

## Crystaluria and Nephropathy in a young DSH Cat

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A 2 year old castrated male DSH cat was referred to a private veterinary hospital with intermittent urethral obstruction and haematuria. Due to re-occurring urethral obstructions a penis amputation had been performed previously. Several urine samples obtained by catheterisation were submitted to the lab for urinalysis (Table 1). In addition, small calculi were removed from the urethra and also submitted for analysis. The patient had no history of previous medication.

A serum CBC and biochemistry panel submitted at week 14 revealed a marked azotemia (Table 2) but was otherwise unremarkable. An ultrasound examination revealed small uroliths in the renal pelvis, but no calculi were detected in other part of the urinary tract.

**Table 1:** Results of urinalyses

	<b>Week 0</b>	<b>Week 14</b>	<b>Reference range</b>
<b>Colour and transparency</b>	light yellow, turbid	light yellow, turbid	
<b>Specific gravity</b>	1.016	1.018	1.020-1.060
<b>Dipstick:</b>			
<b>pH</b>	6	7	6-7
<b>WBC</b>	positive +++	positive +++	negative
<b>Nitrite</b>	positive +	negative	negative
<b>Protein (SSA-method)</b>	positive ++	positive +	trace
<b>Glucose</b>	negative	negative	negative
<b>Ketones</b>	negative	negative	negative
<b>Urobilinogen</b>	normal	normal	normal
<b>Bilirubin</b>	negative	negative	negative
<b>RBC</b>	positive ++++	positive ++	negative
<b>Sediment:</b>			
<b>Quantity</b>	increased	increased	
<b>RBC</b>	>10/HPF	negative	
<b>Leukocyte</b>	>10/HPF	>10/HPF	
<b>Crystals</b>	*	*	
<b>Transitional epithelial cells</b>		1-2/HPF	
<b>Bacteria</b>	abundant rods**	abundant rods***	

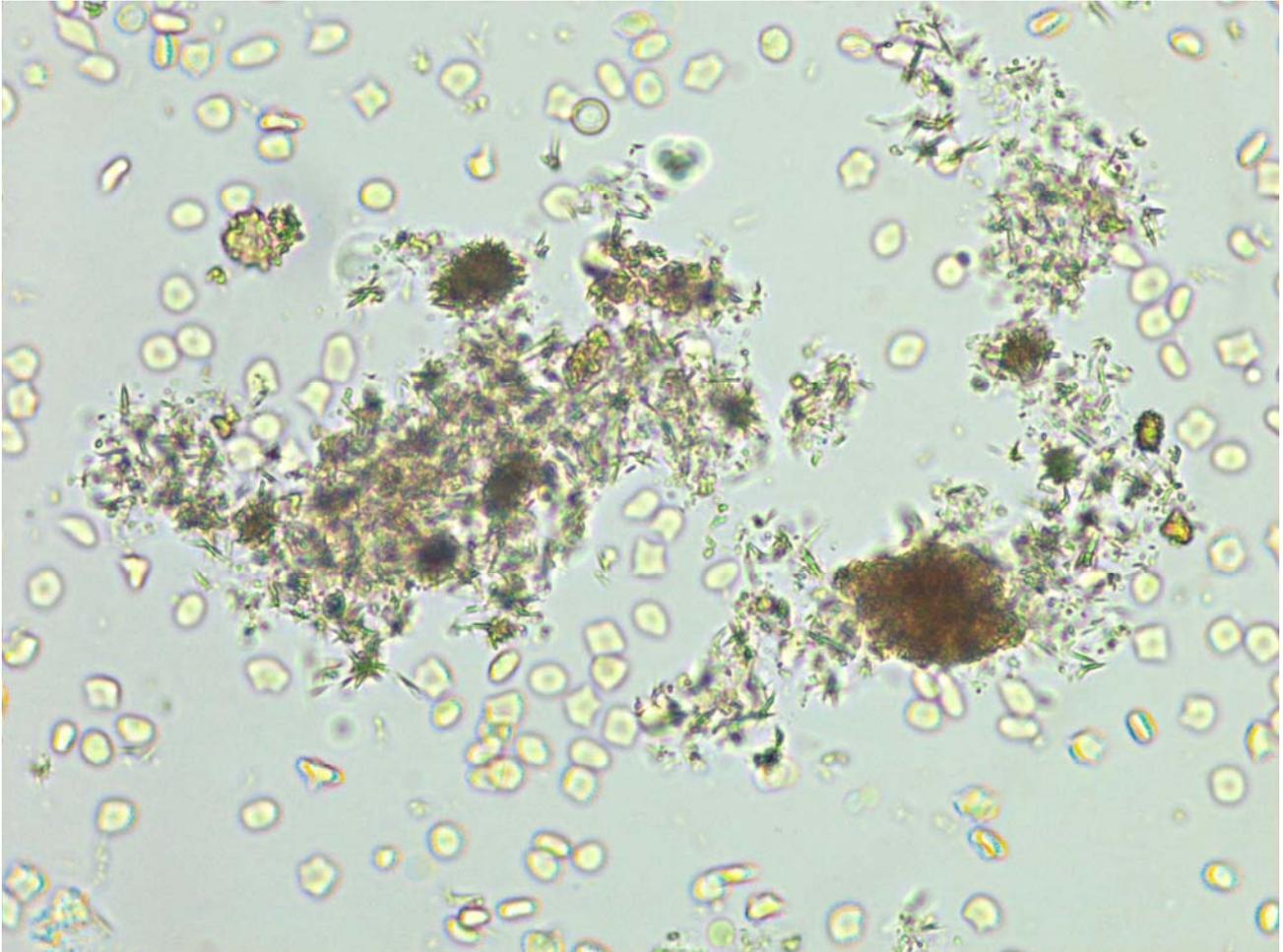
\* Masses of yellow-brownish, amorphous to needle-like crystals (Fig. 1, Fig. 2)

