When running an activated clotting time in chickens (Gallus gallus domesticus), which sample type is recommended?

1. Heparinized whole blood
2. EDTA whole blood
3. Citrated whole blood
4. Fresh whole blood
5. Heparinized serum

Answer: C

In a recent study evaluating intravenous regional limb perfusion (IVRLP) and intraosseous regional limb perfusion (IORLP) of ceftiofur sodium in chickens (Gallus gallus domesticus), which of the following was true?

1. IVRLP resulted in higher synovial concentrations than IORLP or IM injections
2. IVRLP caused local skin necrosis in a small number of cases
3. IVRLP did not reach target plasma concentrations
4. IORLP did not reach target plasma concentrations
5. IORLP resulted in higher synovial concentrations than IORLP or IM injections

Answer: A

Complete Blood Cell Count and White Blood Cell Counting Method Comparison in 49-day-old Bobwhite Quail (Colinus virginianus).

Kanda, I., Robertson, J., Meinkoth, J. and Brandão, J.

*Journal of Avian Medicine and Surgery*, 2020;34(2):132-141.

**Practice Questions**

Which of the following is true regarding complete blood count in healthy juvenile bobwhite quail?

1. Estimating white blood cell count on x400 magnification caused underestimation
2. Estimating white blood cell count on x400 magnification resulted in higher counts than x1000
3. Estimating white blood cell count on x1000 magnification caused overestimation
4. Estimating white blood cell count on x1000 had poor correlation with indirect WBC estimation
5. Young bobwhite quail have a primarily heterophilic leukogram

Answer: B

What is your diagnosis - chicken Marek’s

Steven M. Bessauer Almeida, BS; Heather R. Shive, DVM, PhD; Janice B. Harvey, DVM; Luke B. Borst, DVM; and Eli B. Cohen, DVM

JAVMA 2018;252(2):173-175

**Practice Question**

Which of the following viruses is the virulent strain responsible for the majority of clinical Marek disease?

1. Avian leukosis virus
2. Meleagrid alphaherpesvirus 1
3. Gallid alphaherpesvirus 2
4. Gallid alphaherpesvirus 3
5. Reticuloendotheliosis virus

Answer: D

Pathology in Practice - Peafowl Histomonas

Erin Adams, DVM; Marcia R. S. Ilha, DVM, MSc

JAVMA 2018;252(10):1227-1230

**Practice Question**

What is the primary intermediate host for *Histomonas meleagridis*?

1. *Strongyloides avium*
2. *Heterakis gallinarum*
3. *Ascaridia dissimilis*
4. *Capillaria obsignata*
5. *Davainea meleagridis*

Answer: B

1. Which of the following was found to be the most common cause of mortality in a group of captive Attwater’s prairie chicken chicks (*Tumpanuchus cupido attwateri*)?
	1. Necrotic enteritis
	2. Marek’s disease
	3. Perosis
	4. Yolk sac infection
	5. Mucoid enteritis
2. According to a study looking at the decline in pheasant and partridge populations in Bavaria, which of the following was found to the be most significant contributing factor?
	1. Increased maize cultivation
	2. Environmental toxins
	3. Reproductive disease in hens
	4. Heavy parasite burdens
	5. Decrease in set-aside areas

Kelly, E. J., Baldwin, T. J., Frame, D. D., Childress, A. L., & Wellehan, J. F. (2018). Haemoproteus (Parahaemoproteus) spp. in captive-bred bobwhite quail (Colinus virginianus) in southern Utah, USA. *Journal of wildlife diseases*, *54*(4), 726-733.

Abstract: A captive-bred Bobwhite Quail (*Colinus virginianus*) ranch in southern Utah, US experienced high mortality rates in the late summer and fall of 2012. Nine juvenile birds were necropsied at the Utah Veterinary Diagnostic Laboratory. Gross lesions included pale skeletal muscle with **multifocal hemorrhages and petechiae in the air sacs and serosal surfaces of most organs.** Histologically there was moderate to severe, **multifocal, degenerative myositis with intramyofiber schizonts and minimal lymphoplasmacytic infiltrates in the proventriculus, ventriculus, heart, and skeletal muscle. There was also moderate fibrinoid to heterophilic vasculitis in multiple organs with vascular intraendothelial or intravascular merozoites and scattered thrombosis. In the liver and spleen there were multiple degenerative schizonts** that had ruptured. Blood smears from three of the birds were stained with Wright-Giemsa stain and examined at a referral laboratory. Although the blood cells were deteriorated (postmortem artifact), life stages (exact stages not specified) consistent with *Haemoproteus* spp. were identified in erythrocytes. Polymerase chain reaction done on pooled tissues from two birds produced an amplicon in both pooled samples, and direct sequencing confirmed the presence of 533 base pairs of a *Haemoproteus* sp. in the subgenus *Parahaemoproteus*. **The identification of *Parahaemoproteus* spp. in quail in southern Utah implies that appropriate *Culicoides* spp. vectors are present in the state and that there is potential risk to other birds such as zoo and aviary populations, wild turkeys, and other game birds.**

