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The first record of the mite (*Hirstiella* sp.) on a green iguana from Turkey and its therapy with fipronil - a case report

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ABSTRACT

The aim of this case was to document the occurrence of a mite (*Hirstiella* sp.) on a green iguana and therapy to treat it with a 0.25% fipronil spray. Upon physical examination, a number of red mites, erythema, darkness, and itching were observed on the skin of a green iguana and *Hirstiella* sp. was diagnosed after microscopic examination. Treatment consisted of a 0.25% fipronil spray once weekly for three weeks. Fipronil was also sprayed into the cage. Mites were eliminated completely from both the body of the green iguana and its cage after the second application and clinical remission was observed.

Key words: *Hirstiella* sp., fipronil, lizard, Turkey

Introduction

Parasites, especially mites, are well-known causes of dermatological problems in reptiles. Parasitic mites are chiefly ectoparasites of the skin, mucous membranes, or feathers, but a few are endoparasites. Mites are distributed worldwide on both plants and animals and cause direct injury as well as the spread of disease (SCOTT et al., 2001). Mite families of importance to lizards include: *Trombiculidae*, *Macronyssidae* and *Pterygosomatidae* (PETERSON, 2006).

Hirstiella sp. (Acari: Prostigmata: Pterygosomatidae) is a small red mite that lives on the skin of lizards (PETERSON, 2006; HOPPMANN and BARRON, 2007). These mites usually occur in small numbers and cause little blood loss. With a few exceptions, they do not survive long in captivity and show a particular host preference. Mites can be

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found anywhere on the lizard (PETERSON, 2006) and can be very irritating, causing a pruritic response (HOPPMANN and BARRON, 2007). Clinical signs may include anorexia, depression, lethargy, dysecdysis, and severe ulcerative dermatitis (STAHL, 2003).

Mite infestations are generally sufficiently extensive so they can be observed grossly, although small infestations may be difficult to detect (MORIELLO and MASON, 1995). Diagnosis is made by macroscopic and microscopic detection of mites (HOPPMANN and BARRON, 2007). Ivermectin or fipronil may be used for treatment.

The popularity of lizards as pets has increased tremendously in most parts of the world, including Turkey. Green iguanas (*Iguana iguana*) are probably the most popular lizards kept as pets. Readily available, they are also fairly inexpensive, especially when acquired at a small size (50-100 grams). In the present case, the aim was to document the presence of the mite (*Hirstiella* sp.) on a green iguana; this is the first report from Turkey, and its treatment with 0.25% fipronil spray.

Materials and methods

A two-year-old green iguana presented with a history of pruritis. Upon skin examination erythema (Fig. 1), darkness (Fig. 2), itching, and a number of red mites were observed. The cage was also infested with a number of mites.

The mites examined in this study were cleared in hot lactic acid and mounted in Hoyer's solution and then placed in a drying oven at a temperature of 55 °C for a period of at least 12 hours (MONTGOMERY, 1996). Morphological features were confirmed with stereomicroscopic (Fig. 3) and light microscopic (Fig. 4) examinations and *Hirstiella* sp. was diagnosed.

Treatment consisted of topical application of fipronil as a spray at a 0.25% dosage (FrontLine, Merial, Inc. MR), applied once a week for three weeks. The Frontline spray was first applied to the hand of the clinician and subsequently applied over all body parts except the head of the iguana. One minute after this application, the iguana was washed with warm water to remove excess drug. Fipronil was also used in the cage.

Results

Mites were eliminated completely, both on the body of the green iguana and from its cage after the second application, and clinical remission was observed. Itching ended in three days after treatment with fipronil. It was observed that skin lesions recovered on the fifteenth day of initial treatment.



Fig.1. Erythema on the body of infestated iguana with *Hirstiella* sp.



Fig. 2. The dorsal lesions of the iguana



Fig. 4. The light microscopic view of *Hirstiella* sp.



Fig. 3. The stereomicroscopic view of the mite

Discussion

The family of *Pterygosomatidae* parasites live on both old and new world lizards (MONTGOMERY, 1996; STAHL, 2003; PARADES-LEON and MORALES-MARACARA, 2009). The nine genera known to infest lizards include *Cyclurobia*, *Geckobia*, *Geckobiella*, *Hirstiella*, *Ixoderma*, *Pterygosoma*, *Scaphotrix*, *Equisistlana*, and *Zonurobia*. Green iguanas may present with red mites most likely of the genus *Hirstiella* (STAHL, 1998; RAITI, 2000). *Hirstiella* sp. has been reported in lizards from Mexico (CUNLIFFE, 1949), U.S.A (NEWEL and RYCKMAN, 1964), and Australia (WALTER and SHAW, 2002). This case is the first report from Turkey.

Mites of the genus *Hirstiella* are quite different in gross appearance from other genera of scale mites. *Hirstiella* sp. have an elongated body and long legs (MONTGOMERY, 1996). In the present case, morphological features compatible with literature reports were confirmed with stereomicroscopic and light microscopic examinations and *Hirstiella* sp. was diagnosed.

The mites tend to localize around the eyes, under the chin, in the dewlap, axillary, and inguinal areas, on limbs in folds of skin associated with joints, and on the tail (STAHL, 2003). They can cause irritation to the lizards, resulting in a pruritic response (NEWEL and RYCKMAN, 1964). In the iguana in the present case, mites were generally picked up from periocular and dorsal sites and skin examination showed erythema, darkness, and pruritis.

Mites are eliminated through a combination of environmental decontamination and treatment of the reptile with suitable anti-parasitic drugs. Ivermectin, applied topically or parenterally, or fipronil may be used as treatments in lizards. A 0.25% fipronil spray has been used for the treatment of ticks and mites on iguanas and they have determined 78% efficacy against mites. In the present case, use of 0.25% fipronil both on the iguana and in its cage was effective. No special products are available for treatment of reptiles. In the present case, the iguana was washed with warm water after one minute of drug application to remove excess fipronil and no side effects were observed.

This is the first report of *Hirstiella* sp. on a green iguana from Turkey. In conclusion, 0.25% fipronil spray (FrontLine, Merial, Inc. MR) (once a week for three weeks) was an effective and practical choice for the treatment of *Hirstiella* sp. for both green iguanas and their cages.

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SAŽETAK

Svrha je ovoga prikaza prvi put opisati pojavu grinje (*Hirstiella* sp.) na zelenoj iguani i liječenje invazije raspršivanjem 0,25%-tnog fipronila. Kliničkim pregledom ustanovljeno je mnoštvo crvenih grinja, eritem, zamućenje i svrbež na koži. Mikroskopskom pretragom ustanovljena je *Hirstiella* sp. Za liječenje je bio rabljen 0,25%-tni fipronil u obliku raspršivača jednom tjedno tijekom tri tjedna. Fipronil je bio raspršen i po kavezu. Grinje su nestale s tijela iguane i kaveza nakon druge primijene fipronila, a istodobno su nestali klinički znakovi invazije.

Ključne riječi: *Hirstiella* sp., fipronil, gušterica, Turska
