



CASE REPORT

Necrotic stomatitis and haemorrhagic enteritis in an Indian rock python

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Özet

Balasundara KR, Naik SG, Javaregowda AK, Eswarappa SB, Revanna SP, Devaraj M. Hindistan kaya pitonunda nekrotik stamatit ve hemorajik enterit. **Eurasian J Vet Sci, 2012, 28, 1, 60-63**

Piton dünya üzerindeki en büyük yılanlardan biridir. Hayvanat bahçelerinde yetiştirilen bir Hindistan kaya pitonu başın ön kısmında şiddetli yaralanmalara maruz kalmıştır. Alt çenenin heriki tarafındaki gingival mukozada kronik stomatit belirgindi. Sol üst çenenin yan tarafında kronik nekrotik reaksiyonu andıran çeneden sarkan soyulmuş deri parçası belirlendi. Sindirilmiş yiyecek bulunmayan midede kataral eksudat ve hafif ödemli gastrik ülserler gözlemlendi. İnce barsaklar boyunca peteşiyal kanamalar, nekrotik odaklar, villuslarda atrofi gözlenirken, kalın barsakta nematodlar belirlendi. Akciğerlerde kataral köpüklü içerik vardı ve mikroskopik olarak septal kalınlaşma, konjesyon, kanama ve ödem gözlemlendi. Mide ve barsakların histolojik incelemesinde kriptlerde epitel soyulma ve konjesyon belirlendi. Karaciğerde hepatit, haemosiderosis ve safra kesesinde proliferasyon ile karakterize portal fibrosis gözlemlendi. Postmortem muayenede ölüm sebebi olarak kronik nekrotik stomatit, pnömoni ve nekro-hemorajik enterite bağlı genel sistemik bozukluk olarak karar verildi.

Abstract

Kavitha Rani B, Naik SG, Ananda KJ, Shambulingappa BE, Patel SR, Devaraj M. Necrotic stomatitis and haemorrhagic enteritis in an Indian rock python. **Eurasian J Vet Sci, 2012, 28, 1, 60-63**

Pythons are one of the largest snakes in the world. The Indian rock python bred in zoological garden had suffered from grievous injury on the frontal area of the head was received. A chronic stomatitis was evident with grayish lesions on either side of the lower jaw on the gingival mucosa. The lateral side of the left upper jaw showed partially sloughed skin of the lips hanging from the upper jaw indicating a chronic necrotic reaction. The stomach devoid of ingesta had catarrhal exudate and gastric ulcerations with mild edema. Throughout the small intestine there were petechial haemorrhages and necrotic foci, villous atrophy and the large intestine harboured several nematodes. Grossly, the lungs had catarrhal frothy contents, and microscopically showed alveolar septal thickening, congestion, haemorrhages and edema. Histological investigation of the stomach and intestine indicated epithelial sloughing, congestion, catarrh and bacillary population embedded in the crypts. Liver had focal hepatitis, haemosiderosis and portal fibrosis with biliary proliferation. The post mortem investigation revealed that the cause of death was generalized systemic disease due to chronic necrotic stomatitis, pneumonia and necro-haemorrhagic enteritis.

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Pythons are one of the largest snakes in the world which belong to the order *Squamata*, and Sub-order *Serpentes (Ophidia)*, which have approximately 2920 types of snakes. Two species of pythons are found in India (O'Malley 2005). The Indian rock python lives in scrub forests and dense jungles throughout the country, and Royal python found in the north-east India and the Nicobar Islands. Indian rock python (*Python molurus molurus*) is considered a rare and an endangered species. *Python molurus molurus* is a large nonvenomous python species found in many tropic and subtropic areas of Southern and Southeast Asia especially India, Nepal, Bangladesh, Pakistan and Sri Lanka (Anonymous 2011a).

