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INFECTIOUS LARYNGOTRACHEITIS DISEASE IN BROILER IN ASSIUT GOVERNORATE

(With 4 Tables and 2 Figures)

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(Received at 28/12/1999)

مرض التهاب الحنجرة والقصبية الهوائية المعدي في البدارى بمحافظة أسيوط

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تم تشخيص مرض التهاب الحنجرة والقصبية الهوائية المعدي في أربع مزارع لبدارى الدجاج بمحافظة أسيوط. وقد ظهرت أعراض تنفسية في الطيور المريضة. تم عزل الفيروس من الحنجرة والقصبية الهوائية. تم التعرف على الفيروس المعزول سيرولوجيا وهستولوجيا. كما تم استكشاف وجود أجسام مناعية ضد المرض في مصل الطيور المصابة وذلك بواسطة اختبار الترسيب في الأجار.

SUMMARY

Four outbreaks of infectious laryngotracheitis (ILT) were recorded in broiler farms in Assiut Governorate. Affected birds suffered from respiratory distress. ILT virus was isolated from larynx and trachea of infected birds. The isolated virus was identified serologically and histologically. The serum of infected birds showed precipitating antibodies to ILTV.

Key words: Infectious Laryngotracheitis In Assiut.

INTRODUCTION

Infectious laryngotracheitis (ILT) is a respiratory disease of chickens. It is world wide in distribution and ranges in severity from mild clinical signs such as conjunctivitis and reduced egg production to acute respiratory distress (Seddon and Hart, 1936; Hanson and Bagust, 1991). The classical form of the disease is characterized by dyspnea,

gasping, coughing and expectoration of bloody exudate. The disease affects all ages but the most characteristic signs are observed in adult birds (Hitchner *et al.* 1977; and Bagust *et al.* 1986).

The first outbreak of I.L.T was described in America by May and Titsler (1925) and caused by herpesvirus (Watrach *et al.*, 1959). I.L.T virus could be propagated in the chorio-allantoic membrane (CAM) of developing chicken embryos. (Burnet, 1934) and produced an opaque raised edge and depressed gray central areas of necrosis (Beveridge and Burnet, 1946).

Bar (1963) reported I.L.T in broilers as young as two weeks old. Singh *et al.* (1973) reported seven outbreaks of I.L.T in birds 4-32 weeks with very low morbidity rate in India. Fahey *et al.* (1983) infected one-day-old chicks by intratracheal inoculation and caused mortality at 3 weeks of age.

Davidson and Miller (1988) reported an atypical outbreak in broiler flocks of 3 weeks old causing conjunctivitis and 50% mortality in Pennsylvania.

Linares *et al.* (1994) reported an outbreaks of respiratory disease in broiler flocks in California during the fall of 1992.

In Egypt the disease was first reported by Tantawi *et al.* 1983. The disease was reported by many authors in layers (Seddon and Hart, 1936; Singh *et al.*, 1973; and Fahey *et al.*, 1983).

This work threw the light on an unusual form of the disease affecting broilers. The causative virus was isolated and identified

MATERIAL and METHODS

Case history:

Between March to July, 1998, disease outbreaks was observed in 4 broiler farms in Assiut Governorate. the birds showed respiratory signs with 70% morbidity and 50 mortality.

Chicken embryos:

10-11 day-old chicken embryos were provided by the farm of Fac. of Agriculture, Assiut University and used for virus isolation, titration and neutralization test.

Antigen:

Reference I.L.T virus was provided by Dr. S. Mousa. Poultry Dept. Faculty of Vet. Med. Assiut University as homogenized chorioallantoic membrane (CAM) infected with an egg adapted virulent virus strain used in the agar gel precipitation (AGP) and neutralization tests.

Antiserum:

Reference ILT antiserum was kindly provided by Dr. S. Mousa, Poultry Dis. Dept. Faculty of Vet. Med. Assiut Univ.

Serum samples:

Serum samples were collected from affected flocks and kept at -20°C until they were subjected to agar gel precipitation test.

Virus isolation:

Samples from larynx and trachea were collected, ground, suspended in normal saline, centrifuged, 1 ml of supernate with antibiotics mixture was inoculated into CAM of 10-day old chicken embryos for 3 successive passages. CAMs which have pock lesions were collected, homogenized, with normal saline, centrifuged and the supernate was stored at -20°C until used for virus titration.

Virus titration:

The isolated strains were titrated in embryonated chicken eggs and the embryo infective dose₅₀ (EID₅₀) was calculated according to the method of Reed and Muench (1938).

Serology:

a) Agar gel precipitation (AGP) test:

The microtechnique was carried according to the method described by Beard (1982).

b) Virus neutralization (VN) test:

Virus was neutralized in 11-day-old chicken embryos (alpha procedure).

The neutralization index was determined according to the method of Hitchner *et al.* (1958).

Histopathology:

Tracheal smears stained with Haematoxyline and eosin as well as Giemsa stain (Cover and Benton 1958; Bancroft and Stevenson 1982) were examined microscopically.

RESULTS

The disease outbreaks was observed in 4 broiler farms in Assiut Governorate, with morbidity and mortality rates 70% and 50% respectively. The birds showed nasal discharge, gasping and coughing. The post mortem examination revealed mucoid to haemorrhagic tracheitis and in some cases larynx and trachea were filled with blood.

The serological screening revealed that precipitating antibodies were recovered in 38 out of 440 tested sera. Khanna et al. (1972) detected ILT precipitating antibodies in broilers.

It could be concluded that ILT disease can threaten broilers as well as adult birds, so the exposure of young age should not be neglected

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Table 1: Incidence of isolation ILT from larynx and trachea.

Farm	No. of examined samples	No. of +ve samples
1	40	1
2	90	2
3	60	3
4	50	2
Total	240	8

Table 2: Results of virus titration.

Isolate	Virus titer
I*	10 ^{6.34}
II*	10 ^{4.40}
III*	10 ^{7.28}

* Passage no.3

Table 3: Results of virus neutralization

Isolate	Neutralization Index
I	3.4
II	2.8
III	3.7

Table 4: Results of prevalence of ILT antibodies using AGP test

Farm	No. of tested sera	+ve serum samples
1	100	5
2	120	12
3	90	14
4	130	7
Total	440	38



Fig. 1 : CAM showing focal whitish pock lesions.



Fig. 2 : Trachea showing degenerative, necrotic changes and intranuclear inclusion bodies