

## NASAL *NANNIZZIOPSIS VRIESII* GRANULOMA IN AN AMEIVA LIZARD (*AMEIVA CHAITZAMI*)

*Nasaal Nannizziopsis vriesii granuloma bij een ameiva hagedis (Ameiva chaitzami)*

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### ABSTRACT

**Mycotic disease, other than skin lesions, is only rarely reported in lizards (Schumacher, 2003). In this case report, we describe the isolation of *Nannizziopsis vriesii* from a nasal granuloma in an ameiva lizard (*Ameiva chaitzami*) imported from Central America.**

### SAMENVATTING

Mycotische aandoeningen, andere dan huidziekten, werden nog maar heel weinig gediagnosticeerd bij hagedissen (Schumacher, 2003). In voorliggend geval beschrijven we de isolatie van *Nannizziopsis vriesii* uit een nasaal granuloma bij een ameiva hagedis (*Ameiva chaitzami*) die uit Midden-Amerika werd ingevoerd.

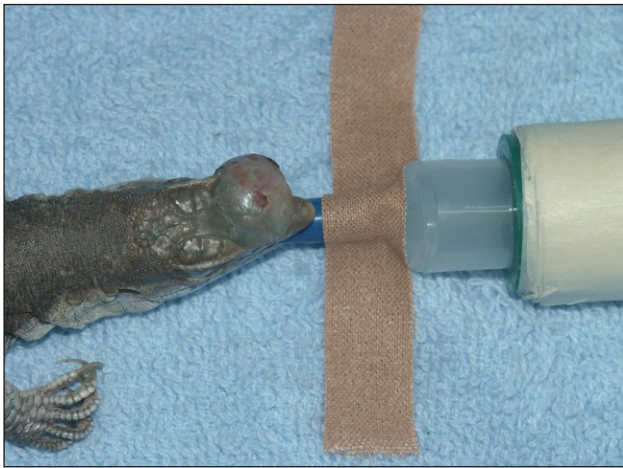
A solitary kept lizard was presented with a 1.5 x 1 cm<sup>2</sup> hard, smooth, non-ulcerated mass covered by skin on the left half of the skull (Figure 1). The housing conditions were suboptimal: no ultraviolet source was available and calcium was not supplemented, despite a diet consisting 100% of insects. The animal had no history of anorexia. At physical examination, the animal was diagnosed with metabolic bone disease as evidenced by severe "rubber jaw", but was on the whole alert. During anesthesia, the mass was surgically removed. This revealed extensive bone destruction of the skull, with destruction of most of the nasal cavity. The animal was euthanized upon the owner's request.

The macroscopically completely excised tissue was fixed in 10% formalin and embedded in paraffin. Sections were stained using hematoxylin eosin (HE) and periodic acid shift (PAS). Histologically, multifocal to coalescing granulomas of 150 µm to 2 mm in diameter were present (Figure 2). They consisted of central liquefactive necrosis surrounded by a rim of epithelioid macrophages, and a

few scattered multinucleated giant cells surrounded by concentrically arranged fibroblasts. In necrotic areas, PAS-positive fungal elements of 10 µm in diameter forming pseudohyphae were present. The inter-granulomatous tissue was diffusely infiltrated by lymphocytes, plasma cells and heterophilic granulocytes. Histological examination of the bone adjacent to the lesion revealed the presence of histiocytic granulomas with proliferation of connective tissue and bone destruction, suggesting an invasive process.

Bacteriologic and mycologic examination revealed a pure culture on Sabouraud agar incubated at 25°C. Macroscopic and microscopic features of the isolates were studied on solid Sabouraud and liquid Sabouraud media incubated at 25°C.

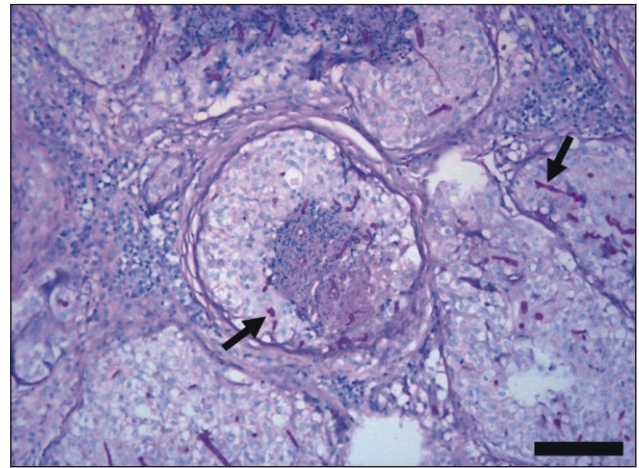
The identification was established on the basis of the Internal Transcribed Spacer DNA sequence, as previously described (Neyra *et al.*, 2005). High homology (99.97 % identity, 325 positions aligned) was found with a sequence previously published for *Nannizziopsis vriesii* (strain



**Figure 1.** Mycotic granuloma on the skull of an *Ameiva chaitzami*. The animal was intubated with a 21 G intravenous catheter for artificial respiration.

CBS 407.71, EMBL access code: AJ131687). The strain is maintained freeze-dried in the BCCM-IHEM collection with the reference number IHEM20860.

This fungus is a saprophytic organism but has been isolated previously from dermatitis in crocodylians (Thomas *et al.*, 2002), chameleons (Pare *et al.*, 1997) and snakes (Nichols *et al.*, 1999; Bertelsen *et al.*, 2005), as well as from lung lesions in a chameleon (Pare *et al.*, 1997). In our case, a highly aggressive lesion was formed, resulting in bone destruction of a large part of the skull. Because the palate was intact, the granuloma probably originated from the nasal cavity or from the skull. The destruction of the skull was probably influenced by the increased vulnerability of the bone due to the underlying severe metabolic bone disease. Together with environmental conditions promoting fungus growth (high humidity and temperatures), the obvious metabolic bone disease might have predisposed for the nasal mycotic granuloma in this lizard. In insectivorous lizards such as this ameiva, metabolic bone disease is most frequently caused by calcium and/or vitamin D<sub>3</sub> deficiencies.



**Figure 2.** Histological section of the excised tissue (Periodic acid shift staining, scale bar = 100 µm). Note the PAS positive fungal hyphae inside granulomatous tissue (see arrows).

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