The Indian rock python maintained in captivity was aged about 7 years and had sustained injuries on the head. The history revealed that the snake was anorexic, dull and lethargic for approximately 3-4 months before death, since the injury on the head. The reptile was subjected to a detailed post mortem examination. A lacerated wound was seen on the frontal region of the skull, which had healed partially showing induration. Few scales on the nasal bridge had peeled exposing the underlying pale new scales. This observation points towards a fairly recent ecdysis. Several puncture wounds were seen on the abdominal area and the distal part of the body, especially on the ventral side. A ventral median incision was put all along the length of the body on one side of the gastropages. The subcutaneous tissue was pale and there were few lacerated wounds in the distal abdominal region, indicating the punctures probably caused by broken twigs or thorns and other penetrating natural habitat. Gingivitis and stomatitis was evident in the oral cavity on either side of the teeth of the lower jaw and the upper jaw on the left side. The most prominent lesion evident was found on the outer aspect of the upper jaw, where a part of the upper lip had detached itself. The epithelial slough in the upper jaw measured about 2.5-3 cm (Figure 1), was firm and hard to touch



Figure 1. The left upper lip showing an epithelial slough with crusts in the python.

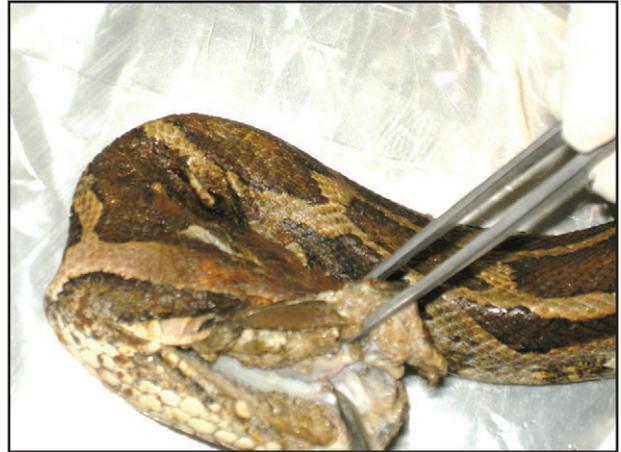


Figure 2. The oral cavity showing chronic stomatitis with dry crusty lesions on the lower and upper gums.

and had separated from the surrounding skin of the upper lip. The gums of the lower jaw showed several indurated projections on either side of the teeth. The gingival mucosa was pale to gray-brownish in color, indicating a case of chronic stomatitis (Figure 2). The heart was filled with blood in both the atria had areas of infarction at the apex, petechiae on the epicardium, on the right side of the ventricle and on either side of the coronary groove. The wound on the head suggests an accidental physical onslaught, which was not sufficient to cause death instantaneously. The impact might have been enough to cause injury to the gingival and buccal mucosa from its own teeth. The existence of chronic stomatitis suggests the presence of the oral ulcerations for prolonged period of time. Usually, the process of wound healing is slow in reptiles especially snakes. It becomes faster at the time of ecdysis on account of increased proliferative activity in the dermis and epidermis, which promotes better healing (O'Malley 2005). Several records also describe that ulcerative stomatitis occurs as a response to stress, such as internal and external parasitism, trauma or poor nutrition which suppress the immune system in reptiles (Mader 1996). There can be gingival edema, necrosis, erosions of the lining mucosa and yellow-whitish-gray lesions adherent to the gums. Traumas to the nose or mouth areas are a frequent cause of mouth infection (Anonymous 2010).

The gastro-intestinal tract showed several lesions indicative of gastro-enteritis. In the stomach, there was no digesta and had mucoid content. The pyloric region showed presence of several small ulcers with raised hyperaemic borders, and a few already healed. The linear rugae of the gastrium were edematous and congested. The small intestine showed extensive petechial haemorrhages with catarrhal exudation and necrotic mucosal surface (Figure 3) devoid of digesta. The large intestine had a small quantity of putrefied pasty dark digesta in which several nematode parasites were found. The python showed extensive petechial haemorrhages, ulcerations and necrotic foci

