**Investigation of potassium chloride for euthanasia of anesthetized marine toads (*Rhinella* *marina*).** *Journal of Herpetological Medicine and Surgery.* 32.1 (2022): 42-47.

**Question:** How would you advise your resident (who has poor technical skill and no access to Euthasol) to euthanize a Marine Toad solo on a weekend?

**Answer:** Anesthetize with 2000 ppm MS-222 and then intracoelomic injection of KCl. Intracardiac KCl is an option, but it requires excellent technical skill and can be challenging to perform. Immersion KCl is an option, but it can cause significant adverse effects and takes roughly double the time to cause cardiac arrest as compared to intracoelomic KCl.

**Urinary corticosterone concentrations in free-ranging and managed cane toads (*Rhinella* *marina*).** *Journal of Zoo and Wildlife Medicine.* 52.4 (2021): 1234-1240.

Question: In Marine Toads, urinary corticosterone levels significantly dropped around which timepoint when being held in managed care?

1. Day 22
2. Day 50
3. Day 81
4. Day 119
5. Never

Answer: A

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MULTISYSTEMIC EMPHYSEMA (GAS BUBBLE DISEASE)- ASSOCIATED ACUTE MASS MORTALITY IN A FREE-RANGING POPULATION OF COMMON FROG (RANA TEMPORARIA) IN SWITZERLAND

Stephanie Borel and Francesco Origgi

1. In a described mass mortality event of Common frogs (*Rana temporaria*) in Switzerland, what macroscopic or microscopic features associated with presumptive Gas Bubble Disease were in direct contrast of what is commonly seen in fish?
	1. Emphysema within the brain
	2. Emphysema within the intestines
	3. Bilateral exophthalmos
	4. Tongue protrusion and prolapsed stomach
	5. Skin distention by discrete gas bubbles

Correct answer: D. tongue protrusion and prolapsed stomach. In the necropsies performed following this mass mortality event, multisystemic emphysema affected all organs except the brain and intestines (r/o A & B). Bilateral exophthalmos was not observed in common frogs and is seen in fish experiencing GBD (r/o C). The discussion notes that the emphysema of the skin was distinctly different than “discrete gas bubbles observed in fish” (r/o E). Tongue protrusion and prolapsed stomach was seen in these frogs, and prolapse is also seen in fish experiencing barotrauma, which is a DDx for gas bubble disease for fish under human care.

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CHOLELITHIASIS IN CAPTIVE MOUNTAIN CHICKEN FROGS (*LEPTODACTYLUS FALLAX*): DIAGNOSTIC IMAGING AND HISTOPATHOLOGICAL FEATURES

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1. If a necropsy revealed cholelithiasis in a single mountain chicken frog (*Leptodactylus fallux*), what would be the most appropriate antemortem diagnostic modality to screen the remainder of mountain chicken frogs housed in the collection?
	1. Antemortem tests have poor sensitivity
	2. Orthogonal whole body radiographs
	3. Coelomic ultrasonography
	4. Computed tomography
	5. Endoscopic liver biopsy

Correct answer: C. coelomic ultrasonography has a sensitivity of 95% and is the diagnostic modality of choice. This rules out A. Orthogonal whole body radiographs have high specificity, but poor sensitivity, making them an inappropriate solo diagnostic tool for screening the remainder of the population (r/o B). CT has not been evaluated against the other modalities (r/o D) [this may be a bad distractor because CT could be proven to be superior to ultrasound in a subsequent study]. Endoscopic liver biopsy was included as a distractor due to the discussion of melanomacrophage density in liver tissue but is invasive and was also not evaluated in the study, this was assessed based on postmortem cases (r/o E).

Kane, Lauren P., et al. "Review of histologic lesions and mortality in Rio Cauca caecilians (*Typhlonectes natans*) over a 22-year period." Journal of Zoo and Wildlife Medicine 52.3 (2021): 901-908.

Question:

Which of the following are the two most common causes of death in adult Rio Cauca caecilians (*Typhlonectes natans*)?

1. Renal disease and gastrointestinal parasitism
2. Gastrointestinal parasitism and skin disease
3. Hepatic disease and skin disease
4. Renal disease and skin disease
5. Skin disease and cardiovascular disease

Answer:  D

Francois, Camille, et al. "Gross and ultrasonographic anatomy of the coelomic organs of healthy axolotls (*Ambystoma mexicanum*)." Journal of Zoo and Wildlife Medicine 54.4 (2024): 670-680.

Question:

Which of the following statements is most correct regarding ultrasonographic anatomy of the coelomic organs of healthy axolotls (*Ambystoma mexicanum*)?

1. The outlines and the position of atria and sinus venosus were easily identified on ultrasound
2. There was a significant positive correlation between spleen thickness and body width
3. Male axolotls were wider than female axolotls
4. The pancreas was easily identified on ultrasound in the majority of axolotls
5. Ultrasonographic measurements of the left testicle diameter were highly repeatable

Answer:  B

Explanation:

* The outlines and the position of atria, truncus arteriosus, and sinus venosus were unclear, probably because of the thinness or small size of these structures.
* Females were wider (P = 0.04) than males.
* The pancreas and adrenal glands could not be identified in any animals, either during necropsy or ultrasonography.
* CV for stomach wall width, pericardial effusion, left kidney width, and left testicle diameter was <25%. Ultrasonographic measurements of the liver, spleen, myocardial thickness, and right and left kidney length were highly repeatable (correlation value [CV] < 5%).

**CASE DEFINITION AND TREATMENT TRIAL OF TETANY SYNDROME IN PANAMANIAN GOLDEN FROGS (ATELOPUS ZETEKI).** JZWM 2024.

Question: Which oral treatment is reported to be the most effective at improving tetany syndrome in a Panamanian golden frog (*Atelopus zeteki*)?

1. Calcium gluconate
2. Magnesium chloride
3. Supplemental gavage feeding
4. Combo Ca, Mg, B vitamin complex
5. Amphibian Ringers Solution

Answer: D

**PREVALENCE OF OCULAR ABNORMALITIES AND NORMAL DIAGNOSTIC PARAMETERS IN TWO GROUPS OF PANAMANIAN GOLDEN FROGS (ATELOPUS ZETEKI).** JZWM 2024.

Question: Which ocular abnormality is reported to have the highest prevalence in captive Panamanian golden frogs (*Atelopus zeteki*)??

1. Lipid keratopathy
2. Cataracts
3. Trauma
4. Fungal keratitis
5. Hyphema

Answer: B

What receptor does the drug alfaxalone target?

1. Alpha-2 adrenergic
2. Gamma aminobutyric acid
3. N-methyl-D-aspartate
4. Dopaminergic
5. Benzodiazepine

Answer: B

Which of the following is true in comparison of subcutaneous alfaxalone and subcutaneous alfaxalone-dexmedetomidine for sedation in Houston toads?

1. Histologically, alfaxalone showed to cause injections site reactions which was not appreciated with saline injections
2. The most sensitive indicator of sedation in the Houston toad was shown to be the righting reflex alone
3. Alfaxalone had a significantly higher gular rate compared to the combination of alfaxalone-dexmedetomidine
4. All toads from both alfaxalone groups and alfaxalone-dexmedetomidine groups lost nociception
5. Alfaxalone-dexmedetomidine was found to have shorter recovery times compared to alfaxalone post reversal administration

Answer: C