

HOW TO INTRODUCE AVIAN AND EXOTIC PATIENTS TO YOUR PRACTICE

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Deciding to open your practice to seeing avian and exotic patients is definitely a great idea. Avian and exotic pets are growing in numbers and people are just as, and sometimes even more attached to them as others are to their pet dogs and cats. They are committed owners who can easily be trained to see the benefit of preventive wellness care. They are also often seeking very high levels of advanced medical and surgical care and they add a wonderful variety to your day! I'd like to introduce you to what I'd recommend for continuing education, resources, facilities, equipment, advertising and species-specific points of interest.

CONTINUING EDUCATION

Very few veterinary schools have coursework on avian and exotic animals. If you are a veterinary student, I would recommend doing a 2-4 week externship at an exclusively avian and exotic practice. If you are already graduated, there are several meetings a year that have a high concentration of avian and exotic lectures all in one place. This will be the first year that the Association of Reptile and Amphibian Veterinarians (ARAV), the Association of Exotic Mammal Veterinarians (AEMV) and the Association of Avian Veterinarians (AAV) are held together. This year's meeting will be in Milwaukee, WI August 8-15, 2009. The North American Veterinary Conference (NAVC) is held annually in Orlando, FL. NAVC has entire section devoted to avian and exotic pet medicine and surgery. This year's conference is January 17-21st, 2009. All of these meetings have a collection of top lecturers in the field. They also often have wet-labs where you can obtain hands-on experience with a wide variety of species. Please visit the websites for these organizations for more information and detailed meeting topics. Also, it is a great idea to join these organizations. Their memberships are not very expensive and have a wealth of information to share via newsletters and journals.

Websites:

- ARAV: www.arav.org
- AEMV: www.aemv.org
- AAV: www.aav.org
- NAVC: www.tnavc.org

LISTSERVES

Yes, we are all sometimes weary at the plethora of information that clients bring to us from the internet. However, there really are some fantastic resources for veterinarians who see avian and exotic patients on the internet. Veterinary Information Network (VIN) has message boards for aquatic, avian, small exotic mammal and reptile medicine. There are also two listserves that provide a tremendous wealth of

information and input on cases from some of the top people in the world. One is ExoticDVM. This listserve is a Yahoo groups list. It is limited to veterinarians and veterinary students only. You need to sign up for a Yahoo email address if you don't already have one. After that, you can request membership to the group by going to www.yahogroups.com and doing a search for "ExoticDVM" and follow the instructions for joining. This is a very active list which often has 10-15 emails per day. The group is very friendly in general and extremely helpful when you are stuck on a case, need help identifying a species or just need support or advice on avian and exotic practice in general. The other helpful active listserve is birdmed. This list originates from Australia and is limited to avian medicine discussions. This group is also extremely friendly and helpful. A request to join the group can be sent to <http://lists.murdoch.edu.au/mailman/listinfo/birdmed>.

WRITTEN MATERIAL RESOURCES

Whether you have been seeing avian and exotic patients for awhile, or are new to the field, you can learn a lot from the Exotic DVM bimonthly magazine. There are sections on husbandry, surgery techniques, practice tips and case reports.

BOOKS

If you are really committed to starting to see avian and exotic patients you will need to make a significant investment in your library. There is such an extreme variety of patients and presentations that will walk through your door. It is imperative to have a good set of references to look things up in. Below is a list of some of my favorite suggested references:

- [The Exotic Companion Medicine Handbook](#) – written by Dr. Cathy Johnson-Delaney and published by Zoological Education Network. This book is a wonderful two volume set that covers a wide variety of small mammals in one volume and reptiles, birds and fish in the other volume. Each section has easily accessible information on the biology of the species, husbandry, laboratory reference ranges, species-specific formulary and common disease conditions.
- [Ferrets, Rabbits and Rodents](#) by Dr. Katherine Quesenberry and Dr. James Carpenter. This reference is commonly referred to as "The Pink Book". This book has detailed information on rabbits, ferrets, guinea pigs, chinchillas, prairie dogs, small rodents, sugar gliders and hedgehogs. It is an excellent reference for husbandry, anatomy, medicine, imaging, oncology and surgery.
- [Manual of Exotic Pet Practice](#) by Dr. Mark Mitchell and Dr. Tom Tully. This book was just published in the past year. It covers everything from setting up your hospital to see exotics to the whole variety of species that are considered "exotics". This includes invertebrates, fish, amphibians,

reptiles, birds, marsupials, small rodents, ferrets, rabbits and wildlife.