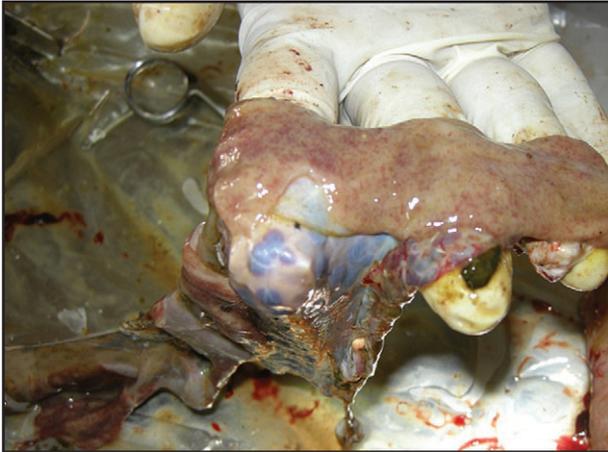


Figure 3. The mucosal surface of the small intestine showing catarrhal enteritis with petechial haemorrhages.

on the mucosa throughout the small intestine. The enteric haemorrhages indicated an inflammatory reaction, evident as necrotic mucosa, villous atrophy and desquamation of lining epithelial cells. Histological investigation of the stomach and intestine indicated epithelial sloughing, congestion, catarrh and bacillary population embedded in the crypts (Figure 4). It has been documented that the intestinal lining can inflame because of ingestion of the necrotic material that is broken off from the plaques of lesions on the ulcerative stomatitis, induce ulcerated necrotic enteric lesion, facilitating the organisms to invade the blood causing a septicemic effect (Anonymous 2010). It has been documented that rough, leathery and severely haemorrhagic mucosal lesions can be seen in heavy nematode infestations in reticulated pythons (Taiwo et al 2002). It has to be noted that a few adult round worms were found in the large intestine in the present case. The haemorrhages could have been induced due to parasitic larval migration in the intestinal wall (Taiwo et al 2002, Sahoo 2007) and/or a possible concurrent infection with intestinal bacteria. Similar lesions of degenerations and cellular infiltra-

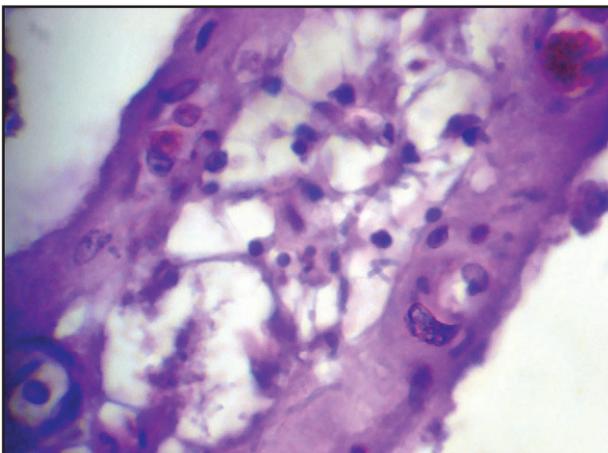


Figure 4. Section of small intestine showing villous atrophy, congestion (Black arrow) and numerous bacilli (White arrow) in the submucosal space. H&E, 1000x

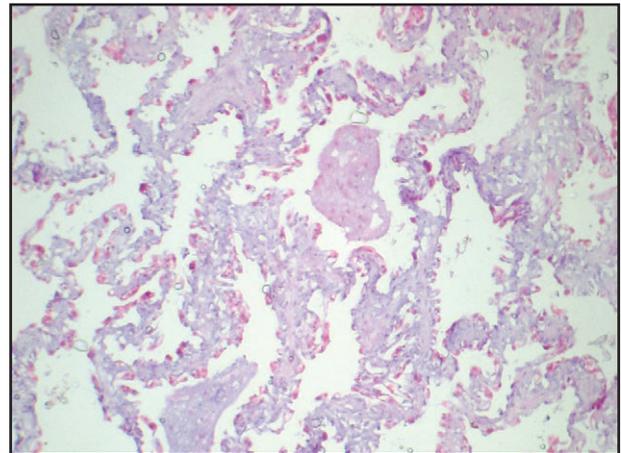


Figure 5. Section of lungs showing pneumonia with haemorrhages, edema and mucoid exudation (Black arrow). H&E, 50 x.

tion in the intestinal tract were reported by Sahoo et al (2007) and Pandit et al (2010).

