

# Encephalitozoonosis in a pet dwarf rabbit.

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## Introduction:

The microsporidian parasite (Protozoa) *Encephalitozoon cuniculi* commonly infects rabbits. Three current forms of this disease are recognized: ocular, neurological and renal. To the author's knowledge, this affections has not been described in Belgium. There are no specific licensed products for the treatment of encephalitozoonosis in pet rabbits. The purpose of this study is to present this clinical case and its control with fenbendazole (Panacur Puppy®).

## Commemorative and clinical description:

An acute head tilt and nystagmus appeared on an adult male Polish dwarf rabbit. A treatment based on antibiotics (enrofloxacin) and corticoids (dexamethasone) was set up. After its purchased 4 years ago, this rabbit regularly showed episodic nasal discharges and sneezing resolving spontaneously. After two weeks of antibiotic treatment with no resolution of the head tilt, the rabbit was examined again in details. The rabbit had lost weight. No eye lesions were noticed and perineum was clean. Ear canals were perfectly clean. Neither skin lesions nor pruritus were seen. General examination was normal. A left head tilt was obvious (Fig. 1), with no nystagmus and a mild ataxia. The rabbit was reluctant to move and was falling when standing up in its cage. There was no evidence of polydipsia. He never had any contact with wild animals. ELISA was performed on blood for the research of *E.cuniculi*: IgM were <1/30 and IgG >1/1000. No spore was visible in urine. Coproscopy showed a suspect structure considered as an encephalitozoon cyst (Fig. 2).



Fig. 1 Head Tilt



Fig. 2 – *Encephalitozoon cuniculi* in faecal material (unstained smear).



Fig. 3 Head tilt resolution

## Treatments and follow-up:

Immediately after the reception of the positive serology for *E. cuniculi*, fenbendazole (Panacur Puppy®) was given orally at a dose of 20mg/kg BW single in day for 28 days. After 2 weeks of treatment, head tilt had completely disappeared (Fig.3) and the rabbit gained weight.

## Discussion and conclusion:

Encephalitozoonosis is common in pet rabbits. Ascending Pasteurellosis is the main differential diagnostic for head tilt in rabbits (Kunstyr and Naumann 1985). Then Antibiotherapy should be set up until diagnosis is confirmed by serology. Renal symptoms are not systematic but in those cases symptomatic treatment should be done. Corticoids can be used in case of neurological signs of acute appearance (Harcourt-Brown 2004). Fenbendazole was chosen here because no side effects were described in rabbits and no parasites were found in the brain after treatment (Suter and others 2001). Furthermore, Panacur Puppy® formulation was the most easy to administer. Encephalitozoonosis usually follows a chronic course. We do not know how this rabbit got infected as its living conditions were the same for more than 3 years. *E.cuniculi* spores are sporadically found in urine, spore excretion in faeces is discussed and could not be demonstrated regularly (Künzel and Joachim 2010). *E. cuniculi* could show a zoonotic potential in immunocompromised patients. Isolates from affected humans in Europe were shown to belong to the same strain as rabbits (Didier and others 1995).

Etiology	Pro	Contra
<i>Encephalitozoon cuniculi</i> (Protozoa/Nosematidae)	Head tilt, ataxia, no effect of antibiotics.	
Toxoplasmosis (Protozoa/Sarcocystiidae)	Head tilt, ataxia, living with cats	Uncommon, usually subclinical, other signs might be present
<i>Psoroptes ovis</i> and septic otitis (Arachnida/Psoroptidae)	Head tilt	No crusty exudate, no head shaking
Otitis interna ( <i>Pasteurella multocida</i> )	History of rhinitis, head tilt	No effect of antibiotics, no ear swelling
Herpes virus simplex	Ataxia	No conjunctivitis, rare
Trauma	Head tilt, ataxia	No history of possible trauma
Neoplasm	Head, tilt, ataxia, weigh loss	Relatively young rabbit
Cerebrovascular accident	Neurologic signs	Young rabbit, no loss of motor functions

Table I – Differential clinical diagnosis

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