- Textbook of Rabbit Medicine by Dr. Francis Harcourt-Brown – Extremely detailed and well referenced.
- Reptile Medicine and Surgery by Dr. Doug Mader – This book provides a pretty thorough review of reptile medicine and surgery.
- Avian Medicine by Drs. Altman, Clubb, Dorrenstein and Quesenberry.
- Clinical Avian Medicine by Dr. Greg Harrison and Dr. Teresa Lightfoot.
- Invertebrate Medicine by Dr. Greg Lewbart
- Fish Disease – Diagnosis and Treatment by Dr. Edward Noga
- Atlas of Diagnostic Radiology of Exotic Pets by Drs. Rubel, Isenbugel and Wolvekamp
- A Color Atlas of Anatomy of Small Laboratory Animals vol. 1 Rabbit and Guinea Pig by Drs. Popesko, Rajtova and Horak
- Veterinary Clinics of North America Exotic Animal Practice – bimonthly subscription
- Carpenter formulary*
- Avian and Exotic Animal Behavior by Drs. Bradley-Bays, Lightfoot and Mayer. Because many avian and exotic pets are prey species by nature that hide their symptoms of illness very well, patients are often brought in by the owners because of subtle changes in behavior. There are also involved behavioral problems of avian patients such as screaming, biting and feather damaging behavior that frequently precipitate a visit to the veterinarian. It is imperative to understand normal and abnormal behavior of the variety of species you will see.

This is by all means, not an exhaustive list of references, but these are the books I tend to grab off the shelf most often.

EQUIPMENT

Most of the equipment that you use to see dogs and cats can be utilized when seeing avian and exotic patients however, due to the small size of the patients and anatomic differences, there is a list of equipment below that is very useful to have when seeing avian and exotic patients.

Small scales – preferably a digital. Get one that weighs animals in the 1-5kg range accurately and a gram scale that weighs animals less than 1kg accurately. It is ideal to use a basket of some sort for frisky small mammals and birds and a perch for larger birds.

Incubators – MANY different brands and sizes available. Get one that you can supply oxygen to easily. Look for ease of cleaning and durability. These are great for hospitalizing patients in, nebulization treatments and recovery from surgery.

Magnification – this is CRITICAL and worth spending money on to get a good pair of magnification loops.

Warm room – this is ideal for housing sick and boarding reptiles. Be sure that you can change the environment or

caging inside the warm room to accommodate species with different heat, humidity and UV light requirements.

UVB meter – available from www.reptileUV.com Cost is approximately \$187. This is invaluable for testing UV bulbs that clients bring in with their reptile pets. You will be shocked when you start measuring some of these costly, even brand new bulbs! Be sure to educate your clients about how much (ALL) UVB light that glass and plastic filter out.

Rubber spatulas – These are great for using to pry open snake and lizard mouths without damaging the teeth.

Metal mouth/beak specula. These are helpful for keeping birds' mouths open when you are obtaining lab samples. They are also helpful for keeping ferrets' mouths open when tubing them with barium for diagnostic radiographs or for therapy for severe gastritis and enteritis.

Feeding tubes – get a variety of sizes to use for tube feeding birds and lizards.

Perches – for hospitalized birds.

Small, non-cuffed endotracheal tubes – 2, 2.5, 3, 3.5 – takes care of the majority of small mammals. Endotracheal tubes that taper significantly can be fashioned from red rubber tubes.

Dremmel – good for bird and prairie dog nails, trimming rabbit and rodent incisors.

