of eggs in the oviduct was probably due to reverse peristalsis brought about by breakage of the thin-shelled eggs and secondary bacterial infection. Peritonitis follows reverse movement of albumen and Escherichia coli bacteria from the oviduct into the abdomen. If the incidence is high, culture should be done to differentiate between Pasteurella (fowl cholera) or Salmonella infection.

When hens have too many large ovarian follicles, a problem described as erratic oviposition and defective egg syndrome (EODES) is seen in broiler breeders.

This condition is accompanied by a high incidence of double-yolked eggs, prolapses of the oviduct, internal ovulation, and/or internal laying that often results in egg peritonitis and mortality. EODES is prevented by avoiding light stimulation of underweight pullets too early and following body weight and lighting recommendations for each breeder strain. Overweight hens may also have a higher incidence of erratic ovulations and mortality associated with egg peritonitis.

Clinical Signs:

Sudden death, loss of appetite/anorexia, weakness, depression, respiratory distress, lethargy, fluffed feathers, lack of vocalizations, yolk-colored droppings, swollen vent and/or abdomen (the swelling feels spongy to the touch), and ascites. Some of these symptoms also mimic egg binding. Ascites is most commonly seen in cockatiels and waterfowl.

Nesting behavior or recent egg laying is commonly reported at presentation. Abdominal wall herniation may be a complication in cases of extreme abdominal distension secondary
to increased coelomic pressure. Although ascites is not present in all birds with egg yolk peritonitis, fluid evaluation may be diagnostic when ascites is a presenting clinical sign. Grossly, the fluid is slightly yellow to yellow, with possible visualization visualization of yolk material and protein strands. The fluid may appear noninflammatory (as in this case) or inflammatory, with or without sepsis. Typical findings would be only yolk or fat globules in the former case and a mixture of heterophils, macrophages, lymphocytes, fat globules, and yolk globules with or without bacteria in the latter case.

Any ascitic fluid from a bird should be cultured, especially in cases of egg yolk peritonitis. Coliform bacteria have been the most common isolates in egg yolk peritonitis. (Sources: Abdominal Effusion in a Bird / Vet Clin Path Journal, Vol. 31, Merck Vet Manual, Ruptured-yolk peritonitis and organochlorine residues in a royal tern.)

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