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## Visceral gout in ducks

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### Abstract

In this case report, three ducks were brought for postmortem examination and postmortem examination revealed deposition of chalky white material covering the pericardium, liver and enlarged kidneys with necrotic foci and nephrosis. Urate crystals formed stones in the dilated ureter. Histopathologically, kidney showing severe glomerular and tubular degeneration and necrosis and central gouty deposition surrounded by radiations of needle like urate crystals surrounded by inflammatory cells. Gout in ducks might be attributed to high concentration of protein and calcium in diet.

**Keywords:** Visceral gout, ducks, histopathology, kidneys, Urater.

### Introduction

Gout is one of the important disorder associated with kidney damage in birds caused by multifactorial etiology. High levels of proteins and calcium causes excess uric acid production (Li *et al*, 1998, Ibrahim *et al*, 2010) [4, 2] and damage kidneys (Khan and Alden, 2001; Guo *et al*, 2005) [3, 1]. Birds are uricotelic and lack uricase which is essential for conversion of uric acid to less harmful substances. Impairment of kidney function results excessive accumulation of uric acid in tissues. Uric acid itself is not toxic but precipitated crystals can cause severe mechanical damage to tissues. The present case report describes pathological investigation of visceral gout in ducks.

### Materials and Methods

Dead ducks were brought for postmortem examination. Postmortem examination was conducted and tissue pieces from affected kidneys were fixed in 10% neutral buffered formalin prior to processing. After overnight washing in running water and dehydration in ascending grades of alcohol, the tissue was embedded in paraffin and 5 micron thick sections were cut and stained with haematoxylin and eosin (H & E) as per the method of Luna (1968) [5] and examined under light microscope for the tissue changes.

### Results and Discussion

Postmortem examination revealed deposition of chalky white material covering the pericardium, liver and enlarged kidneys with necrotic foci and nephrosis (Fig.1, 3). Urate crystals formed stones in the dilated ureter (Fig.2, 3). Histopathologically, kidney showing severe glomerular and tubular degeneration and necrosis (Fig.5) and central gouty deposition surrounded by radiations of needle like urate crystals surrounded by inflammatory cells (Fig.6). Gout in present case study might be attributed to high concentration of protein and calcium in diet.



**Fig 1:** Deposition of chalky white Urate crystals on pericardial sac and liver.



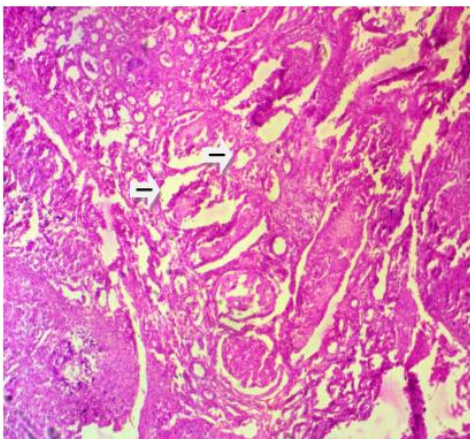
**Fig 2:** Deposition of Urate crystals on heart.



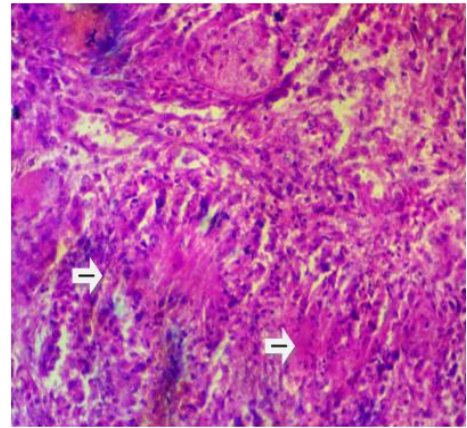
**Fig 3:** Urate crystals deposition in ureter and kidney.



**Fig 4:** Stones in the dilated ureter.



**Fig 5:** Section of kidney showing severe glomerular and tubular degeneration and necrosis (arrows).H&E



**Fig 6:** Section of kidney showing mononuclear cell infiltration in the interstitial tissue with interstitial

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