High speed dental drill – also good for trimming rabbit and rodent incisors and well as evening molar crowns in rabbits, chinchillas and guinea pigs.

Microsurgery instruments - these are absolutely invaluable when operating on these tiny animals.

Hemoclips – VERY helpful when spaying tiny animals and doing other procedures that require quick and secure hemostasis.

Endoscopy unit – Invaluable for avian medicine. This instrumentation can be used to explore a variety of approaches to avian and reptile body cavities. It is also extremely helpful for nasal cavity and ear exams on rabbits as well.

Radiosurgery unit – This is very helpful for quick hemostasis in tiny patients and causes significantly less damage than laser units.

Mammography film or dental film – useful for higher detail images that are needed in the tiny patients. Digital radiography is much superior and becoming more affordable.

Small blood tubes – Ca EDTA tubes, heparin tubes and serum separator tubes.

In house chemistry machine that can process very small sample sizes. Popular units are Heska Spotchem, Abaxis and Heska I-stat.

Waiting room – try to think of this more as a “client education room”. Have a small DVD player available so that you can play educational DVDs for the clients. Educational handouts are a must! No matter how much we tell clients in the exam room, they absolutely must go home with written material. Also, if possible there should be a walled off or separate area for clients with avian and exotic pets to wait

away from the dog and cat patients. Keep in mind that many of these species are prey animals and they are often already sick and stressed. You may also need to consider a separate entryway for large predators such as large snakes and large cats.

Inventory - I have learned over the years that if I want clients to have certain foods or supplies for their pets I need to have them available right at the clinic! Have at least one brand or type of pet food for each species. Other important items to consider stocking are quality UV light bulbs and thermometers.

Provisions for emergency care – if you are not willing to see your own avian and exotic emergencies be sure to collaborate with a local emergency clinic and find out if the clinicians there will be willing to be trained to see your avian and exotic patient emergencies.

Staff – I cannot emphasize enough how key it is to have staff that can properly assist you in introducing avian and exotic pet care to your practice. The receptionists must be able to sort out what is or is not an emergency in these different species. They must also be able to give proper advice. For example, when confirming surgery appointments it is imperative that they know to have ferret owners fast their patients at least 6 hrs prior to surgery but to never tell a rabbit client to fast their rabbit. Exotic animal clients are very knowledge savvy and will assume that you don't know what you are doing if your staff tells them to fast their rabbit prior to surgery. Good technical staff is obviously important in any field of veterinary medicine. In avian and exotic pet medicine it is even more so. Handling, medicating, venipuncture, surgery monitoring, patient observation and nursing care is just so different in these patients.

Pharmacy – it is common to need to compound medications for use with avian and exotic patients. Birds and small mammals do well with sweet or fruity flavored liquids and ferrets do well with medications such as prednisone (a common prescription for ferrets) made up in oily FerreTone. An avian and exotic animal formulary is essential!

ADVERTISING

As with any other field, the best advertising you can get is word of mouth. I'd highly recommend that you start keeping a bird such as a budgie as a pet and consider having a pet rabbit, ferret, rat, lizard, snake or tortoise! It is only when you actually LIVE with these animals that you truly come to understand their behavior, habits and pet appeal! This also lends you much greater credibility to your clients when they find out you have these animals as pets as well. Consider visiting the local pet stores and get to know what they have available for avian exotic pets – the pets themselves as well as their food and supplies. Find out about the local bird, rabbit, ferret and reptile clubs and offer to speak at their meetings.

Have avian and exotic animals on your business cards, signs, welcome cards and sympathy cards.

If you are interested and willing to see fish patients, have a fish aquarium in your waiting room.

Website – absolutely have a “web presence” and have avian and exotic animal information available on it.

COMMON AVIAN AND EXOTIC SPECIES, THE MOST COMMON THINGS THAT HAPPEN TO THEM AND THE MOST IMPORTANT “DO'S AND DON'TS”

When working with avian and exotic species it is very important to consider their different reactions to stress, their natural methods of defense and major points of weakness.

