

AVIAN & EXOTIC ANIMAL EMERGENCIES

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Avian and exotic animal emergencies can be a little intimidating at first. The principles are all the same. The shapes and sizes are just different! Keep air going in and out and blood going around and around. One of the biggest things to keep in mind when dealing with avian and exotic animal emergency situations is that most of these species are prey animals by nature. What these means for you clinically is that other than acute trauma, their presentations are often an acute manifestation of a chronic problem. This results in a very fragile patient than is often much more ill than you might initially think. It is not uncommon for us to have to put a patient directly into a warm incubator with a concentrated oxygen source on it immediately. Sometimes these patients are so fragile that is all you can do for the first hour.

BASIC ASSESSMENTS

Weight

Always weigh avian and exotic patients in grams or kilograms. A digital baby scale is great for weighing animals in the 1-10kg range. A gram scale that weighs up to 1kg in 1 gram increments/accuracy is good for patients weighing 0.03-1.0kg and a “mini” gram scale is very helpful for weighing animals less than 30grams. A small container such as a “salad spinner” that has a lid on it is very handy for weighing small fast wiggly animals and small flighted birds.

Common weights:

- Ferrets: 0.8-1.2kg
- Rabbits 1.5-2kg
- Finch/canary 18-20g
- Parakeet 30g
- Lovebird 50g
- Cockatiel 80-90g
- Quaker 100-120g
- Macaw 0.9-1kg
- African Grey – Congo 450g, Timneh 350g
- Umbrella cockatoo 400-500g
- Moluccan cockatoo 800-850g
- Reptiles – varies widely depending on species

Temps

Most avian and exotic patients have a very high surface area to mass ratio and lose body heat **very** quickly when they are ill, compromised by trauma or are wet. It is imperative to always provide heat support for avian and exotic patients. Using a digital external mounting thermometer with a long probe on it that you can put alongside the patient is very helpful for ensuring they don't get too hot. Monitor patient's body temperature carefully and frequently.

Ferrets – easiest to accomplish by having holder “scruff”

the ferret and hold them over a trash can. They inevitably poop every time they are temped. Normal is 101-104F.

Suggestion for providing heat support for an ill ferret – warm water bottles along either side of their body. Be sure towel stays between ferret and hot water bottles. Bair huggers are great on ferrets. You can use traditional bair hugger forms or use diapers or pull ups. To use diapers or pull-ups separate the inner lining and put the bair hugger hose inside it. This method also works great for small mammals and small birds.

Rabbits – easiest to do with rabbit gently rolled back in your arms on their back. Use lots of lube and gently insert the thermometer straight down and in. Normal temp is 101.5 – 103.5F. Very important – **a lower than normal body temperature is much more concerning than a higher than normal temperature.** A rabbit whose body temperature is between 95-97F is in grave distress and needs immediate heat support with either a bair hugger, hot water bottles or a warm blow dryer waved over them while they are under a towel.

Birds are not routinely temped, but they do lose body heat VERY quickly when they are ill or wet. Exam gloves filled with warm water are great to put around small birds to help keep them warm. Arrange the fingers under their wings close to their body.

Reptiles are exothermic. Heat support is vital. They are best warmed up with a radiant heat source such as a 150W lightbulb in a gooseneck fixture. It is important to note that some of their lab values will be errant if the blood is pulled when they are not at their POTZ (preferred optimal thermal zone).

HYDRATION STATUS

Rabbits

Skin turgor is **not** helpful in assessing hydration in rabbits. It means little to nothing. Hydration is most accurately assessed on rabbits by palpating their abdomens. Rabbits' GI tracts make up approximately 70% of their body weight. When they are becoming dehydrated they pull water from their GI tract to keep the rest of their body functioning normally. It is not uncommon for a rabbit's stomach to feel moderately doughy in the normal state. Their normal GI transit time is five days. Their cecum is a very large section of their GI tract and should not normally be well defined on abdominal palpation. If the GI tract feels distinct instead of indistinct and “mushy”, that is a sign that they are significantly dehydrated.

