

THIAMIN RESPONSIVE POLIOENCEPHALO- MALACIA IN PIG

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Introduction:

Polioencephalomalacia (Cerebro-Cortical Necrosis) is the softening and degeneration of grey matter of brain. Thiamin responsive polioencephalomalacia is a very common condition among goats in Kerala. This disease is characterized by oedema and swelling of brain with clinical signs of anorexia, depression, circling, blindness, head pressing, hyperesthesia, recumbency, seizures, coma and death. Complete recovery is possible, if the treatment is initiated using Thiamin during the early phase. (Radostits et al. 2000).

Present case deals with a rare occurrence of thiamin responsive Polioencephalomalacia in a pig.

History:

A female pig aged six months was presented to College of Veterinary and Animal Sciences, Pookot with a history of lateral recumbency, anorexia, and nervous signs.

The animal was fed regularly with raw fish waste and owner reported that there was death of another pig in the same herd few weeks back, with similar clinical signs.

Animal was on lateral recumbency and unable to lie down in the opposite direction when turned. On observation there was mild bilateral vertical nystagmus. Twitching of muscles were noticed all over the body, but there was no history of dog bite. Rectal temperature (102 F) was normal but pulse rate (120/minute) was slightly elevated. Mucous membranes were normal in colour (brick red). Peripheral blood smear from the ear vein did not reveal any blood parasite or Pasteurella organisms. Faecal sample was negative for ova of parasites. Based on the history of feeding raw fish waste and typical clinical signs a tentative diagnosis of Polioencephalomalacia was made and treated using Beplex Forte (Thiamin – 100 mg/ml) 3ml I/V and Dexamethasone 2ml (8 mg) I/M

on first day. Neurobion tablet (containing B1, B6, B12) was given orally 12 hours after the injections. Next day, animal showed improvement and stood by itself for sometime. However animal had wobbling gait, head tilt and circling towards one direction. Same treatment was repeated on second day. On third day animal started walking without any abnormalities. Beplex Forte and Neurobion tablet were continued for next two more days. Dose of Dexamethasone was tapered and stopped. Animal had an uneventful recovery on the fifth day of treatment.

Discussion

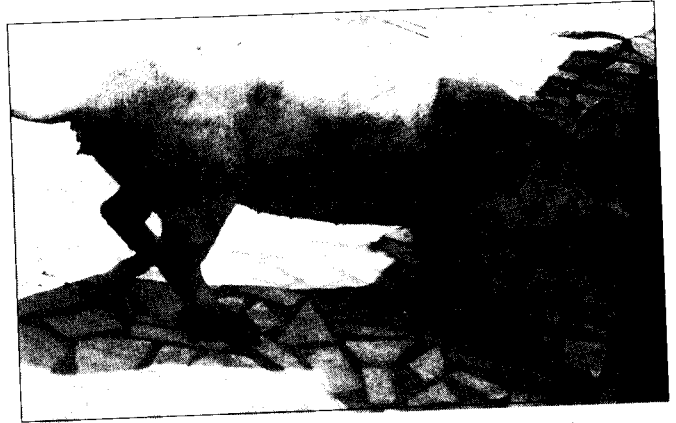
Thiamin is essential for utilization of carbohydrates in the body. Failure of energy metabolism affects neurons and their functions in selected areas of CNS. Depending on the extent of deficiency, lipid synthesis is impaired and damage or degeneration of myelin sheath covering nerve fiber follows and causes increased nerve irritation and pain. If the deficiency continues, paralysis results. (Sardesai, 1998).

Enzyme thiaminase present in raw fish can destroy thiamine in gastrointestinal tract and hence the reason for Polioencephalomalacia in the present case. In pigs, appetite and growth are adversely affected, animal may vomit and have respiratory difficulty. (Mc Donald *et al.* 2002). In the present study, pig showed anorexia but other symptoms as mentioned above were absent. However the nervous signs almost similar to Polioencephalomalacia in goats were observed.

Differential diagnosis includes hepatic encephalopathy, encephalitis, cerebrovascular disorders, lead poisoning etc. Absence of pyrexia and recovery after the thiamin treatment indicated that present case was thiamine responsive Polioencephalomalacia. Thiamin hydrochloride @



Polioencephalomalacia - Before treatment



Polioencephalomalacia- After treatment

10 mg / kg I/V every three hours for a total of 5 treatments will produce a recovery in goats when presented during the initial stages of disease. Oral administration of thiamin is indicated when thiaminase are thought to be in the alimentary tract. Dexamethasone will reduce the brain oedema and degeneration of brain (Radostits *et al* 2000). Same

line of treatment using thiamin and Dexamethasone parenterally followed by oral thiamin tablets were found effective in Polioencephalomalacia of pig. Thiaminase will be destroyed by cooking (Mc Donald *et al.*2002). and hence it is advisable to cook the fish waste before feeding pigs. □

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