Birds - hide symptoms of illness WELL. If a bird patient is sick enough to merit hospitalization it is sick enough to die. Clients need to understand this. Birds in general are very sensitive to stress. The natural method of defense for most domesticated species is their beak. Keep in mind that a bird such as a macaw can easily break a brazil nut open with its beak. A finger is much easier to break. If ever presented with a bird of prey, be aware that their primary defense is their talons.

Important points to consider for handling birds:

Birds have fixed lungs; they do not expand and contract with the movement of air. Birds have a system of air sacs that act as “bellows” to move air through the lungs. When watching a bird breathe notice how its abdomen moves with each breath. It is imperative that the abdomen be kept free to move when restraining birds.

Birds have complete tracheal rings. Keeping in mind that their primary method of defense is their beak it is to your advantage to hold the bird very securely around the neck. When your hand is positioned correctly you will be able to deflect the birds beak safely away from you and your assistant while keeping the bird secure.

Tips for catching fractious birds:

Use a towel or washcloth depending on the size of the bird. To catch a small bird out of a cage, note the position of the bird in the cage then have an assistant quickly turn off the exam room lights while you grab the bird in the dark. For larger birds use a towel to quickly restrain them as they are perching on your arm or on the table. When grabbing a larger bird in this manner your first priority is to secure the neck. NEVER GRAB A LARGE BIRD OFF OF AN OWNER! SOMEBODY WILL GET BIT. Have the owner set the bird on the table or hand the bird to you.

One of the most important aspects to handling birds is to be completely ready before you catch up the bird. Keep in mind that they stress easily and you want to minimize handling time. If you need blood tubes, a scale or whatever, have it ready BEFORE catching up the bird.

You will often be called upon to “groom” birds. Familiarize yourself with different species needs for controlling flight. A chunky amazon will need fewer feathers trimmed to inhibit flight than a streamline cockatiel or macaw. One of the most common mistakes I see is wings being grossly overtrimmed. The objective of a wing trim is to stop the bird from getting lift. The bird should still be able to “coast” down. There is no need to trim secondary feathers! Start from the wing tip and

trim in. Even on light, streamline birds, there is no need to trim more than 6-7 feathers at the MOST.

Small mammals

Rabbits

Rabbits are also easily stressed - especially older rabbits and rabbits with neurological problems. Their main methods of defense are teeth and nails.

The most important thing to remember about handling rabbits is that their skeleton is only 8% of their body weight. Their bones are very light and brittle, but their musculature is very strong. These are the facts behind the caution of a rabbit being able to break its own back if not handled properly. When examining a rabbit, it is best to cradle it in your lap. At a minimum have a towel under the rabbit on the exam table. This will provide a more secure footing and thus will stress the animal less.

- Accurate weight - best to use a baby scale.
- Ears - flakes? wax? mites?
- Eyes - any discharge ant the medial canthus? patency of nasolacrimal ducts.
- Nose - discharge? any discharge on forepaws?
- Teeth - check for molar occlusion as well as incisor occlusion!
- Chest - Normal rate and rhythm of heart - 200-250bpm, sinus rhythm, clear lung fields.
- Abd - palpate thoroughly - stomach often doughy, make sure you feel normal formed fecal pellets, kidneys are highly mobile. Listen for gut sounds!
- Integ - common problems - ringworm and cheyletiella, shedding pattern.
- MS - normal conformation and movement.
- Neuro - symmetry, coordination.

Best venipuncture site for rabbits is the lateral saphenous vein. Avoid using the ear vessels for venipuncture and catheters. The ear pinna is a very sensitive structure and it is possible to cause damage to the pinna by using these vessels.

