



Title	PATHOLOGICAL ANALYSIS ON CORRELATION BETWEEN NUCLEAR INCLUSION FORMATION IN THE FEATHER-FOLLICLE EPITHELIUM AND INCIDENCE OF MAREK'S DISEASE : STUDY OF FIELD FLOCKS
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INCLUSION FORMATION IN THE FEATHER-FOLLICLE EPITHELIUM AND  
INCIDENCE OF MAREK'S DISEASE : STUDY OF FIELD FLOCKS

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The following observations were made to analyse previous reports that nuclear-inclusion (NI) formation in the feather-follicle epithelium (FFE) correlated with incidence of Marek's disease (MD). Two groups of birds were randomly chosen from chicken flocks on 2 rearing farms in Hokkaido (A and B farms). Selected test chickens were necropsied at 15 and 20 weeks old in A farm group (Nick chick) and at 17 and 20 weeks old in B farm group (Hyline), and were investigated on the correlation between NI formation in the FFE and MD response during incubation period of MD. The results were summarized as follows :

1. NI-positive chickens showed higher incidences of MD-associated lesions in the peripheral and central nervous systems and MD-associated lymphoid lesions in the viscera than NI-negative chickens, regardless of age or farm. Furthermore, NI-positive 20-week-old chickens developed more MD-associated lesions than NI-positive 15-17 week-old chickens.

2. Among the test chickens of A farm, development of tumorous lesions was frequently seen in NI-positive 20-week-old chickens. On the other hand, among the test birds of B farm, development of tumorous lesions was not detected in any birds with or without NI formation, and furthermore, none of the remaining test chickens, which were not necropsied developed MD by 240 days of age, regardless of their NI formation by 20 weeks of age. In B farm birds, however, there was a close correlation between NI formation in the FFE and the low rate of laying.

3. Discrepancy of the correlation of NI formation in the FFE with incidence of MD between A and B farm birds was reflected by differences of histological changes in the spleen or in the MD-associated lesions in the various organs or tissues. In the NI-positive chickens of A farm, striking changes in the spleen consisted of lymphoid depression in the white pulp and development of lymphoid tumor. On the other hand, in the NI-positive chickens of B farm, striking changes in the spleen consisted of regeneration of lymphatic tissues, plasma cellular hyperplasia and germinal center formation. Moreover MD-associated lesions in other organs frequently showed regressive changes with plasma cellular and germinal center reaction.