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Title	LIGHT AND ELECTRON MICROSCOPIC OBSERVATIONS ON THE VISCERAL LESIONS IN MAREK'S DISEASE
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Citation	Japanese Journal of Veterinary Research, 18(2), 97-97
Issue Date	1970-06
Doc URL	https://hdl.handle.net/2115/1957
Type	departmental bulletin paper
File Information	KJ00002369870.pdf



LIGHT AND ELECTRON MICROSCOPIC OBSERVATIONS ON THE VISCERAL LESIONS IN MAREK'S DISEASE

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In order to clarify the character of visceral lymphoid tumors of MAREK's disease (MD), histopathological observations were conducted on 66 cases (3 flocks) with severe outbreaks (acute form) and 17 cases with sporadic outbreaks (classical form). Ten cases of lymphoid leukosis (LL) were also investigated as a control. Electron microscopic observations were made on 16 out of the above 93 cases.

Visceral lesions of MD could be classified basically into two types of lesions (T: neoplastic proliferation, R: response). Furthermore, T type lesions could be subdivided into T_I and T_{II} types. Cells composed of T_I type lesions had a relatively uniform appearance of small lymphoid cells. T_{II} type lesions consisted of pleomorphic lymphoid cells of various sizes and differentiation (small and medium sized, lymphoblastic and hemocytoblastic lymphoid cells) and small numbers of reticulum cells.

Under electron microscopy, nuclear inclusions due to cytoplasmic indentations were frequently seen. The more undifferentiated lymphoid cells had the more numerous polyribosomes in the cytoplasm and had large nucleoli.

Cells composing tumors (hemocytoblastic) in LL had a more uniform appearance, with a large vesicular nucleus and single or double large nucleoli and basophilic cytoplasm.

Intranuclear inclusion like bodies were found by light microscopy in some of the reticulum cells and lymphoid cells in the foci of neoplastic proliferation.

Fine structures of the skeletal muscular lesions of MD were also demonstrated. These lesions were classified into 3 types of lesions (I. Perivascular neoplastic proliferation of lymphoid cells. II. Neurogenic or disuse muscular atrophy. III. Muscular degeneration).

From the results of the present observations, it may be considered that the visceral lesions of MD mainly consisted of the neoplastic proliferation of the lymphoreticular cells originating from the undifferentiated mesenchymal tissues of the extracapillary reticular tissues.