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Citation	Japanese Journal of Veterinary Research, 36(2), 167-167
Issue Date	1988-05-20
Doc URL	https://hdl.handle.net/2115/3111
Type	departmental bulletin paper
File Information	KJ00002377095.pdf



HISTOPATHOGENESIS OF TUMOROUS LESIONS IN THE FEATHER PULP OF CHICKENS INFECTED WITH MAREK'S DISEASE

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This investigation was done to elucidate the initial lesion in the feather pulp of chickens infected with Marek's disease (MD) virus. The experimental MD was induced in commercial chicks by inoculation with strain MD / 5 and by contact infection with the inoculated chickens. From the affected chickens, feather pulp specimens were chronologically obtained, and examined histologically, immunohistochemically and by using micro-autoradiography.

As a result, focal lymphocytic infiltrations (R-lesions) were observed in the feather pulps of all infected chickens from the early stage. The R-lesions were retained for 6 to 9 weeks after infection. After that, lymphoid cells increased in number rapidly in the feather pulps of some birds, resulting in the formation of tumorous lesions characteristic of MD (T-lesions). This rapid process was associated with the same clinical course as in chickens affected with acute MD. Thus, the lymphomatous lesions in the visceral organs were presumed to be formed rapidly.

The R-lesions were initiated by small lymphocyte cuffings with mesenchymal cell proliferation and network-like production of argyrophil fibers. After that, there was a proliferation of lymphocytes including lymphoblasts with mitotic figures in the cellular lesions. The process of the formation of such R-lesions was similar to that of the ectopic lymphoid areas appearing frequently in field chickens as a result of nonspecific antigenic stimuli. In the initial R-lesions, medium to large lymphocytes had MDV-specific phosphorylated polypeptide in their cytoplasm.

From these findings, it was considered that activated ectopic lymphoid areas having a tumorous nature might be precursory lesions for MD lymphomatous changes.