

# December 2013 Case of the Month

# Signalment and History

- A 10 month old female bearded dragon named “Pancake” presented for a 3 week history of inappetence, drinking less, lethargy, constipation, and swelling and stiffness in the left rear leg. An aspirate was done on the subcutaneous tissue around the tibial-tarsal joint on the left rear leg.

# Image 1: Cytology sample on 20x objective

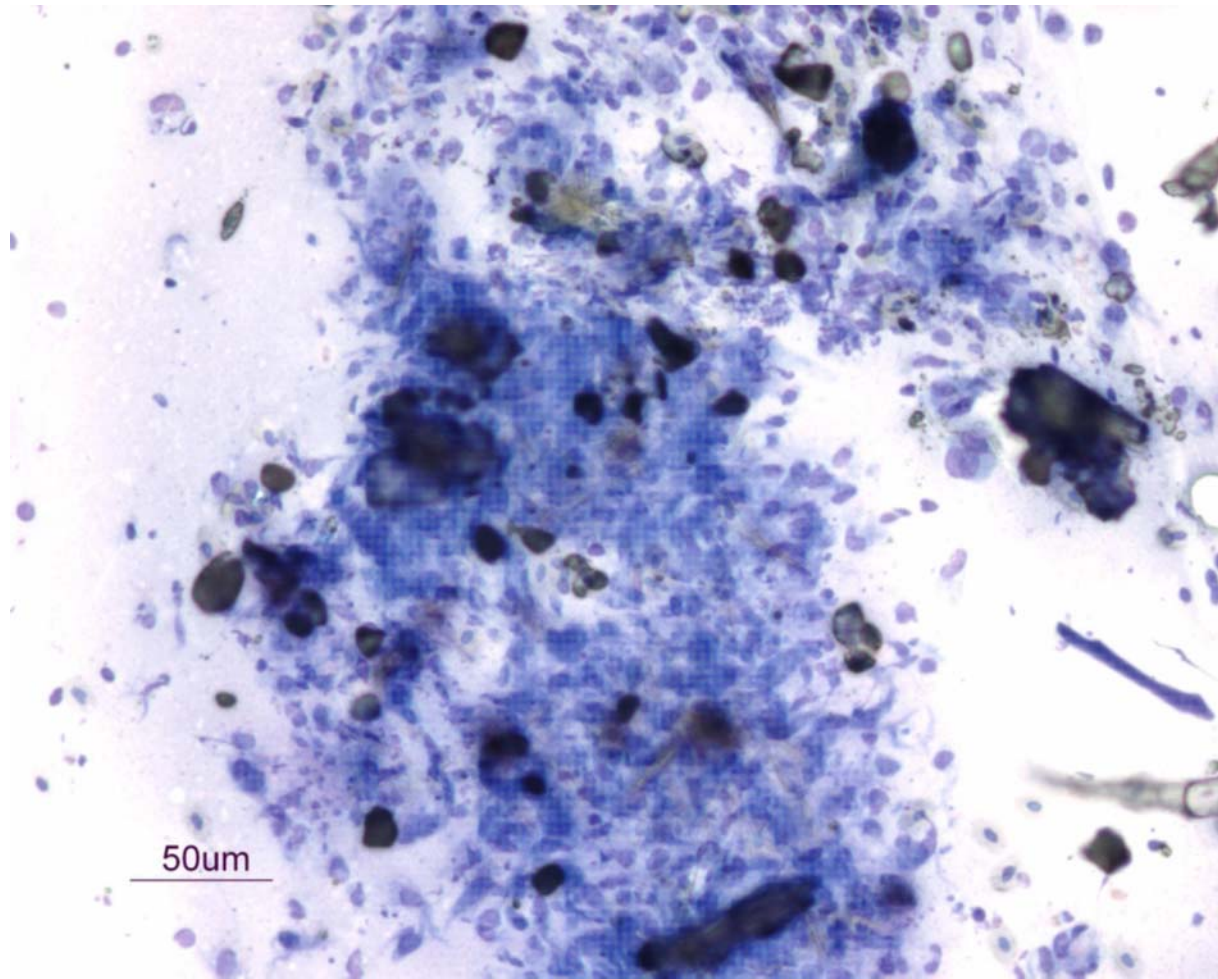
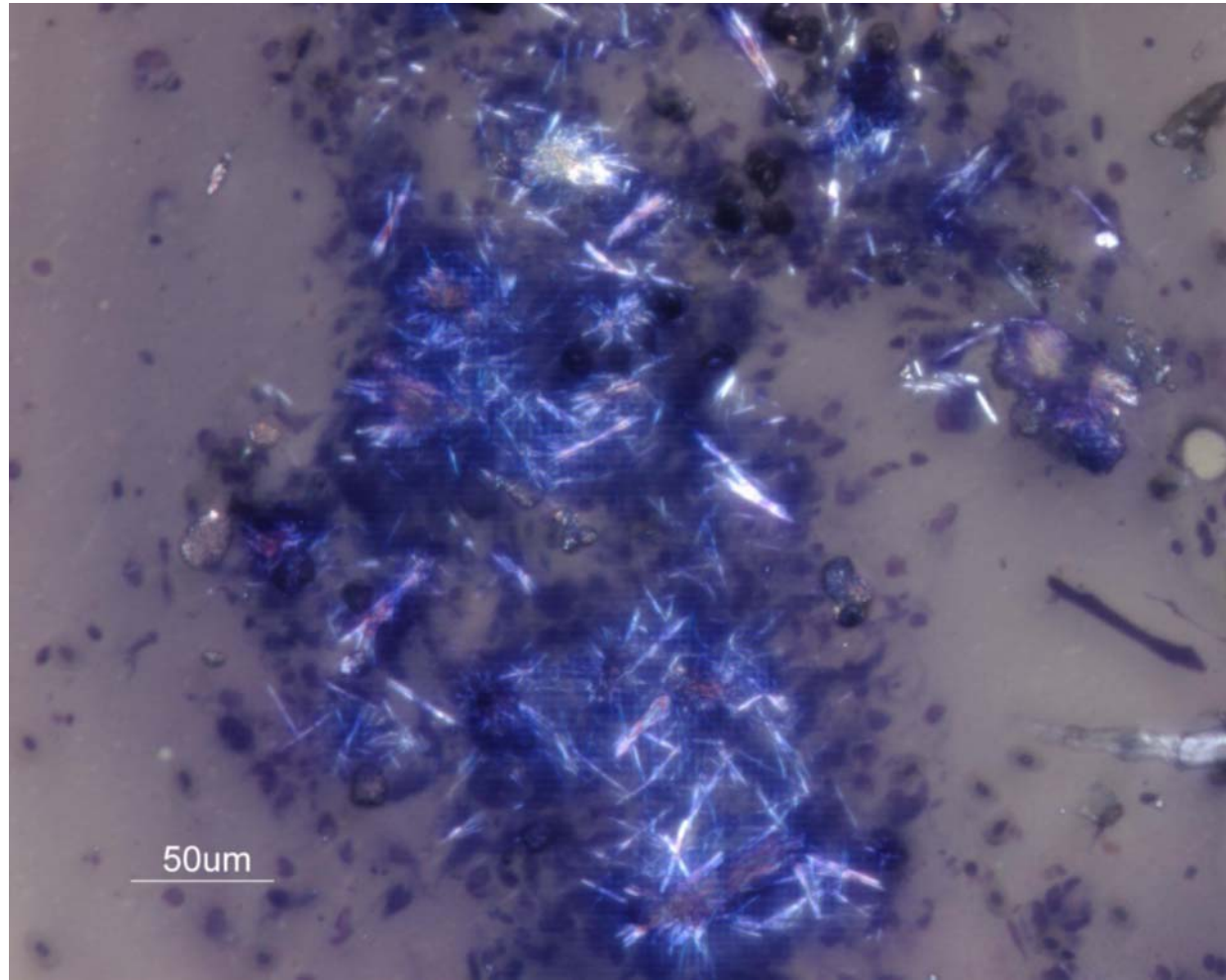


