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## Incidence of infectious laryngotracheitis in an Aseel chicken unit: A report

TA Vijayalingam, NV Rajesh and S Ilavarasan

**Abstract**

A severe (January 2019) incidence of Infectious Laryngotracheitis (ILT) occurred in 16 weeks old Aseel flock maintained under deep litter system at Melakidaram village of Ramanathapuram District, Tamil Nadu, India, during January 2019. The affected flock (1000 Nos) was reported to have a continuous mortality (23%) and increased morbidity, almost 100%. The affected stock was said to be suffered with dullness, inanition, reduction in bodily condition, prostration, dyspnoea with pump handling gasping respiration, conjunctivitis, occasional swelling of the paranasal sinuses and expectoration of blood mixed mucous discharge. Post Mortem examination of the carcass showed poor bodily condition. The lumen of trachea was found to be occluded with thick serofibrinous to caseous exudates mixed with blood. The mucosa of trachea was little oedematous and severely haemorrhagic. The sinuses were intensively hyperaemic and oedematous. Lungs were highly congested and oedematous. Steady recovery of the remaining ailing birds could be achieved after treating them with Tetracyclin powder (Tetracyclin Hydrochloride, Intervet®) at the rate of 2.5g in 1litre of drinking water for 10 days. The improvement in general cleanliness and feeding management were also found to augment the efficacy of treatment.

**Keywords:** Aseel chicken, infectious laryngotracheitis, gross pathology, Ramanathapuram

**1. Introduction**

Infectious laryngotracheitis (ILT) is a viral respiratory disease caused by a *Gallid herpesvirus* I. ILTV belongs to the family *Herpesviridae*, subfamily *Alphaherpesvirinae*, genus *Iltovirus* [7]. Natural infections with ILTV occur mainly in chickens, and both young and adult chickens are susceptible to infection. ILTV of chickens is responsible for serious production losses and decreased egg production along with severe mortality of affected birds. Clinical signs can be observed 6-12 days post infection. There are two clinical forms of ILTV infections, severe and mild [2]. Clinical signs of the severe form include marked dyspnoea and expectoration of bloody mucus, watery eyes and hemorrhagic conjunctivitis [3]. This form can cause 90%-100% morbidity with mortality ranging from 5% to 70% and average mortality being 10-20%, variable depending on the viral strain [8]. Mild ILT forms generally results in morbidity lower than 5% and mortality ranging from 0.1% to 2% [1]. Clinical signs of the mild form include depression, reduced egg production and reduced weight gain, conjunctivitis, swelling of the paranasal sinuses and nasal discharge. Gross lesions of the severe form include necrosis with hemorrhage and fibrinous exudate in the conjunctiva, larynx, trachea and nasal mucosa. Gross lesions in mild form include swollen eyelids, hyperaemic conjunctiva and mild to moderate Tracheitis [10]. Histopathological changes in the severe form is characterized with serofibrinous and hemorrhagic laryngotracheitis with syncytial cell formation and intranuclear inclusion bodies [3, 5]. In mild forms, there is moderate fibrinous laryngotracheitis and conjunctivitis, with rare evidence of intranuclear inclusion bodies [10]. The present report describes the pathological findings and the method of management and therapeutic measures followed in a recent incidence of avian infectious laryngotracheitis in an Aseel chicken farm nearby Melakidaram village, Ramanathapuram District, Tamil Nadu State, India.

**2. Materials and Methods****2.1 Materials**

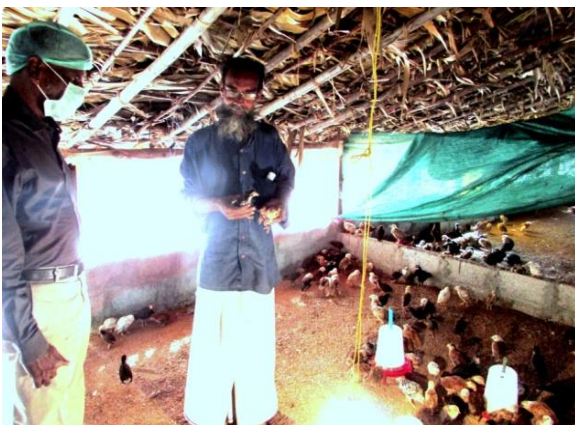
The ailing and dead birds from an Aseel chicken farm at Melakidaram village, information shared by that farmer, data generated on farm investigation and on post-mortem examination were the materials for this study.

