

Marek's Disease

By Lacey Hughett



THE FACTS:

What it is: One of the most common viral neoplastic diseases seen in poultry.

Causative agent: Three species within the genus *Mardivirus*, although only one, *Gallid alphaherpesvirus*, is virulent.

Incubation period: About two weeks, but it can be three to six weeks before clinical signs are evident. The incubation period for this disease is highly variable.

Disease duration: Chronic.

Morbidity: Incredibly high.

Mortality: Once a bird begins showing symptoms, 100%.

Signs: Paralysis, neurological disease, and severe weight loss. Postmortem examination shows tumors and enlarged nerves.

Diagnosis: Done via flock history, clinical signs, postmortem lesions of tumors and enlarged nerves, and cell histopathology.

Treatment: No treatment exists, but severe infection can be prevented with good sanitation and vaccination.

THE SCOOP:

Marek's Disease Virus (MDV) causes tumors and immunosuppression in chickens,

and occasionally turkeys and quail. Infected flocks generally show clinical signs between six and 30 weeks of age; however, the disease can affect older birds as well. Not all infected birds show symptoms but will continue to shed the virus for life.

MDV replicates in the feather follicles of infected birds then is shed via dandruff. After inhalation, it infects immune cells in the lungs. The bird then becomes immunocompromised and susceptible to opportunistic pathogens.

Tumor cells appear in the bird's nerves, spinal cord, and brain, causing the classic signs of Marek's: paralysis in the legs and/or wings and head tremors. Birds rarely recover from this paralysis.

Postmortem examination shows enlarged nerves and diffuse tumor growth, including many internal organs. Tumor cells may infiltrate the eye making the iris appear gray. Birds may exhibit enlarged feather follicles due to tumor cell infiltration of the skin. These eye and skin lesions are rare.

Egg type breeds appear to be more vulnerable than meat type breeds. Silkies are reported to be highly susceptible to MDV.

Diagnosis rules out similar diseases. Diagnosis is based on enlarged peripheral nerves and the presence of tumors, along with microscopic examination of the lesions. Immunohistochemistry and PCR testing can look for MDV antigens. Birds can be concurrently infected with MDV and other tumor-related diseases.

After releasing from feather follicles, the virus can live for years in the dust and litter, so even if all infected birds are gone from an area, the area is still considered contaminated.

Prevention is possible. Raise birds in an "All in, all out" way, thoroughly disinfecting the living area between batches, or move the new flock to a new area. New chicks should ideally have a separate caretaker and be housed in a sanitized area away from any other birds. If this is not possible, then feed, water, and clean the chicks' area and finish with the older birds. Change clothes and shoes and wash hands before caring for the youngest birds.

Ask hatcheries to vaccinate new chicks. Home vaccination is not ideal. The MDV vaccine must be refrigerated and reconstituted, then used in exact amounts no later than two hours post reconstitution. If a sub-optimal dose is administered, the bird will not be effectively vaccinated. The vaccine takes up to a week to begin working.

Vaccination doesn't fully eradicate the disease. Even vaccinated birds can be carriers. Excess virus can overcome vaccination and cause clinical disease. Sanitation reduces the amount of virus in the environment, but vaccination is the best prevention. ●