Image 1: Same preparation viewed with polarizer, 20x objective



**What is your interpretation of the cytologic findings? What diagnostic tests would you do next?**

Interpretation of cytology:

The preparations (4) vary in nucleated cellularity. The most cellular sample has high nucleated cellularity, frequent lysed cells and erythrocytes and a pale blue background. Frequent needle shaped, birefringent crystals (consistent with monosodium urate) are scattered throughout the preparation. Many cells are lysed. Identifiable nucleated cells consist primarily of spindle cells and multinucleate giant cells. No organisms are seen.

- Comment: **The presence of monosodium urate crystals is diagnostic for gout.**
- Opinion: **Articular gout**

• Biochemistry panel done after cytology:

- **ALB**      **2.5 g/dL H**      **1.5 - 2.2**
- **ALKP**      **106 U/L**
- **ALT**      **3 U/L**
- **AST**      **9 U/L L**      **16 - 73**
- **Ca**      **14.9 mg/dL**      **9.2 - 15.6**
- **CHOL**      **272 mg/dL**
- **CK**      **671 U/L**
- **GLU**      **161 mg/dL H**      **90 - 127**
- **LDH**      **169 IU/L**
- **PHOS**      **3.9 mg/dL**
- **Potassium**      **5.6 mEq/L**
- **Sodium**      **136 mEq/L**
- **TP**      **10.2 g/dL H**      **4.2 - 7.1**
- **URIC**      **35.9 mg/dL H**      **2.8 - 9.9**
- **GLOB**      **7.7 g/dL H**      **2.7 - 4.9**
- **A/G Ratio**      **0.3 L**      **0.4 - 0.7**

Summary and discussion:

The presence of the needle shaped, birefringent crystals (monosodium urate crystals) is diagnostic for gout. Accumulations of these crystals are called **tophi**.

The uric acid level is markedly increased. Elevated uric acid levels in reptiles can be associated with gout, renal disease and a diet that is excessive in purines (i.e. herbivorous reptiles fed diets high in animal protein). Any and/or all of these factors may have contributed to the hyperuricemia in this case. The hyperproteinemia is likely secondary to the inflammation induced by gout.

Gout can be primary or secondary. Primary gout is due to an innate error in uric acid metabolism. Reptiles more commonly suffer from secondary gout which is a condition that interferes with the normal production and excretion of uric acid. Common conditions leading to gout in reptiles include starvation, renal disease, severe and prolonged dehydration and excessive dietary purines. The excessive uric acid can accumulate in joints, subcutaneous tissues and organs.

Prior to diagnosis, Pancake was fed a diet that mainly consisted of crickets, with occasional vegetables. It is generally recommended that bearded dragons be fed mainly vegetables, with occasional insects. It is possible that the gout was secondary to diet too rich in purines.

Pancake was treated with warm water soaks, anti-inflammatories and allopurinol. She did not do well, and was eventually euthanized.