## 2.2 Methods

The information shared by the farmer was collected. On- farm investigation was done to ascertain the condition. The details on general management were collected. The information on the onset and the course of disease and the pattern of mortality and morbidity were collected. Post-mortem examination was performed on the dead, fairly fresh carcasses. The information on the gross lesions was collected. Based on the gross lesions suggested treatment and management practices to be followed. The result of complete recovery of the remaining stock was collected 10 days after starting the treatment.

## 3. Results and Discussion

The affected flock (1000 Nos) was reported to have a continuous mortality (23%) and increased morbidity, almost 100%. The affected stock was dull, lethargic with reduced bodily condition (Fig.1). The birds showed dyspnoea, gasping with pump handling respiration (Fig.2), conjunctivitis, swelling of the paranasal sinuses (Fig.3) and expectoration of blood mixed mucous discharge. Post Mortem examination of the carcass showed poor bodily condition. The lumen of trachea was found to be occluded with thick serofibrinous to caseous exudates mixed with blood (Fig.4 and 5). These serofibrinous exudates with cellular debris and mild haemorrhage might either be due to the increased permeability of the exposed vessels or due to the rupture of the vessels. The thick caseous nature of the exudates in a few cases might be due to the mixing up of the exuded fibrinous materials and the cellular debris in later stages of the disease. Linares *et al.* (1994) <sup>[6]</sup> and Hidalgo (2003) <sup>[4]</sup> reported that necrosis and desquamation of lining epithelial cells leads to the exposure and rupture of blood vessels beneath the lamina propria causing hemorrhage in the tracheal lumen in severe cases of the disease. The mucosa of trachea was little oedematous and severely haemorrhagic in majority of the carcasses examined. The sinuses were intensively hyperaemic and oedematous. Highly congested and oedematous lungs (Fig. 6) noticed in this study indicated the severe form of ILT as described by Puvarajan *et al.*, (2018) <sup>[9]</sup>. Steady recovery of the remaining ailing birds could be achieved after treating them with Tetracyclin powder (Tetracyclin Hydrochloride, Intervet®) at the rate of 2.5g in 1litre of drinking water for 10 days. The improvement in general cleanliness and feeding management were also found to augment the efficacy of treatment.



**Fig 1:** Infected flock of Country chicken farm



**Fig 2:** Gasping symptoms in the affected flock



**Fig 3:** Edema of paranasal sinus in affected flock

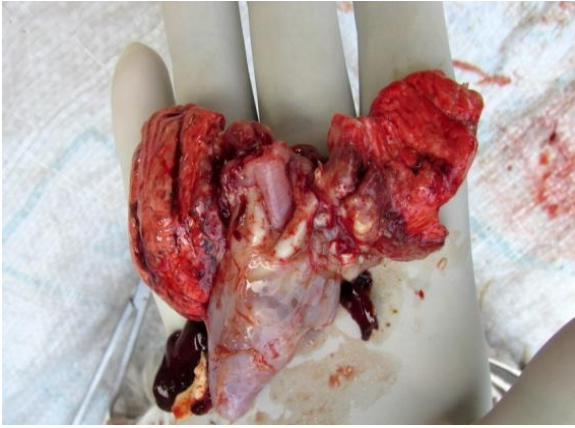


**Fig 4:** Haemorrhagic Tracheitis with caseous plug in trachea



**Fig 5:** Fibrinous Tracheitis with caseous plug in trachea





**Fig 6:** Congestion and consolidation of affected lungs

J. Mild infectious laryngotracheitis in broilers in Southeast. *Avian Diseases*. 2004; 48:430-436.

#### 4. Conclusion

The study requires a detailed investigation with histopathological, virological and molecular screening. Characterization of the field virus by egg inoculation and molecular techniques can throw better light on the management and control of this condition and also to understand the probable source of infection.

#### 5. Acknowledgments

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