Ferrets

Skin turgor in ferrets is also **not** helpful in assessing hydration status. Their skin naturally has a LOT of turgor. Hyperadrenocorticism is very common in ferrets. Instead of cortisol, they produce excessive amounts of sex hormones. This results in even thicker skin that holds its shape well.

Assess ferrets hydration status by the moistness of their mucous membranes and CRT.

Small mammals – rats, gerbils, mice, hedgehogs – skin turgor is a decent indicator of hydration status. Guinea pigs are a little more like rabbits re using palpation of the GI tract to assess hydration, but they also get very sunken eyes when they are dehydrated.

Birds

On birds such as macaws that have face patches of unfeathered skin you can assess avian hydration by skin turgor. Dehydrated birds will often have a “sunken-eyed” look. This is not your imagination.

Also look at the vein that courses over the medial aspect of their elbow joint (basilic vein). When the wing is stretched out, the vein should have enough pressure to stay inflated. If it lays flat or does not seem very “full”, that is a sign of dehydration. You can also check for skin turgor of the unfeathered skin just under the lower edge of the keel over the ventral coelom.

Reptiles – sunken eyes and wrinkled skin are indications of significant dehydration in reptiles.

FLUID SUPPORT

Ferrets – subcutaneous fluids are ok, but just as with a critically ill dog or cat, they are not ideal. If necessary, most average sized ferrets tolerate 50ml of subcutaneous fluids between the shoulder blades per dose.

The best place for an IV catheter in a ferret is a cephalic vein. Use a Penrose drain and hemostat as tourniquet. Again, keep in mind that their skin is VERY thick. Use an 18ga needle with the bevel sideways to nick the skin. A 24 gauge IV catheter is most commonly used, but a 22 gauge will work well in most ferrets. You may occasionally need to use a 26ga catheter. Use loosely rolled elastic tape generously to secure the catheter in place. They do tolerate IV lines and pumps well. I recommend IV lines that are designed to resist kinking. It is very common for ferret's albumin levels to be 3.0-3.2 at best. Ill ferrets often have had diarrhea and their albumin levels tend to be even lower. I recommend supplementing all ferrets fluids with VetStarch at 20ml/kg/day. A ferret's maintenance fluid needs are 50ml/kg/day. I also like to supplement ill ferret's fluids with B- complex (add 1cc B complex per 250ml of fluids) and B12 at 250ug/kg. Methylcobalamin is preferred over cyanocobalamin.

If you do need to resort to a jugular catheter, use the right side as it is common for us to need to place esophagostomy feeding tubes in ill ferrets.

Rabbits – again, subcutaneous fluids are ok and will help most rabbits get through the night. The average sized rabbit tolerates 100ml SQ between the shoulder blades at a time. They don't tend to get diarrhea like ferrets do and don't tend to have as much issues with oncotic pressure.

For IV catheters, the lateral saphenous vein is preferred. Again, use loosely rolled elastic tape to secure the catheter.

Rabbits' daily maintenance fluids needs are 100ml/kg/day. Crystalloids such as PlasmaLyte or Normosol are good choices for rabbits.

Small mammals – subcutaneous fluids are well tolerated. Dose at 50ml/kg/day maintenance. Administer between the shoulder blades.

Birds – subcutaneous fluids work well for most birds. Use crystalloids at 50ml/kg/day maintenance. Good places for fluids delivery in birds are the inguinal area or the back. Be careful when administering fluids in the inguinal area that you do not breach the coelomic cavity and cause fluids to be delivered into the air sacs.

IV catheters are very useful in ill birds or birds undergoing extended anesthetic episodes. The right jugular vein is the ideal place. Secure the catheter with a “butterfly” of waterproof tape sutured to the neck. Wrap with cast padding then vet wrap. IV lines well tolerated.

Reptiles

Reptile skin is not as elastic. Use small volume in multiple sites. Reptiles maintenance rate is 25ml/kg/day. Crystalloids are a good fluids choice.

