

TOP TEN MISTAKES TO AVOID IN EXOTIC ANIMAL EMERGENCIES

*Jennifer Graham, DVM, DABVP (Avian/ Exotic Companion Mammal), DACZM
Graham Veterinary Consulting, LLC*

Do you know that ‘GI stasis’ is not a diagnosis in small mammal patients? Do you know which pet bird species are sexually dimorphic? Do you know that rabbits in a critical state are often hypothermic, hyperglycemic, azotemic, and can appear to have an obstruction pattern on abdominal films – and that all these conditions can resolve with aggressive supportive care measures? If you answered ‘no’ to any of these questions, then read on to learn about 10 common mistakes made when treating companion pet exotic species in the ER:

1. ***Lack of appropriate supportive care for avian and reptile species:*** The majority of reptile and avian species presenting in an emergency will be dehydrated and hypothermic. Any debilitated avian or reptile patient needs thermal support (the exception may be those patients that have experienced head trauma). Hospitalized avian patients are ideally maintained around 85-90F. This is also a good average for reptiles, keeping in mind that preferred temperature ranges vary greatly depending on species. Fluid support is essential for these patients. IV or IO fluid administration is preferable to SQ fluid administration in more critical patients. Fluid maintenance requirements are generally around 50-60 ml/kg/day in avian species and 10-20 ml/kg/day in reptile species with additional fluid given based on degree of dehydration. Fluids should always be warmed prior to administration. Humid environments can help with maintaining hydration. Reptiles can be misted or soaked in shallow warm water for 15-20 minutes a couple of times a day if they have no penetrating wounds, making sure the head is held above the water. While patients should be rehydrated prior to providing nutritional support, aggressive nutritional support is required for anorectic avian patients. Even with frequent (every 4-6 hour) gavage feeding, it can be difficult to meet caloric requirements of small avian species that are completely anorectic. Critical care diets should always be kept on hand appropriate for feeding herbivorous, omnivorous, and carnivorous exotic pet species.

2. ***Lack of appropriate supportive care for rabbits and small mammal patients and/or inadequate temperature monitoring:*** Hypothermic rabbits and small mammals (body temperature <99F) may need thermal support. These patients will generally not respond to other supportive care measures until properly warmed. These species, particularly rabbits and chinchillas, are heat sensitive so thermal support should be stopped as soon as the body temperature reaches 99F to avoid overheating. Temperature should be monitored hourly until the patient is normothermic. It is important for herbivorous mammals to have regular food intake and syringe feeding is necessary in anorectic patients. Critical care diets are generally calculated at 45 ml/kg body weight with feedings divided every 8 hours for most herbivore species. Maintenance fluid requirements for rabbits are at least 100-120 ml/kg/day. Analgesia is also important for painful small mammal patients.

3. ***Diagnosis of GI obstruction in rabbits prior to providing appropriate supportive care measures:*** Hypothermic rabbits often have secondary functional gastrointestinal ileus. As a result, rabbits can have severe gastric distention and appear obstructed on radiographic imaging when hypothermic. A hypothermic rabbit should not be taken to surgery until stabilized; therefore, if an obstructive GI pattern is noted on a hypothermic rabbit provide thermal support and reassess radiographs every 1-3 hours. Hypomotility often resolves once the patient is normothermic and unnecessary and risky surgery can be avoided.

4. ***Diagnosing an unstable rabbit with ‘renal failure’:*** Rabbits in a critical state are often hypothermic, hyperglycemic, hyponatremic, and azotemic – all these abnormalities may resolve with

aggressive supportive care. High lactate is not necessarily indicative of a poor prognosis in a rabbit. Serum concentrations of d-lactate in healthy rabbits are in the range of those of other mammals while l-lactate values in healthy rabbits are higher compared with other mammals. Pre-renal azotemia can be severe in dehydrated rabbit patients. Renal values should be reassessed after the patient is appropriately hydrated to determine if elevations are persistent. Sodium levels less than 129 mEq/L in rabbits have been associated with a 2.3-fold increase in mortality risk. Simultaneous determination of sodium and glucose concentrations and calculation of plasmatic tonicity is helpful to differentiate types of hyponatremia in rabbits.

5. Making a diagnosis of 'GI stasis': Gastrointestinal hypomotility is NOT a diagnosis – it is a syndrome that is generally indicative of an underlying disease process. There are many potential causes for RGIS (Rabbit Gastrointestinal Disease Syndrome) including dental disease, metabolic disease, toxin exposure, dietary indiscretion, sepsis, and others. A thorough history, physical examination, and diagnostics including blood work and radiographs are helpful to determine the etiology of disease. Lead toxicosis, sepsis, and liver lobe torsion can present identically as 'GI stasis' – without diagnostics it is impossible to make an appropriate diagnosis to provide appropriate therapy.

6. Neglecting to perform a thorough oral examination in rabbit and rodent patients: 'Unable to perform oral exam' should never be entered into the SOAP of a rabbit or rodent patient unless there are severe extenuating circumstances (i.e., multiple jaw fractures for example). Dental disease is a frequent reason for emergency presentation of these species and the affected patient cannot be appropriately treated without reaching this diagnosis. There are tricks to assessing for dental pathology – palpating the ramus of the mandible, evaluating incisor occlusion, evaluation of anatomical reference lines on radiographs of the head – but nothing replaces a good exam of the entire oral cavity. For routine oral examination on unanesthetized patients, the author prefers to use a Welsh Allen bivalve nasal speculum over an otoscopic cone. Although a bit of practice is needed to master the use of this speculum, it allows the examiner to get a wider field of view of the cheek teeth by moving the tongue and cheek away from the field of view. Keep in mind that radiography or ideally computed tomography (CT) may be necessary to best diagnose dental disease including abscesses. Speaking of otoscope cones, keep in mind that all lop rabbits have stenotic ear canals with debris in the deep ear canal obscuring a normal view of the tympanum (other than in very young rabbits).