Grossly, the lungs had catarrhal frothy contents extending into the distal part of trachea, and microscopically showed alveolar septal thickening, congestion, haemorrhages and focal edema (Figure 5). It has been documented that aspiration of bacteria from stomatitis infection can cause infections of the respiratory tract viz., pneumonia (Anonymous 2011b). Respiratory infections can be common in snakes and can be a consequence of mouth rot (Anonymous 2010).

The kidneys were apparently normal in size but showed areas of paleness in the cortex. There were a few focal pin-point necrotic areas in the liver which was congested. The gall bladder was distended with bile, supporting the observation that the reptile was anorexic for quite some time. Liver had focal hepatitis, haemosiderosis, hydropic degeneration and portal fibrosis with biliary proliferation (Figure 6).

The heart blood smear examination by Gram's staining technique (Luna 1960) revealed numerous regular rods found dispersed among the degenerating red

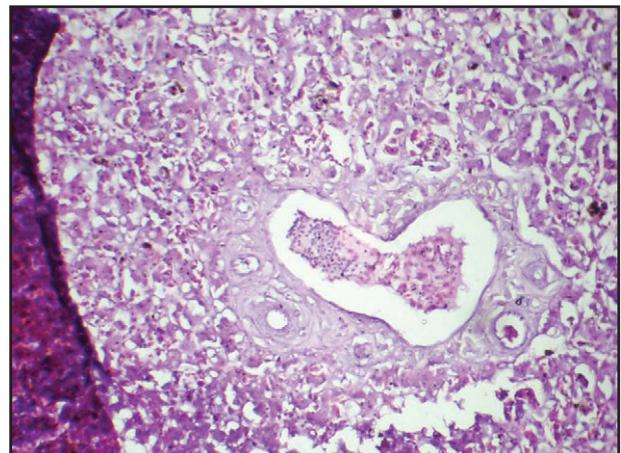


Figure 6. Section of liver showing portal fibrosis, congestion, haemosiderosis (black arrow) and mild hydropic degeneration. H&E, 50x.

blood cells, which showed anisocytosis and polychromasia. Several heterophils were found with basophilic cytoplasm and vacuolations, indicating a toxic change. These observations are suggestive of anemia and a systemic disorder (Reavill 2005). *Aeromonas* is among the bacteria implicated as the classical causative agent of infectious stomatitis, pneumonia and septicemia in snakes (Reavill 2005), several others like *Pseudomonas*, *Salmonella*, *Klebsiella* and *Mycobacteria* have also been listed as the causative agents for mouth rot in snakes (Anonymous 2011b).

The sense of pain generated by chronic stomatitis would have reduced the feeding capacity of the reptile, leading to stress due to starvation, and onset of weakness. Generally, the passive reptiles like the pythons have a lower metabolism and can shut out the gastro-intestinal metabolism for months together between each feed in order to conserve energy (O'Malley 2005).

The above observations suggest a chronic case of stomatitis as the probable cause of septicemia. Together with necro-hemorrhagic enteritis and pneumonia, the inanition was sufficient to cause death in the Indian rock python. The presence of nematodes might have contributed for immunosuppression and stress in the python, thus increasing the susceptibility for a systemic manifestation. Reptiles, in fact most exotic species, do not show signs of illness until the disease or infection is quite advanced, the only symptom may be loss of appetite. It is to be noted that early diagnosis of mouth rot and administration of antibiotic therapy is essential to prevent systemic disturbances and fatality.

► Acknowledgements

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