Intraosseous catheters – always remember “any port in a storm”. Intraosseous catheters can be a real life saver with some of these small avian and exotic patients in crisis. Use 18-22ga spinal needles depending on patient size. The tibia (mammals) or tibiotarsus (birds) is the preferred site. Use a small amount of bupivacaine at the site and appropriate systemic pain relief.

Catheter tip – put a strip of red vet wrap over any indwelling catheter, green vet wrap over bandaged leg after catheter removal.

PAIN MANAGEMENT

Be liberal with pain meds with avian and exotic patients. Pain is often the stress trigger that will “put them over the edge”.

Common analgesics and doses:

Ferrets: butorphanol at 0.2-0.4mg/kg SQ, IM q8-12 hrs works well. This can be very sedating in ferrets. Meloxicam at 0.1mg/kg SQ q 24 for 1-3 doses only if well hydrated and normal kidney function.

Rabbits: butorphanol at 1.0mg/kg IM or SQ q 8-12 hrs. Butorphanol is not very sedating in rabbits in general. Hydromorphone at 0.1mg/kg SQ or IM q 12 hrs. Be aware of GI side effects of narcotics on rabbits. Most ill rabbits are already experiencing some GI slow down if not full blown ileus already. Provide GI motility support for sick rabbits.

Use metoclopramide at 0.5mg/kg SQ or IM q 8 hrs or at 0.1mg/kg/day CRI.

If well hydrated and normal kidney function has been established, use meloxicam at 0.2mg/kg SQ or PO q 24hrs.

Small mammals – small mammals such as rats, gerbils, guinea pigs and hamsters do well with hydrocodone at 1mg/kg PO q 8-12 hrs. Tip – Hydromet syrup – cherry flavored 1mg/ml, well tolerated. Recently moved to schedule II though, but you can use hospital bottle for individual hospitalized patients. If well hydrated and kidney function is normal give meloxicam at 0.5-1.0mg/kg SQ or PO q 24.

Birds: Of all the exotic species, birds are the most difficult to control pain in. Use butorphanol at 2-4mg/kg IM q 2-4 hrs. Butorphanol is not very sedating in birds. You can also give hydrocodone at 1.0mg/kg PO q 4-6 hrs. If well hydrated and normal kidney function has been established use meloxicam at 1-3mg/kg IM q 12-24 hrs.

COMMON THINGS HAPPEN COMMONLY!

Ferrets

The most common emergencies in ferrets include, but are not limited to: hypoglycemic crises, urinary tract obstructions and gastrointestinal obstructions.

The “business end” of ferrets regarding your personal safety is the mouth. Be especially wary of small females. Best method of restraint is scruffing.

Hypoglycemic crises are, by far, the most common ferret emergency. They are usually secondary to an insulinoma. This is usually a chronic condition with an acute presentation precipitated by stress. Not all limp ferrets are hypoglycemic. Get a blood sugar reading asap. Alpha track glucometers have been verified for ferrets in the normal range. All hand held meters tend to be inaccurate the further the patient is out of the normal range. I-stat, epoch or table top chemistry analyzers are great for a more accurate reading.

The best place to get a blood sample from a ferret is the cranial vena cava. The heart is approximately 4cm distal to this common site for venipuncture in a ferret. Landmarks are the manubrium and the first rib. Insert an insulin needle (27 ½ gauge) just off the edge of the bone where these meet at an approximately 45 degree angle. Go in up to almost the hub then start drawing back as you slowly withdraw the needle.

Best treatment is IV dextrose. Give a bolus of 0.5ml 50% dextrose + 2.5ml of PlasmaLyte IV. To stabilize animal overnight, start on 2.5% dextrose at 50ml/kg/day IV. Administer GI protectants such as famotidine at 0.5mg/kg IV q 24 and 1.0ml of sucralfate (1gram/10ml suspension) PO TID. You can also give them 1mg/kg prednisone PO q 12hrs.

