



Diagnostic Exercise

From the CL Davis/SW Thompson Foundation

Case #:227; Month: December; Year: 2023

Question sheet

Contributors: Danyue Kang, The Ohio State University College of Veterinary Medicine, kang.930@osu.edu. Rachel Neto¹, DVM, MS, DACVP; Luan Henker¹, DVM, MS, PhD; Thainá Lunardon¹, DVM. 1 Auburn University College of Veterinary Medicine, Department of Pathobiology, rtn0004@auburn.edu.

Clinical History: A 16-year-old Quarter Horse gelding was presented for a 3-day history of lethargy, marked anemia, cyanotic oral mucous membrane, delayed jugular refill, and dark red urine, which retained the discoloration after centrifugation. Relevant in-house laboratory findings included packed cell volume of 15.3% [reference interval (RI): 32.0-48.0], elevated mean corpuscular hemoglobin concentration (MCHC) (61.1 g/dL; RI: 31.0-37.0), and a high hemolysis index (1642; RI: 0-43). Blood smears revealed moderate amounts of ghost cells (Fig 1, arrows) and eccentrocytes (Fig 1, arrowheads) within a highly hemolytic background.

Necropsy Findings: Both kidneys had uniformly dark red cortex and medulla. The urinary bladder contained moderate amounts of dark red, thin, urine (Fig.2). Scattered throughout most of the liver parenchyma were large numbers of up to 1.5-cm diameter eosinophilic granulomas with a mineralized core (most likely parasitic granulomas, deemed incidental). Other organs were unremarkable.

Gross and Microscopic Images:

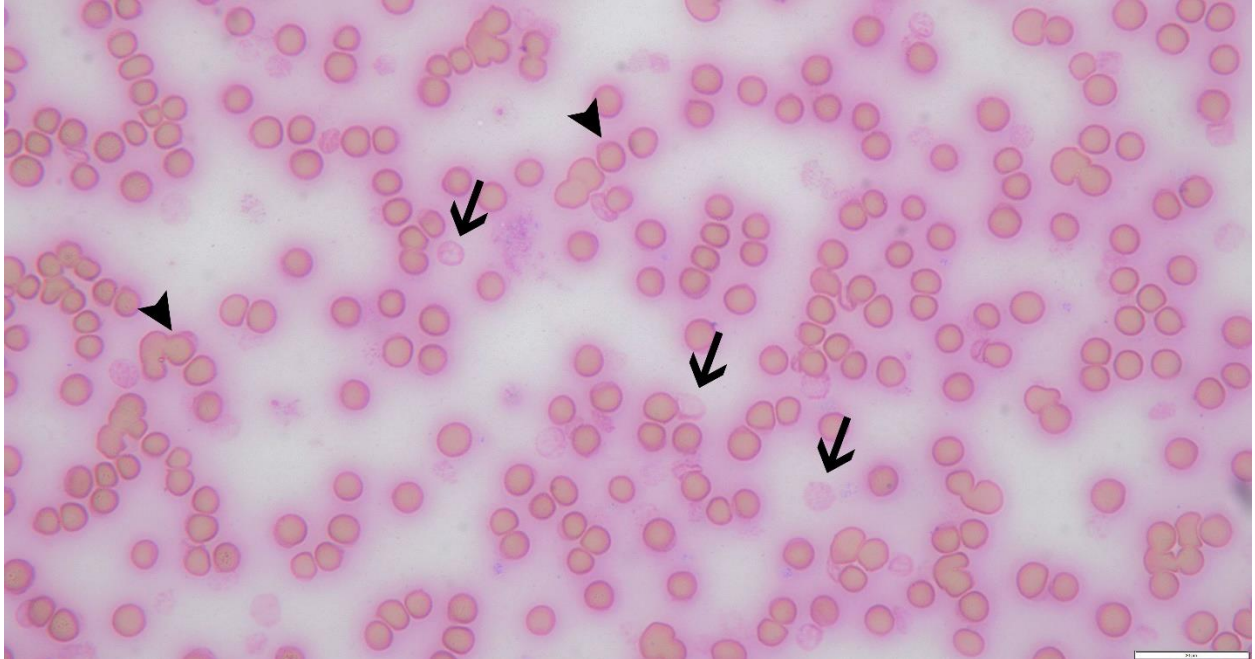


Figure 1. Blood smear cytology with some ghost cells (arrows) and eccentrocytes (arrowheads) in a highly hemolytic background.



Figure 2. Kidney and urine

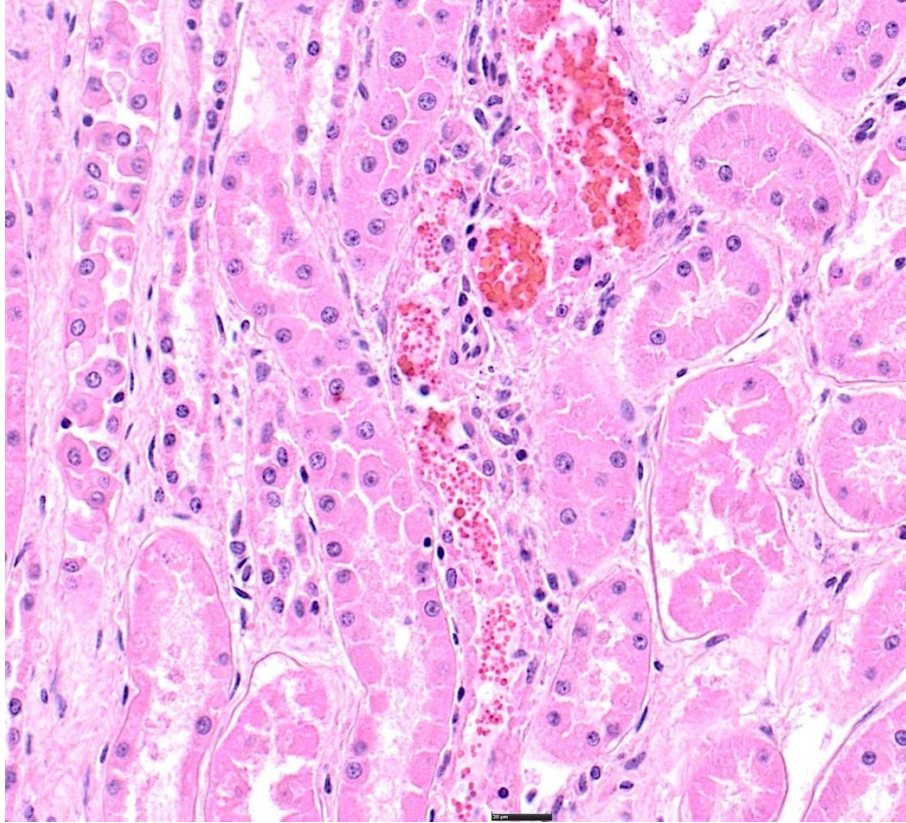


Figure 3. Renal tubules

Follow-up questions:

- *Histological description*
- *Histologic diagnosis*
- *Most likely etiology*

*The Diagnostic Exercises are an initiative of the Latin Comparative Pathology Group (LCPG), the Latin American subdivision of The Davis-Thompson Foundation (DTF). These exercises are contributed by members and non-members from any country of residence. Consider submitting an exercise! A final document containing this material with answers and a brief discussion will be posted on the DTF website (<https://davisthompsonfoundation.org/diagnostic-exercise/>).

Associate Editor for this Diagnostic Exercise: Saulo P. Pavarini
Editor-in-chief: Claudio Barros