\*\* Bacterial culture revealed *Pseudomonas aeruginosa*.

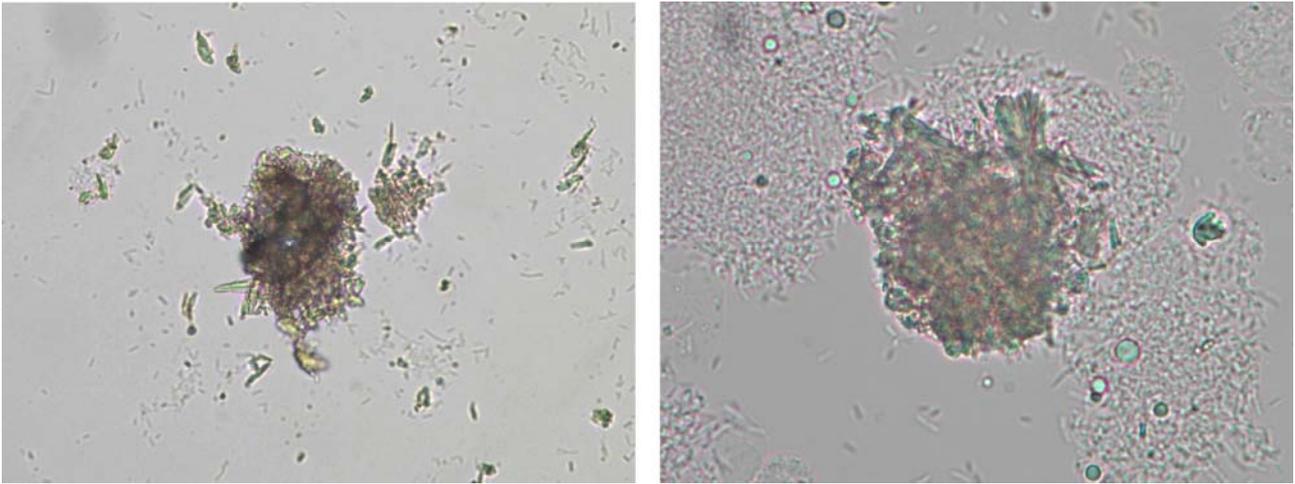
\*\*\* Bacterial culture revealed *Pseudomonas aeruginosa* and *Bacteroides fragilis*.

**Table 2:** Serum biochemistry findings

	<b>Week 14</b>	<b>Week 28</b>	<b>Reference range</b>
<b>Urea (mmol/l)</b>	28.9	37.6	3.3 - 13.7
<b>Creatinine (<math>\mu\text{mol/l}</math>)</b>	335.9	459.7	< 141.4
<b>Phosphorus (mmol/l)</b>	1.2	3.1	0.8 - 1.6
<b>Uric acid (<math>\mu\text{mol/l}</math>)</b>	11.9	35.7	< 59.5



**Figure 1:** Photo of the first sample submission with crystals and haematuria (40x, unstained sediment)



**Figure 2:** Urine sediment from the same cat (week 14, left: 40x, right; 60x, unstained)

**Questions:**

- What type of crystals were present in the sediment?
- Why/how do they arise?