Question:

Identify the following avian haemoparasite gametocytes by genus:

 

Ans: Left = Hemoproteus; Right = Plasmodium

Images from Speer Current Therapy in Avian Med and Surgery - Ch 13

MacDonald, A. M., Jardine, C. M., Rejman, E., Barta, J. R., Bowman, J., Cai, H. Y., ... & Nemeth, N. M. (2019). High prevalence of Mycoplasma and Eimeria species in free-ranging eastern wild turkeys (Meleagris gallopavo silvestris) in Ontario, Canada. *Journal of wildlife diseases*, *55*(1), 54-63.

ABSTRACT: Following extirpation from Ontario, Canada in the early 1900s, Eastern Wild Turkeys (EWTs; Meleagris gallopavo silvestris) were successfully reintroduced to the province in 1984. Despite the subsequent establishment of robust populations and biannual hunting seasons, data on the circulation of potential pathogens in these birds are lacking. Similarly, the interface between EWTs and poultry is poorly understood and includes possible bidirectional pathogen transmission via direct or indirect contact. **Mycoplasma and Eimeria spp. are potential pathogens in Galliformes, and our objective was to determine their prevalence and distribution in Ontario EWTs. During the 2015 spring hunting season (April and May), oropharyngeal swabs from 147 hunter-harvested and five opportunistically collected EWTs from southern Ontario were cultured for Mycoplasma spp. The intestinal or cloacal contents of 107 of these birds and an additional 24 opportunistically and biologistcollected EWTs were analyzed for Eimeria spp. using PCR or fecal flotation. At least one Mycoplasma spp. was isolated from 98.7% (150/152) of EWTs, with six species identified. Mycoplasma gallopavonis was identified most commonly in 96.7% (147/152)**, followed by Mycoplasma gallinaceum in 23.7% (36/ 152). Potential poultry pathogens (Mycoplasma meleagridis, Mycoplasma iowae, and Mycoplasma synoviae) were isolated from swabs of five (3.3%) EWTs. Coinfections with up to three Mycoplasma spp. were detected in 36.8% (56/152) of EWTs. Most EWTs tested positive for Eimeria spp. oocysts (75.6%; 99/131). A subset of positive samples (n¼16) were characterized by PCR, which detected the following species: Eimeria meleagrimitis (93.8%), Eimeria adenoeides (93.8%), Eimeria gallopavonis (56.3%), and Eimeria meleagridis (12.5%). **The majority (93.8%) of these samples were positive for more than one Eimeria spp. We showed that numerous, mostly nonpathogenic Mycoplasma and Eimeria spp. circulate in EWTs across southern Ontario, and this helped to establish baseline information for comparison with future surveillance and monitoring**

Question:

Which of the following *Mycoplasma spp* has been associated with pathogenic infection in wild and domestic turkeys?

1. *M. meleagridis*
2. *M. gallopayonis*
3. *M. gallinaceum*
4. *M. pullorum*
5. *M. imitans*

Ans: A

**Risk factors for and spatial distribution of lymphoproliferative disease virus (LPDV) in wild turkeys (Meleagris gallopavo) in New York State, USA**

Alger K, Bunting E, Schuler K, Whipps CM.

Journal of wildlife diseases. 2017 Jul;53(3):499-508.

**Which factor s is associated with an increased prevalence of lymphoproliferative disease virus?**

1. **Increasing age**
2. Increased deciduous forest
3. Declining turkey harvest
4. Presence of reintroduction
5. Earlier sampling year

**Detection of lymphoproliferative disease virus in Canada in a survey for viruses in Ontario wild turkeys (Meleagris gallopavo).**

MacDonald AM, Jardine CM, Bowman J, Susta L, Nemeth NM.

Journal of wildlife diseases. 2019 Jan;55(1):113-22.

**Which species has a high natural prevalence of lymphoproliferative disease virus?**

1. Rock doves
2. **Wild turkeys**
3. Ringed teal
4. House finches
5. Laughing gulls