University of Mosul
Lecture No.:
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Lecture title:

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Summary:

Avian bordetellosis(in turkey)

is a highly infectious, acute disease of the upper respiratory tract of young turkeys. Bordetella avium was once the only known etiologic agent, but B hinzii is now also known to be a potential cause. Clinical signs include sneezing (snick), watery or foamy eyes, clear nasal discharge following gentle pressure to the nares, mouth breathing, dyspnea, tracheal rales, and altered vocalization. Diagnosis is based on clinical signs and lesions and isolation of B avium or B hinzii from the respiratory tract. Antimicrobial therapy is rarely effective but sound husbandry practices may reduce the impact of an outbreak.

Damage to the upper respiratory tract resulting from bordetellosis can lead to secondary infections with Escherichia coli or other agents, which can significantly increase the severity of the disease. In many cases, turkeys infected solely with B avium recover within 4–6 weeks without serious consequences.

B avium is highly contagious and easily transmitted from infected turkeys to susceptible birds by direct contact. It can also be spread through contaminated drinking water, feed, and litter, which can remain infectious for as long as 6 months. Other domesticated and wild birds from which B avium has been isolated should be considered possible reservoirs of infection. No studies have yet directly addressed transmission of B hinzii, but considering its close relationship to B avium, it seems likely these two species have similar patterns of transmission.

Clinical Findings of Bordetellosis in poultry:

Signs of bordetellosis usually occur 7–10 days after infection and include sinusitis, with a clear nasal discharge that can be observed when pressure is applied to the nares. Foamy-watery eyes, a snick or cough, mouth breathing, dyspnea, tracheal rales, and altered vocalization are also characteristic. Older turkeys may develop a dry cough. During the first 2 weeks of disease, the nares and feathers of the head and wings often appear crusted with wet, sticky exudate. By 1 week after disease onset, tracheal softening can sometimes be palpated through the skin of the neck. Copious production of mucus in the trachea and tracheal collapse can result in mortality due to suffocation. Complicated disease often triggers more exaggerated signs, including airsacculitis.

Lesions

Lesions are primarily found in the upper respiratory tract and consist of nasal and tracheal exudates, collapse of cartilaginous rings, and progressive loss of ciliated epithelium. In uncomplicated disease, the tracheal epithelium can return to normal 4–6 weeks after the onset of signs.

At necropsy, turkeys with characteristic bordetellosis have watery eyes and extensive mucus in the sinuses and trachea, which rarely extends below the tracheal bifurcation. Mild hemorrhage in the lining of the trachea may be apparent in some cases, and softening of the tracheal rings is usually evident, sometimes accompanied by a dorsal/ventral flattening of the trachea. Pneumonia and airsacculitis are observed only when the disease is complicated by another disease agent

Treatment of Bordetellosis in Poultry

- Antimicrobial treatment is rarely effective

Although antimicrobial therapy may be helpful for secondary colibacillosis