

Managing stomatitis in pet reptiles

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Livia Benato looks at how to spot the condition in reptiles, its cause and a recommended course of treatment

STOMATITIS is an inflammation of the oral cavity. The lesions can be localised or diffuse, involving the dorsal and lateral aspect of the tongue, hard palate and pharynx.

The condition can not only involve the mucous membranes but, in severe cases, also penetrate the underlying tissues.

Snakes, lizards, tortoises and turtles all belong to the class Reptilia and are very popular pets, but are often kept in suboptimal conditions. Stomatitis is a common problem among reptiles, which may lead to anorexia and severe systemic infection if it is left untreated.

Causes

- **Immunosuppression**

Immunosuppression is a common condition in reptiles, and may develop as a result of poor husbandry, poor nutrition, suboptimal vivarium temperature, stress and chronic disease. An immunosuppressed reptile may develop severe oral infection by microorganisms normally present in the intestinal microflora and surrounding environment. Immunosuppression will also produce a poor response to medical treatments.

- **Post-hibernation**

Post-hibernation stomatitis is a common condition in chelonians and is normally due to unhealthy pets hibernated for a long period or at an inadequate temperature. During hibernation, a tortoise's metabolism slows down, which makes it unable to fight off possible infections. Generally, stomatitis is one of the first conditions to develop once the tortoise wakes from hibernation.

- **Trauma**

Trauma of the oral mucosa can result as a consequence of a fall, abrasion against furniture of the vivarium and glass walls, penetration of food or substrate material and bites from live prey. Wounds may then develop secondary bacterial infections. These causes are seen in snakes particularly often.

- **Infectious diseases**

Infectious diseases play a major role in the causes of stomatitis in reptiles. Herpesvirus, *Ranavirus* and gram-negative bacteria are the most common causes of infection. *Aeromonas* species, *Pseudomonas* species, *Salmonella* species, *E coli* and anaerobic bacteria, such as *Bacteroides* species, can also cause severe stomatitis and oral abscesses.

The most frequently isolated fungi include *Aspergillus* species, *Penicillium* species and *Candida albicans*. Some parasites, such as *Trichinella*, can be found in wild-caught reptiles but are unlikely to be seen in general private practice.

- **Acrodont teeth**

Acrodont teeth have no roots and are connected to the jawbone. This is typical dentition in water dragons, bearded dragons and chameleons. These teeth are not replaced during the life of the reptile, thus it is predisposed to periodontal disease, gingivitis and osteomyelitis.

Other common causes of stomatitis are neoplasia, hypovitaminosis, renal disease and sepsis.

Clinical signs

Reptiles with stomatitis are generally presented to the vet because they develop anorexia. The animal is not able to eat because of discomfort, pain and difficulties of prehension and swallowing or – in chronic and severe conditions – because the animal is weak and lethargic.

During the physical examination it is possible to observe soft and firm lumps, abscesses and swelling of the lips at the rostral area of the head. In the case of osteomyelitis or fractures, when pressing gently with a finger, the bone structure appears soft, distorted and painful on palpation.

During intra-oral examination the main clinical signs are diffuse haemorrhages of the oral mucosa,

necrotic tissue, ulcerations, proliferative lesions and white or yellow caseous material. The lesions can be localised or diffuse and can involve every area of the mouth and throat. In bearded dragons it is also possible to pull the lips down to visualise gingivitis and calculi without opening the mouth.

In severe and chronic conditions, oral cavity wounds may progress to osteomyelitis of the head bones. If left untreated, stomatitis can progress and rhinitis and pneumonia may develop as a consequence of necrotic material aspiration from the oral cavity, or cause a systemic infection via the blood.

Diagnosis

A detailed history of husbandry and diet, clinical history and intra-oral examination are often sufficient to make a diagnosis of stomatitis. However, further investigation is advised to check an animal's general health and to confirm or rule out underlying conditions.

To open the reptile's mouth it is often necessary to use a tool, such as a mouth gag, tongue depressor, spatula or even a credit card or guitar plectrum. It is advisable to apply steady, but gentle pressure to avoid further trauma to the teeth and oral mucosa.

When dealing with reptiles with acrodont teeth, extra caution is required to avoid damaging the teeth. A cohesive bandage can be wrapped around a tongue depressor to make it softer.

A blood sample can also be taken for haematological and biochemistry evaluation to assess the general health of the animal and rule out many systemic diseases. A swab, direct smear or biopsy of infected tissue should be taken for cytology and bacteriology. Radiographic examination is generally performed in cases of suspected fractures of the mandibular bones or to evaluate the presence and severity of osteomyelitis.

Other tests, such as CT and MRI, are expensive diagnostic tools, but are an invaluable help when evaluating a trauma.

Treatment

When a reptile is presented for stomatitis it is essential to provide analgesia as soon as possible to relieve its pain and stress. NSAIDs, such as meloxicam, are the treatment of choice. It is also necessary, where possible, to address and treat any underlying conditions.

Unless the stomatitis is mild and very superficial, general anaesthesia should be performed to remove the infected and necrotic material and to revitalise the underlying tissue. The oral cavity can be cleaned and flushed using diluted chlorhexidine or povidone-iodine solution. A topical silver sulfadiazine cream can then be applied daily on the lesions. In the meantime, broad-spectrum parenteral antibiotic and antifungal treatment should be started while waiting for culture and

sensitivity results.

Reptiles that suffer from stomatitis are generally dehydrated and anorexic, so these two problems need to be address as well.

Fluid therapy can be administrated easily via an oral solution – using a crop tube or, alternatively, via a subcutaneous route, although it sometimes can be limited due to the small subcutaneous space present in reptiles.

The easiest way to rehydrate a sick reptile is by bathing it in shallow warm water for 15 minutes a few times a day. Reptiles often drink and absorb water from the cloaca. In tortoises and lizards, it is also possible to administrate fluids via the intraosseous route.

Nutritional support can be started once the animal is wellhydrated using supportive care products such as Oxbow Critical Care and Hill's a/d. The Hill's product is generally available in most private practices, but is not advisable for long-term use as a treatment. This is because it contains a high level of purines that, in reptiles, can eventually cause renal problems. A crop tube or a long plastic tube attached to a plastic syringe can be used to administer the product. This system can also be used for the administration of any oral medical treatments.

Prevention

Several measures can be undertaken to prevent stomatitis in reptiles. When a client wishes to buy or rehome a new reptile, a health check and health screening should be strongly advised to rule out any possible underlying and asymptomatic diseases that might develop or be transferred once the reptile is in its new environment. Quarantine should also be considered if the animal will be added to a pre-existing collection of reptiles.

The reptile's management, cleaning and diet are also important to prevent immunosuppression and infectious diseases. Owners and veterinary surgeons should be aware of the optimal reptile temperature. Books and specialists should be consulted if there are any doubts regarding husbandry and feeding. To avoid post-hibernation stomatitis in chelonians, pre and post-hibernation health checks should be performed to evaluate the physical condition of the animal and to perform a faecal examination.