

Neurological Signs Seen In Coccidal Infections

By
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One of the most frustrating problems in differential diagnosis confronting today's feedlot practitioner are those cases in which signs of central nervous system disorders are involved. Three of the more commonly seen central nervous system diseases, Thromboembolic meningoencephalitis (TEM), polioencephalomalacia, and listeriosis are most likely to find their way into a preliminary diagnosis. Additional considerations would be lead poisoning, rabies, organic insecticide poisoning and brain abscesses.

Recently there have been reported several cases of typical central nervous symptoms associated with clinical infections of *Eimeria zurnii* and *Eimeria bovis*. By its very nature, this phenomenon is not frequently considered in a differential even though it does present a rather typical picture and its diagnosis is a rather simple one.

This condition tends to present itself mostly in lighter feeder cattle, usually under 400 pounds. The first sign seen is usually a diarrhea which may or may not be bloody. Neurological signs seen consist of intermittent clonic convulsive seizures and opisthotonos interposed with periods during which the animal may appear clinically normal except for exhibiting an elevated tail head and tenesmus. Paddling or running movements of the legs are often seen in conjunction with the convulsive seizures. A glycosuria is often observed in affected animals.

A fairly low percentage of the herd is usually involved with the course extending for several days to several months. One or two percent may die each day.

The pathogenesis of the CNS signs associated with coccidiosis is not well known. One theory suggests that an electrolyte im-

balance results from the severe losses of blood and intestinal mucosae following a coccidial attack. This imbalance possibly creates a relative cerebral edema and the subsequent signs. Another theory suggests that a toxemia results from the presence of the coccidia and causes the signs.

No histopathological lesions have been observed in the brains of affected animals other than suggestions of a cerebral edema.

Gross post mortem examination reveals an edematous submucosa in the colon which may be $\frac{1}{2}$ inch thick. The mucosae may be hemorrhagic consisting of both petechial and diffuse hemorrhages. Direct smears from the mucosae reveal large numbers of *Eimeria zurnii* oocysts alone or mixed with other coccidial species.

The diagnosis of this condition is based on the presence of intermittent convulsive seizures, diarrhea, glycosuria, and the demonstration of *Eimeria zurnii* in the feces.

Routine treatment for coccidiosis using both oral and/or parenteral sulfonamide preparations have proven successful in cases which have not become extremely advanced.

There is some interest in a research project at Iowa State involving this problem if the incidence proves high enough to warrant it. Reporting of confirmed cases to the Pathology department would be appreciated.

REFERENCE

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4. Kemp, R. L.: Associate Professor of Veterinary Pathology, Iowa State University. Personal communication.

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