VERY important – you do not assess a rabbit's hydration status by checking skin turgor or tackiness of their mucous membranes. Rabbits very efficiently pull water out of their GI tract to keep the rest of the body hydrated. Assess hydration by palpation of the abdomen. A dehydrated rabbit will have a very doughy cecum. As with getting used to dog and cat palpation, this does take practice. It is NORMAL for the stomach to be VERY doughy, the cecum, however, should not be. On a normal rabbit you cannot even distinguish “borders” of the cecum because it is a very large “squishy” structure. In a dehydrated rabbit you can feel details of a very doughy cecum.

NEVER prescribe oral penicillins to rabbits! You will cause severe intestinal flora dysbiosis – mainly killing of the beneficial bacteria such as Bacteroides and causing an overgrowth of Clostridia. This usually results in death of the rabbit. Penicillins can be used judiciously parenterally.

When beginning to see rabbits, it is VERY important that

you understand how their gastrointestinal tract functions. Rabbits that are on diets that have a lot of simple carbohydrates in them frequently present with what the owners refer to as diarrhea. It is not uncommon for a veterinarian who has just begun to see rabbits as patients to diagnosis this as diarrhea secondary to coccidiosis. What is really going on is cecal dysbiosis, or malformation of the essential cecotropes (“night feces”). The organisms that are frequently misdiagnosed as coccidian are actually the normal yeast species that are part of the biology of the cecum.

Ferrets

Main method of defense - teeth! The best way to restrain a ferret is to scruff them securely. This is safe for you and the ferret. When scruffing a ferret you will notice them relaxing considerably. They often yawn when scruffed. This is a normal reaction.

Ferret physical exam:

- Look for ear tattoo - two blue dots in the right ear means that the ferret came from Marshall Farms and has already been spayed or neutered (and de-scented).
- Accurate weight in grams
- EENT - discharge, symmetry, color of mm (ear mites extremely common needs aggressive treatment to rid the beast of these – MilbeMite + cleaning + revolution + environmental cleaning)
- Chest - normal sinus rhythm, 200 - 250 bpm
- Abd- very common to palpate a huge spleen - can be benign or a sign of a problem.
- Integ - ectoparasites, alopecia secondary to hormonal problems. It is NORMAL for ferrets to have very thick “doughy” skin that has +++turgor – not good place to assess hydration status – check mms – wet, CRT <2”
- MS - normal conformation and movement
- Neuro - coordination, responsiveness.

The best place for venipuncture in a ferret is the cranial vena cava. Physical landmarks are the manubrium and the first rib. Use a 27 ½ gauge insulin needle and enter at an approximately 45 degree angle just off the edge of the bone.

The most common problems that you see with ferrets are adrenal disease, insulinomas and gastrointestinal disease.

Adrenal disease and treatment of it are very complex discussions. My purpose here is just to introduce you to the basics. In ferrets, adrenal disease most commonly presents with generalized alopecia that starts on the caudal dorsum. It can also present as straining to urinate – secondary to an enlarged prostate, an enlarged vulva, increased mammary development, increased aggression and pruritus. A definitive diagnosis is made by sending 1 ml of serum to the endocrinology lab at the University of Tennessee Veterinary School. This will give you estradiol, 17 OH progesterone and androstenedione. Elevated levels of one or more of these hormones definitively diagnoses adrenal disease. Another means of diagnosing the disease is via ultrasound. This

requires significant skill and practice at imaging the adrenal glands. There are several treatment options for adrenal disease. These include surgery to remove the affected gland(s), monthly Lupron injections, melatonin implants and deslorelin implants. Treatment needs to be catered to the individual with consideration given to the animal's general condition, age, severity of the disease and owner's financial limitations.

Ferrets with insulinoma often present in a hypoglycemic crisis. They are often barely responsive, drooling and glassy eyed. A pre-emptive diagnosis is made by checking a blood sugar level. A blood sugar of less than 60mg/dl in the presence of these symptoms is a very strong indicator that the ferret has an insulinoma. Blood insulin levels are not helpful for diagnosing this condition in ferrets. An IV catheter should be placed in a cephalic vein as soon as possible and dextrose should be administered immediately. Treatment options for ferrets with insulinoma include medical management with prednisone and/or proglycem or partial pancreatectomy. Surgery is rarely curative for this disease. This disease tends to be metastatic and almost always returns. Ferrets should be monitored closely. Some owners can even be taught to check their ferret's blood sugar at home. Since this is such a common disease in ferrets, we routinely check blood sugars as part of the annual wellness exam on all ferrets over the age of three years.