7. Neglecting to collect a thorough signalment and history: If owner reports bird is female – is it a dimorphic species? Has the bird been DNA sexed? Don't take the owner's word for it. There are very few psittacine bird species that are dimorphic: budgerigars (blue cere color for mature male), cockatiels (spots on wings and stripes on tails of mature female vs solid for male), eclectus (red female, green male), cockatoos (black iris in male and red iris in female when sexually mature). Larger/bulky head size can be seen with some male birds, but this is not reliable (of course, if the bird has ever laid an egg you know the bird is a female). Species of bird is important to know since some diseases are more common in New World vs Old World psittacine birds. A thorough medical history is important to determine if there is a seasonal pattern to the problem (this may indicate hormone issues in feather picking birds for example) or any clues that could help narrow down the differentials for disease.

8. Neglecting to know (or look up) natural history/husbandry/diet requirements and physical exam 'normals': You can't appreciate abnormal without knowing normal. You won't know if inappropriate husbandry or diets are contributing to the problem in question without knowing what ideal husbandry and diet are for that species. You won't know if a physical examination finding is

abnormal without knowing what should normally be seen. Practice makes perfect but it behooves the clinician to consult reference materials or more experienced colleagues about cases to ensure nothing is missed. If you aren't sure – make sure to investigate!

9. *Believing an owner (when they state that toxin or heavy metal exposure or thermal burns are 'impossible')*: In most toxin exposures seen in exotic pet species (lead for example) the owner has no idea there has been a toxin exposure. Thermal burns have a very characteristic appearance – if a burn is suspected, have the owner put their hand directly where the patient has been in the enclosure to determine if there could be a heat source malfunction. Inhaled toxins can cause acute pulmonary hemorrhage in birds, but owners may not be aware that the bird has been exposed to a respiratory toxin. Trust your eyes and physical examination findings – if the signs are consistent with a particular disease make sure to perform a thorough investigation rather than just taking the 'owner's word for it'.

10. *Putting an exotic pet species in an oxygen cage +/- heat and feeling you have provided appropriate emergency care*: Did you examine the patient? "It was going to die with an exam" – then it will die _without_ an exam and you might be able to intervene and save the patient! Although fine for initial stabilization, there will be very few cases that can be 'fixed' with heat and oxygen support alone. A thorough history and examination are important along with diagnostics in many cases. Even if it is unclear about the etiology of disease the patient should be assessed for hydration status, painful conditions, or infection; in short – treat an exotic pet species just like you would treat a dog or cat species presenting on an emergency basis. Many of the disease processes in exotic species are like those in dogs and cats and extrapolation from basic dog/cat knowledge is at least a good starting point. If you are consulting with an exotic specialist, it is best to know complete history, species, and physical examination findings prior to the consult. It is also a good exercise to consider differentials and make a tentative treatment plan prior to the discussion as this will only help increase knowledge base and comfort level on cases going forward.

As an aside, keep in mind that the stimulus to breathe in most species of reptiles is triggered by oxygen sensors in the lungs, rather than carbon dioxide sensors in the blood, as is used in mammals. Reptiles placed on high-oxygen gas systems (= conventional anesthesia machines) become rapidly apneic. In a reptile, it is preferable to ventilate with an ambu-bag rather than oxygen.

References available on request.

Resources for Veterinarians Interested in Learning More About Exotic Species:

<https://aav.org> – Association of Avian Veterinarians

<https://aemv.org/> - Association of Exotic Mammal Veterinarians

<https://arav.org/> - Association of Reptile and Amphibian Veterinarians

<https://www.aazv.org/> - American Association of Zoo Veterinarians

<https://www.exoticscon.org/> - ExoticsCon (AAV, AEMV, ARAV joint conference)

<https://www.aav.org/page/avccp> - Avian Veterinary Clinical Competency Program

<https://lafebervet.com> - LafeberVet

<https://www.oxbowanimalhealth.com/vet-connect> - Oxbow Vet Connect

Helpful texts (general):

Clinical Veterinary Advisor: Birds and Exotics by Joerg Mayer, Thomas M. Donnelly

Current Therapy in Exotic Pet Practice by Mark Mitchell, Thomas N. Tully

Exotic Animal Formulary by James Carpenter – 6th edition coming out soon

Exotic Animal Emergency and Critical Care Medicine by Jennifer Graham et al

Surgery of Exotic Animals by R. Avery Bennett, Geoff W. Pye

Veterinary Clinics of North America: Exotic Animal Practice

Avian:

Backyard Poultry Medicine and Surgery by Cheryl B. Greenacre et al

Blackwell's Five-Minute Avian Consult by Jennifer Graham

Current Therapy in Avian Medicine and Surgery by Brian Speer

Radiology of Birds: An Atlas of Normal Anatomy and Positioning by Sam Silverman, Lisa A. Tell

Exotic Companion Mammal:

Ferrets, Rabbits, and Rodents Clinical Medicine and Surgery by Quesenberry et al

Radiology of Rodents, Rabbits and Ferrets: An Atlas of Normal Anatomy and Positioning by Sam Silverman, Lisa A. Tell

Reptile/Amphibian:

Amphibian Medicine and Captive Husbandry by Kevin M. Wright, Brent R. Whitaker

Reptile Medicine and Surgery by Douglas R. Mader, Stephen J. Divers