Decreased production in broiler breeders due to tendon rupture by *Mycoplasma synoviae*

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INTRODUCTION

In chickens *Mycoplasma synoviae* most frequently occurs as a subclinical or inapparent infection of the upper respiratory tract (Vogl et al., 2008). Nevertheless, this agent can also cause an infectious synovitis (Cobb, 2011). In both cases, infection with *M. synoviae* might result in a decrease of egg production, growth and hatchability rates, and in a downgrading of carcasses at slaughter due to airsacculitis and arthritis lesions (Kleven, 2003). In recent years, the occurrence of arthropathic and amyloidogenic strains of *M. synoviae*, as well as strains that induce eggshell apex abnormalities and egg production losses, has increased the economic impact of this pathogen (Catania et al., 2010).

CASE REPORT

In late February 2013, an outbreak of lameness occurred on a broiler breeder flock (30,000 birds divided by four houses) of a multi-age farm, with a total of two breeder flock (60,000 birds in total). The leg lesions began soon after transfer between 23 and 25 weeks of age, and persisted for the rest of the flock's life although with peaks of morbidity and mortality. The percentage of birds with this problem ranged between 5 and 10%. A standard breeder vaccination program was applied but the flock had not been vaccinated against *M. gallisepticum* or *M. synoviae*. In the rearing period, between 10 and 18 weeks of age, serologic tests to *M. gallisepticum* and *M. synoviae* were negative.

CLINICAL SIGNS

Postmortem examination of 30 animals at the farm revealed arthritis lesions affecting the hock joint in 40% of the examined birds (Figure 1) and the foot pads in 30% (Figure 2), and 5% of the birds exhibit femoral osteomyelitis. The rest of the examined birds didn't reveal any articular or tendon lesion.

![Incised swollen hock joint with granulation tissue and purulent exudates; Pathological findings in foot pad of broiler breeders](Image)

CONCLUSIONS

Mycoplasmas are important avian pathogens, which cause large economic losses in Portugal and worldwide (Kleven, 2008). Tendon rupture in this flock could be directly correlated with *M. synoviae* infection. Despite the good level of biosecurity and stringent control of contact routes in Portuguese breeder farms, *M. synoviae* infection was detected. We can hypothesize the presence of a *M. synoviae* strain with a tendon tropism. The failure to eradicate *M. synoviae* in commercial poultry flocks is in part due to the ability of this organism to establish lifelong infections in their hosts and due to the physical design of the modern poultry premises (Marois et al., 2005). It is necessary to determine new and more effective strategies to reduce losses due to Mycoplasma infections (Kleven, 2003). In conclusion, infections with *M. synoviae* are present in broiler breeder flocks in Portuguese poultry farms and more investigation should be put into practice to determine prevalence and strategies to reduce economic impact of this pathogen.

REFERENCES