

TWO CASES OF LYMPHOID LEUCOSIS IN SNAKES

Twee gevallen van lymfoïde leucose bij slangen

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ABSTRACT

Two Yellow Anacondas (*Eunectes notaeus*) were diagnosed with lymphoid leucosis after a history of anorexia. One snake presented a large tumoral mass in the intestinal wall; the other had several smaller neoplasms in different organs. Reptilian tumors are being diagnosed more frequently in recent decades.

SAMENVATTING

Bij twee Gele Anaconda's (*Eunectes notaeus*) werd lymfoïde leucose vastgesteld. Eén slang had een grote tumor in de darmwand en de andere verschillende kleinere gezwellen in verscheidene organen. Tumoren bij reptielen worden de laatste tientallen jaren frequenter gediagnosticeerd.

INTRODUCTION

Reports of neoplasms in reptiles are becoming more frequent, probably due to more routine examination and the increasing life expectancy of the animals in the last two decades. Cowan (1968) reported 10 animals out of 1249 (0.8%) with tumors and Effron et al. (1977) 27 out of 1233 (2.19%), whereas Hubbard et al. (1983) reported 3.5% (5/143) and Griner (1983) 4.3% (30/690). According to Zwart (1987), reptile tumors involve first of all the digestive tract, secondly the hemopoietic system and thirdly the skin. Done (1996) described 21 neoplasms of the hemopoietic system amongst 156 tumors in snakes (13.5%), but Catao-Dias and Nichols (1999) found only 4.1% of tumors to be of lymphoid and hematopoietic tissues (12/291).

CASE DESCRIPTION

A male Yellow Anaconda (*Eunectes notaeus*), estimated to be 15 years old, had anorexia for several months. On examination the animal, weighing 1.260 kg, was lethargic and presented an abdominal swelling approximately 10 cm cranially of the cloaca. This swelling was oval, firm on palpation and well circumscribed. It was not movable. Radiography revealed a

radiodense intra-abdominal mass of about 5 cm in diameter with a uniform structure. Surgery under general anesthesia was performed and an intestinal wall tumor was removed by enterectomy. Six weeks after the intervention the snake died. At necropsy a peritonitis and intestinal constriction was detected; also renal and hepatic gout was observed.

Two weeks later a second Yellow Anaconda, a female of about 5 years of age and weighing 0.7 kg, died. This animal had shared a cage with the former one. It died with the same history of anorexia. On necropsy, multiple tumoral masses of different sizes (ranging from a few mm to one cm in diameter along the intestinal tract and in the liver) were observed.

Neoplasms of both animals were histopathologically diagnosed as lymphoid leucosis. The tumoral mass of the intestinal wall of the first animal had no lobulated structure, but consisted of a collagen fiber matrix filled with the tumor cells. There was more morphological variation of the nuclei, which appeared either very dark or light and inflated. The hepatic tumoral mass of the second animal was embedded in loose connective tissue and divided with connective tissue septae into several lobuli. An architectural pattern was absent in these lobuli, which measured between 0.5 and 1 cm in diameter and consisted of a monomorphic cell population. The tumoral cells

possessed a pale, large, round nucleus with an obvious nucleolus in some of them. Only little eosinophilic cytoplasm was present. The mitotic count was 0 – 2 per HPF (high power fields). Some apoptotic cells and granulocytes, and several blood vessels were present between the tumor cells.

DISCUSSION

Anorexia is a common symptom in many different snake diseases and was also observed by Finnie (1972) and Frye and Carney (1973) in snakes with lymphoid leucosis. Finnie (1972) found internal tumors in a python with lymphoid leucosis, while Frye and Carney (1973) only detected increased mitotic activity in lymphocytes of a boa with lymphatic leukemia. Both our snakes were suffering from internal tumors.

There is some evidence that oncornavirus of type C, belonging to the *Retroviridae*, is involved in reptilian leucosis (Ippen et al, 1978, Frye, 1981) and inclusion body disease (IBD) in boid snakes (Schumacher et al., 1994). Retrovirus causing IBD might be transmitted by the snake mite *Ophionyssus natricis*, although the route of natural transmission remains unknown (Schumacher et al., 1994). The two anacondas were housed next to a cage with illegally imported Madagascar boas (*Sanzinia madagascariensis*) that had been confiscated. These boas were infested with the snake mite. Although these boas and their cage had been treated thoroughly against the ectoparasites, some parasites could have made their way to the cage with anacondas. So far, none of the boas have been found to have tumors, but a species dependent susceptibility may exist, as suggested by Schumacher (1996) in the case of IBD. In any case, the anacondas originated from two other zoos, where no other cases of lymphoid leucosis have been observed recently. The fact however that (1) boas are less susceptible than pythons, (2) there were no signs of IBD in our pythons, (3) there were no typical symptoms of IBD in the two anacondas and (4) no inclusions were found histologically, makes a retrovirus infection less likely.

ACKNOWLEDGEMENTS

The authors want to thank Prof. Dr. Ducatelle and Prof. Dr. Thoonen for performing and interpreting the histopathology.

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