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Study on clinical signs and gross lesions of *Mycoplasma gallisepticum* in broiler breeder farms

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ABSTRACT

Mycoplasma gallisepticum (MG) is one of the most important diseases in Iranian poultry industry and all over the world. Mortality, poor weight gain and increasing of feed conversion ratio (FCR) were seen in MG infected flocks. In this study, 11 broiler breeder farms located in northwest of Iran were investigated during 2011-2012. Three of these farms infected with Mycoplasma gallisepticum during study, the clinical signs and lesions were evaluated. Results showed that in farms infected with Mycoplasma gallisepticum, severe conjunctivitis, lungs and trachea hyperemia, and sever airsacculitis with caseous exudates were obvious. It can be concluded that MG in broiler breeder farms have potency of great economical losses, and it's clinical signs and gross lesions in infected birds were very severe and it could decline broiler breeders performance.

Key words: Mycoplasma Gallisepticum, Broiler breeders, Clinical Signs, Gross lesions.

INTRODUCTION

Mycoplasma gallisepticum (MG) is one of the most important disease in poultry production and also it is the causative agent of chronic respiratory disease in chickens [15]. MG infection causes significant economic losses in the poultry industry due to downgrading of carcasses at slaughter because of airsacculitis, treatment costs, and due to its effect on flocks performance [17], and reduction of egg production in chickens, turkeys and other avian species were reported [16]. MG infection mainly is transmitted through ovaries, and the MG-infected breeder flocks should be depopulated; hence, the preferred method for MG control is to maintain MG-free flocks [20]. However, in some situations such as multi-age production farms, maintaining the flocks free of MG may be difficult or impossible.

Also MG infection is of high economic significance because of high morbidity and high mortality. MG infection often remains asymptomatic, however, its clinical signs include respiratory rales, coughing, sneezing, nasal discharge and frequently sinusitis, also the infection causes sub-optimal egg production in layers [16].

Gross lesions of MG infection in the respiratory tract were reported previously [4, 14], and air sacculitis [8] has been described [1, 3].

The aim of this study was to evaluate the gross lesions and clinical signs of *Mycoplasma gallisepticum* in naturally infected broiler breeder chickens.

MATERIALS AND METHODS

In this study, 11 broiler breeder farms located in northwest of Iran were investigated during 2011-2012. Three of these farms infected with *Mycoplasma gallisepticum* during study, the clinical signs and lesions were evaluated. Also the presence of MG in infected farms was confirmed with PCR amplification of a segment in 16SrRNA specific for *Mycoplasma gallisepticum*.

RESULTS AND DISCUSSION

Mycoplasma infections are important poultry disease that causes economical losses in poultry production, especially in broilers and broiler breeders. Purpose of this study was to investigate the gross lesions and clinical signs of Mycoplasma gallisepticum in naturally infected broiler breeders.

Because of high prevalence rate of MG infection was reported previously by several studies in broiler breeder farms [10, 18, 19]. In this study Clinical Signs and gross lesions were investigated in broiler breeder farms and any changes were recorded, according to obtained data in 3 of 11 farms *Mycoplasma gallisepticum* infection were confirmed by 16SrRNA PCR.

Clinical signs:

The non-infected flocks remained healthy, whereas the mycoplasma infected birds were depressed with ruffled feather, sever conjunctivitis, coughing and sneezing with nasal discharges, dyspnea with typical voices that were recorded in farm during disease period. Also infected chickens were sitting and breathing through their open mouths. These results are in agreement with previous studies in field condition and some in experimental conditions [5, 6, 9, 10, 13, 14].

Fig-1: Conjunctivitis in infected chickens

Gross Lesions:

Serious involvement of trachea, lungs, air sacs, heart and liver, and catarrhal exudates in nasal passages, catarrhal and foamy exudates in the trachea were reported previously in MG infected flocks [2, 16]. Congestion and hemorrhage of the trachea, dark red color appearance of Lung accompanied with congestion, and hemorrhages in complicated cases were reported [12]. Accumulation of caseous in the bronchi and pneumonic areas in the lungs were reported, and Foamy Air sacculitis was also reported previously, that then become thickened and covered with caseous exudates and cloudiness [7]. Although liver and heart clear in the mycoplasma infected birds, but however, in complicated infections, heart covered with fibrinopurulent, while liver was congested and showed haemorrhages. The color of the liver was slightly changed to pale and fibrinopurulent covering perihepatitis was reported [2, 11]. Our results showed *Mycoplasma gallisepticum* could cause severe gross lesions in broiler breeder, and the lesions were included: hyperemia in lungs and trachea, sever airsacculitis with caseous exudates, sever conjunctivitis, these results are in agreement with previous studies.

Fig-2: Hyperemia in trachea of infected flocks

Fig-3: Sinusitis, caused by *Mycoplasma gallisepticum*

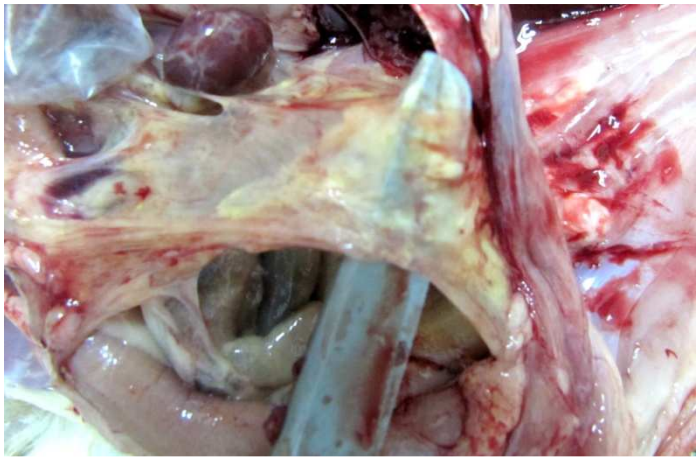

Fig-4: purulent air sacculitis with caseous exudates

CONCLUSION

Our results indicated that *Mycoplasma gallisepticum* infection in broiler breeder also could cause severe clinical signs and gross lesions and it could decline broiler breeders performance. Also the results of our study in agreement with previous studies. And it will be mentioned that MG positive chicks that derived from these infected flocks have low value and quality, because MG can transfer through eggs to newly hatched chickens.

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