Urinary tract obstructions used to be most commonly associated with prostatic enlargement secondary to adrenal disease. Emergency treatment consists of assessing electrolyte imbalances, administering appropriate IV fluid therapy and getting a urinary catheter placed. Ferrets can be

induced with isoflurane via mask and intubated with a 2.0 or 2.5 uncuffed ET tube. Maintain on isoflurane at 2-3%. Be sure to provide heat support. Ferrets get cold quickly. Tip for getting a urinary catheter in a ferret – start with a well lubed 24 ga IV catheter with the stylet removed. The penis does have an os penis with a little hook on the end. Loop the hook with a piece of loose gauze to hold the penis out and then insert the 24 ga catheter into the urethra. Tip the catheter up at a 90 degree angle to be able to see the urethral opening better. Start inserting a 3 Fr (Slippery Sam) or 3.5 Fr red rubber catheter into the urethra as you are removing the 24 ga catheter.

Recently we have been seeing an inordinately large number of ferret patients with urethral obstructions with cysteine calculi. These tend to be very tiny stones that can pass down and fill the urethra. These patients frequently have alarmingly high potassium levels. Every single patient we have had with this condition has been on Zupreem grain free diet! These tend to be difficult fragile cases.

If a urinary catheter cannot be placed, remove urine from the bladder via cystocentesis with nothing larger than a 22 ga needle every 6 hrs.

Gastrointestinal obstructions – ferrets are essentially the Labrador retrievers of the exotic world. I have not seen one swallow a twin-sized bed sheet yet, but I’ve had some pretty ambitious patients that have consumed a ridiculous quantity of odd things like sneaker sole and silicone caulking. Gastric hairballs are not uncommon either. The acute FB patients are usually in better shape than the chronic gastric hairball patients. Ferrets are so thin that it is not difficult with some practice to actually be able to diagnose FB obstruction via palpation. Radiographs are, of course, very helpful. When in doubt, give 6ml of barium via gastric tube (10fr red rubber works well). Take rads at 30 min and 60 min. Stabilize patient for surgery the next day. Ferrets with gastric hairballs are often quite debilitated and have very low albumin levels. Be sure to add VetStarch to the fluid plan even if their initial albumin level is “ok”.

Rabbits

The most common rabbit emergencies are trauma, GI stasis/ileus, gastric bloat, and respiratory illness.

Trauma in rabbits is most commonly secondary to having been dropped or having jumped off a high surface. Another very common source of trauma in rabbits is fighting with a cohabitating rabbit. They can be absolutely vicious. The “business end” of rabbits is usually their claws. Wrap them securely in a towel for protection. You will get the occasional ambitious biter. Control bleeding in standard ways, splint broken bones with lots of padding and medicate for pain relief.

GI stasis is very common in rabbits. Out of all the patients we see, this is probably the most “prey mentality” patient. The slightest amount of stress or illness will shut their GI tract down. Common scenario will be an owner calling because their rabbit didn’t eat all of its dinner, didn’t run up for

its treats or is just acting “slightly off”. This may sound like an overreaction of you are not used to rabbits or rabbit owners, but it really isn’t. These subtle signs can be evidence of a life threatening condition. It is very important to assess body temperature on physical exam. Prognosis for rabbits who’s temp is below 96F is very guarded. They are really ready to “check out” if they present that hypothermic. They must be warmed up as quickly, safely and with minimal stress as soon as possible. Warm water bottles on either side of their body and a hair hugger over top of them work best. IV fluid therapy is extremely helpful in these cases as well as judicious use of pain relieving medications. Once pain is relieved and fluid therapy is started try to syringe feed them Oxbow Critical care as soon as possible. Use a CRI of metoclopramide, cisapride at 2.5mg per rabbit PO q 12hrs, OTC infant anti-gas drops at 1.0ml PO q 8 hrs and cyproheptadine at 1mg per rabbit PO q 12 hrs. Keep in mind that GI stasis is often secondary to an underlying medical problem. Chemistry panel and PCV are very helpful. CBC is a very low yield diagnostic in rabbits.

