

# URATE NEPHROSIS AND GOUT IN A BLUE-TONGUE LIZARD (*Tiliqua scincoides scincoids*) (CASE 811.1)

## CASE HISTORY

Juvenile male Blue-tongued lizard (*Tiliqua scincoides scincoides*) with hind limb paresis. White speckles were evident under the lingual mucosa, and the lumbar spine appeared flat. Euthanasia was elected due to the likelihood of visceral gout and a poor prognosis.

## GROSS PATHOLOGY

**External findings:** Miliary white foci are evident beneath the lingual mucosa.

Hydration, Muscle mass normal; Fat deposits: absent

**Internal findings:** Small white granular foci are present within the lingual mucosa. White chalky material fills all joint spaces examined, including intervertebral spaces. 2 - 3 mm white foci coat the epicardial, hepatic, and intestinal surfaces. The spleen is diffusely white, even on cut section. The kidneys are small, firm and diffusely white. The testes appear large (11 mm x 4 mm) compared with the animal's body size.

## HISTOPATHOLOGY

Large numbers of tophi are present throughout the parenchyma of all organs. These tophi are characterised by central eosinophilic fibrillar material, which bears the negative impression of radiating spicules, surrounded by flat mononuclear cells and multinucleate giant cells. Granulocytes are evident within the centre or margin of occasional tophi. Many blood vessels have hypereosinophilic walls and contain erythrocytes that have a "washed out" appearance (euthanasia artefact).

**Kidney:** The renal interstitium appears distended by oedema, increased quantities of fibrous tissue, and moderate numbers of heterophils. Large portions of the renal parenchyma have been displaced by expansive and occasionally coalescing tophi. Scant glomeruli are visible in section and it is assumed that many glomeruli have been replaced by tophi. The single visible intact glomerulus in section is shrunken, has a hypereosinophilic glomerular tuft and is surrounded by 2 - 3 cell layers of mature fibrous tissue.

**Spleen:** The entire splenic parenchyma has been replaced by tophi, leaving only fibrous tissue septa and the splenic capsule intact.

**Testicle:** Spermatogenesis is not evident within spermatoc cords. Tophi are not evident within this tissue.

Case interpretation: Karrie Rose; Photography and case construction: Damien Higgins

**Heart:** Large tophi are evident within the adventitia of the greater vessels, throughout the epicardium, within one of the valves, and within the ventricular myocardium.

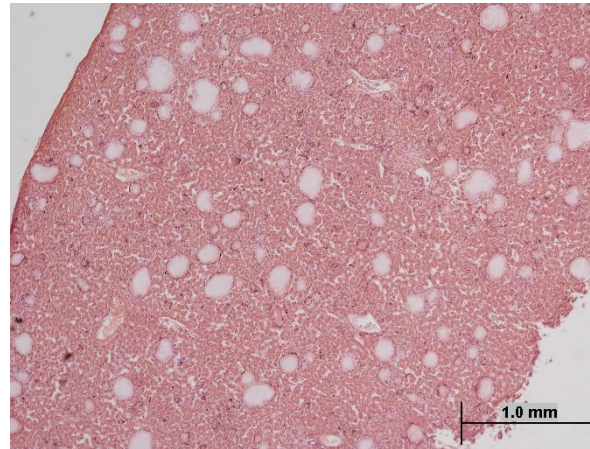


Fig 1. Liver H&E 4x

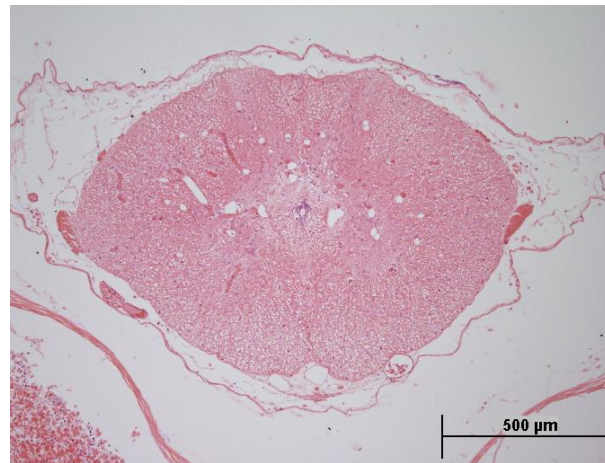


Fig 2. Transverse section spinal cord. H&E 10x

## MORPHOLOGICAL DIAGNOSIS

Euthanasia

Visceral and articular gout

Subacute to chronic interstitial nephritis and glomerular sclerosis

## COMMENTS

The lizard has a remarkable case of gout, which is most likely the result of chronic renal disease. The lizard's limb weakness may be explained by urate tophi within the perivertebral tissues, which may have impinged spinal nerves. Urate tophi create cavities within the parenchyma of organs (Fig 1). Crystals are refractile using polarized light, but are dissolved by formalin fixation, allowing them to be distinguished from other polarizing renal crystals, such as oxalate. Fixation of tissues in ethanol permits examination of the crystals by use of polarized light or special stains such as MeAg (Fig 3 a-d).

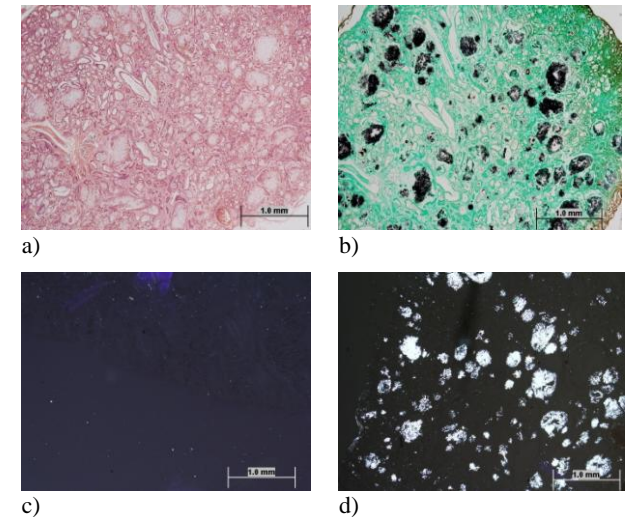


Fig 3. Kidney x4 a) H&E; b) MeAg stain, ethanol-fixed tissue; c-d) tissues examined under polarized light illustrating absence of crystals in formalin-fixed tissue (c) and birefringent quality of crystals in ethanol-fixed tissue.

## REFERENCES

<http://www.anapsid.org/diverskidney.html>

<http://www.anapsid.org/kidney.html>

MADER, D.R. Gout. Mader, Douglas R. (ed.) Reptile Medicine and Surgery. W.B. Saunders Co. Philadelphia, PA. 1996. ISBN: 0-7216-5208-5.