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Mareks Disease in An Aseel Chicken - Cytohistopathological Approach

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Mareks diseases (MD) is a lymphoproliferative disease of chicken affecting all organs including skin. Mareks disease is become a menace to the poultry industry owing to the serious economic loss. MD is caused by herpes virus with three serotype of MDV (Carter *et al*., 2006). MD is a very serious problem and it produces up to 60% of mortality in layers and 10% of mortality in broilers. Epidemiological data recorded average about 10–40% flock mortality (Arulmozi *et al*. 2011). The clinical feature of MD is characterized by paralysis of the wings, legs and neck with lameness, depression and death occurred. The present paper reports the occurrence of MD in Aseel chicken.

Case History and Clinical Observations

Carcass of a two years old male cock was presented to the Department of Veterinary Pathology, Veterinary College and Research Institute, Tirunelveli for the postmortem examination with the history of red coloured diarrhoea for the past one week. External examination of the carcass revealed red coloured staining noticed on the cloacal region with good body condition . Internal examination revealed hepatomegaly with multiple light gray white coloured nodules and some of the lobes entirely replaced by the nodules. Spleen revealed light gray white coloured necrotic areas on the surface and pale kidney. Congested intestinal mucosa and light gray white coloured nodules noticed throughout the intestinal part (Photo 1). Impression smears were collected from the nodules for cytological examination and stained with Leishmen-Giemsa stain. The tissues were collected in 10 per cent natural buffered formalin and paraffin embedded tissue sections 4 to 6 μm in thickness were cut and stained with Haematoxylin and Eosin stain (photo 2 & 3) as per the routine procedure described by Bancroft and Gamble (2008).

Results and Discussion

Cytological examination of the stained impression smear revealed the presence of pleomorphic lymphoid cells with plasma cells. Neoplastic cells were well differentiated with indistinct cell borders. The nuclei were variable sized and round to oval shaped with prominent nucleoli and mitotic figures were also seen. These findings were corroborated with earlier reports (Cho *et al*.1998). Microscopic examination of the liver tissue section revealed focal neoplastic lymphoid cell accumulations and

Fig1. Multiple light gray white coloured nodules entirely replaced by liver lobes

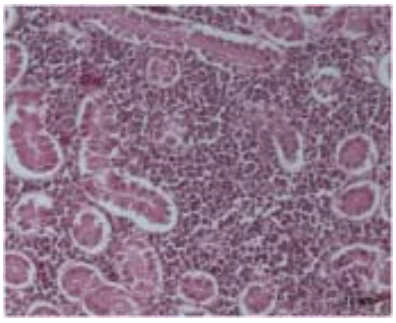

Fig 2. Diffuse infiltration of pleomorphic lymphoid cells in kidney. H&E.x 100

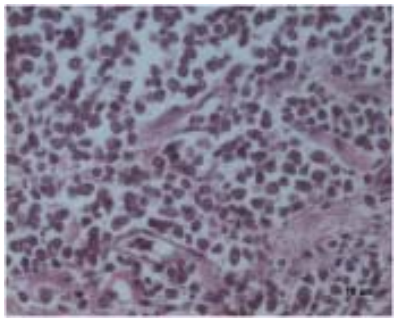

Fig-3 Diffuse neoplastic lymphoid cells accumulations and invaded into the interlobular connective tissue of the liver. H&E.x100

invaded into the interlobular connective tissue with diffuse infiltration into the sinusoidal areas. The periphery of the liver completely replaced by the pleomorphic lymphoid cells. Diffuse infiltration of pleomorphic lymphoid cells were also seen in the spleen, kidney, lungs, heart and intestine. Based on the gross, cytopathological examination, the nodules were confirmed as Marek's disease. The macroscopical findings in the visceral organs are in accordance with the Arulmozhi *et al.* (2011) and microscopical lesions are in accordance with Balachandran *et al. (*2009). While in the present case, nerve enlargement was observed is in agreement with Kamaldeep *et al.* (2007) who recorded the nerve enlargement in vaccinated broilers affected with MD.

Conflict of Interest: All authors declare no conflict of interest.

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