Gastric bloat is not uncommon in rabbits. It is usually due to a small felted piece of fur obstructing the duodenum. This is a very critical emergency that should not wait for immediate intervention. These patients need to be anesthetized with isoflurane anesthesia either by chamber induction or mask. Ideally they should then be intubated. This can be learned, but it is difficult if it is not something you do routinely. Keep the patient in left lateral recumbency and pass a 10fr red rubber catheter into the stomach that has extra fenestrations cut in it. Use a catheter tipped 60ml syringe to extract fluid and gas from the stomach. This helps relieve pressure on the diaphragm and the pyloric outflow tract. After manipulation of the gastric tube and successful decompression, administer ¼ tsp of Epsom salts in 10cc water via the gastric tube. IV catheter should be placed while patient is under anesthesia and fluid support and heat support should be provided. Give the rabbit 0.5mg/kg IV of midazolam to keep them calm. Keep them in left lateral recumbency and check the stomach every 30 minutes. If they re-bloat, you have to do emergency surgery to relieve the obstruction. Unlike ferrets, rabbits do not tolerate GI surgery well. Massive peripheral support of the patients is required.

Respiratory illness is quite common in rabbits. They will occasionally present on emergency service for respiratory problems. They are obligate nasal breathers. Much progress can be made quickly by clearing away any caked mucopurulent debris from the nose. Soak it off with a warm wet compress and use a bulb “snot sucker” as needed. Be very careful not to stress the rabbit too much. Use midazolam at 0.5-1.0mg/kg IM, SQ as needed to calm them down so they will tolerate the necessary intervention. Nebulization therapy is tremendously useful in these situations. I recommend the following “recipe”: 5.0ml saline, 1.0cc 50mg/ml amikacin, 0.5ml, aminophylline, 0.25ml Mucomyst. Nebulize via mask or in a box for 15 minutes q 6-8 hrs.

Antibiotic choice for rabbits with respiratory infections:

- No oral penicillin
- Pen G ok parenterally at 50,000 IU/kg SQ q 48hrs
- Enrofloxacin 10mg/kg SQ or PO q 12
- Tribissen 30mg/kg PO q 12
- Marbofloxacin 10mg/kg PO q 24
- Chloramphenicol 50-75mg/kg PO , SQ q 8
- Zithromax 50mg/kg PO q 24

Other respiratory emergencies can occur secondary to heart disease or neoplasia (thymoma being relatively common).

Avian Emergencies

- HBC – hit by ceiling fan
- Predation – traumatic amputation
- Chronic illness with acute presentation
- Egg-bound
- Respiratory distress
- Coelomic fluid

Trauma – traditional hemostasis methods

- Splint broken bones with padding
- Tibiotarsus – wetproof tape splint
- Wing fracture – figure “8” bandage. Slit 1-2 cm of end of Vet Wrap lengthwise at end to secure over shoulder
- Pain management see above doses and frequencies.
- Abx – Enrofloxacin at 10mg/kg IM or PO q 12, Clavamox at 125.0mg/kg PO q 12

Chronic illness will acute presentation

- Infectious
- Neoplastic
- Oxygen
- Heat support
- SQ or IV fluids
- Antibiotics
- Pain relief? Gout is VERY painful

Egg binding

- Usually due to chronic malnutrition or excessive egg production
- Oxygen
- Heat support
- SQ or IV fluids
- Calcium gluconate at 100mg/kg IM
- Lubricate cloaca
- Antibiotics
- Dextrose via gavage tube
- Prostaglandin E2 alpha (Prepidil) intraocally more effective than oxytocin
- If egg is not passed within 24hrs consider isoflurane anesthesia and manual removal. Consider centesis to deflate egg.

Avian Emergencies Respiratory Distress

- Secondary to chronic disease
- Provide antibiotics, oxygen, heat support, fluids, nutritional support.
- Upper airway obstruction
- Foreign body such as seed hull or fungal granuloma.
- Air sac cannula placement into abdominal air sac. Secure in place with "Chinese finger knot". These can be

maintained for days while airway disease is addressed. You can administer anesthesia via air sac cannulas.

Coelomic fluid buildup can occur secondary to neoplasia, cardiac disease, infection or reproductive tract disease. Birds present with distended lower coelom, dyspnea and exercise intolerance. Drain the fluid with a small gauge needle.