REPORT OF THE AVIAN LEUKOSIS COMMITTEE
AVIAN LEUKOSIS WORKSHOP CONFERENCE
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The workshop addressed itself to the problem of defining the pathomorphologic criteria and guidelines useful in the differential diagnosis of Marek's disease (MD) and lymphoid leukosis (LL) and describing the minimal significant lesions of Marek's disease.

Although some pathologists have recognized MD and LL as distinct syndromes, chickens with lesions typical of these two diseases have until recently been referred to as having lymphomatosis (visceral, neural, ocular). With the unequivocal demonstration of distinct etiology for these two diseases, specific diagnosis becomes mandatory, although it is by no means simple. Fluorescent antibody, other serological techniques or specific histochemical stains may in the future be useful; however, for the present, specific diagnosis must be based on all available information including flock history, signs, gross and micropathology, cytology, and what is known of the pathogenesis.

I. The following were considered the most important diagnostic features.

A. Age at onset of clinical signs:

MD - As early as 4 weeks, more usually any time after 8 weeks.

LL - Only after about 16 weeks.

B. Clinical signs:

MD - Paralysis or paresis when present.

LL - Paralysis or paresis absent.

C. Gross lesions:

MD - 1. Gray eye, not to be confused with genetic coloration.
2. Skin and muscle tumors (lymphoid).
3. Peripheral nerve and ganglia enlargement.
4. Bursa of Fabricius - atrophied or thickened wall.

LL - Bursa of Fabricius tumors, nodular - very small to large.

D. Microscopic lesions (considered diagnostic):

MD - 1. Peripheral nerve infiltration with cells of lymphoid series.
2. CNS - perivascular lymphoid cell infiltrations of the white matter of the cerebellar folia.
3. Skin - follicular patterns of lymphoid cells.

LL - Bursa of Fabricius* - intrafollicular proliferation of lymphoblasts. (In contrast, interfollicular infiltration of pleomorphic lymphotic cells is seen in MD.)

* Many other visceral organs can be involved in both diseases, but their pathomorphology are not particularly useful in a differential diagnosis.

E. Cytology:**

MD - Lesion consists of pleomorphic lymphoid cells with variable cytoplasmic basophilia or pyroninophilia. Occasionally blast cells may be present in large numbers and MD cells have been described.

LL - Uniform lymphoblasts with distinct basophilic and pyroninophilic cytoplasm and having a prominent nucleolus.

** For optimal differentiation, wet fixed smears of fresh tumors are suggested.

II. Minimal lesions in only a few tissues were considered of significance in the early microdiagnosis of Marek's disease.

A. Peripheral nerves: An aggregate of few cells of the lymphoid cells in the endoneurium (similar aggregates in dorsal root ganglia are suggestive but not diagnostic).

B. CNS: Perivascular lymphoid cell cuffs in the white matter of the cerebellar folia.

C. Skin: Lymphoid cell follicles around feather follicles, especially when accompanied by lymphoid infiltration of the cutaneous nerves.

D. Viscera: No attempt was made to describe minimal lesions because of the variable nature, number, and interpretation of the lymphoid foci occurring in the visceral organs.

RESEARCH AREAS

A subcommittee consisting of Drs. Luginbuhl, Purchase, Schmittle, and Cooper suggested the following four areas to receive emphasis in research directed specifically towards the development of measures for the practical control of Marek's disease:

1. The development of sources and supply of host systems defined with respect to genetically determined susceptibility and resistance, and to immunologic and virologic status.

2. Determine more completely the etiology and epidemiology.

3. Further develop and standardize bioassay systems.

4. Study intensively the pathogenesis and the immuno-pathology of the disease.

As prepared by Summary Committee:

B. R. Burmester, B. W. Calnek, C. F. Helmboldt, J. W. Beard