Gastrointestinal disease is another common plague of ferrets. A natural diet for a ferret would be mice or other small furry animals. In our domestic environment, they are most often fed a dry commercial kibble. There are also a plethora of treats available commercially as well as around the home – i.e., raisins, banana, cereal – that owners like to give their pets. The high amounts of carbohydrates can be a major contributor to diarrhea. Although it would be better for the ferrets, it is just not practical for ferret owners to feed a natural diet. The best alternative is to choose a ferret diet that has at least 45-50% protein that comes from an animal source and encourage owners to eliminate or at least strictly limit other carbohydrate-rich treats. Other common causes of diarrhea are lymphoma and inflammatory bowel disease.

Due to their curious nature, it is also common for ferrets to eat a wide variety of household objects that can easily cause an intestinal obstruction. Among other things, I have removed, ear plugs, pencil erasers, sneaker sole, silicone caulking and balloons from ferret intestines.

Reptiles

More so than any other species I see, reptile's state of disease is often directly related to their husbandry. It is imperative that owners are educated on where their pet would live naturally – i.e., desert vs. humid mountainous region. Also, they need to do their homework – with your help – to find out how to feed their species properly. Are they insect eaters? How do you properly feed insect eaters? They need to be taught about "gut-loading". Some animals eat insects when they are young and are then strict herbivores as adults. UV light is imperative for most reptile species.

Owners should be instructed to bring in their UV bulb to be checked for quality and UV output as part of the exam. Despite the best bulbs on the market, NOTHING can take the place of unfiltered sunlight. Keep in mind that glass and plastic filter out all UV light and screen can filter out up to 50% of UV light. I recommend that all reptiles get out in natural sunlight for an average of 10 hrs per week.

Fish

Believe it or not, there is a significant population of people with pet fish that may seek your services! Fish medicine is very different from anything else! There are some fantastic CE courses on VIN for fish medicine. The most important thing is that you have a good understanding of water quality. A lot of fish disease is directly linked to their water quality. Even if you are just beginning in fish medicine you may be surprised at how receptive fish clients are to your services. Be up front about your knowledge and skill level. I have found fish clients to be wonderful when I take this approach. I don't admit to being a "fish expert", but if I am willing to at least try, call someone who knows or look it up to help their fish, I have found fish owners to be very grateful. This is also true for tarantula owners!

When opening your practice to avian and exotic patients, keep in mind that if you see ANY "exotic" species, clients may assume you will see ALL exotic species. Be prepared ahead of time to let your staff and potential clients know what species you are willing to see. Primates and exotic cats are out there as well. Primates can carry a plethora of zoonotic diseases. I strongly recommend an agreement with primate owners that they agree to appropriate testing for their species if we are to establish a working relationship. This often results in a \$500-600 first visit, but I will not work with primates that I cannot feel comfortable with in regard to their potential threat to myself and my staff.

The large exotic cat clients have been the most challenging for me to work with. I came to a point quite quickly that if they would not let me do things my way – i.e., use a dart gun to sedate large cats – I wouldn't work with them. Another thing for you to consider BEFORE you open your doors to large cat clients is whether or not you will declaw any cubs. I strongly recommend against this procedure. It is widely considered inhumane in the veterinary profession. There are too many animals to count out there that are permanently lame from this procedure. There is a huge difference between doing this procedure on a 10 lb housecat vs. a 150 lb cougar. There is a very high incidence of crippling arthritis in these animals later in life.

In these changing economic times, it can be tempting to accept any patient that walks through the door just to have the business. Adding avian and exotic services to your practice can be a great help to your business. I would encourage you to prepare wisely to service these patients with the same level of care you provide for your dog and cat patients. The variety and challenges they provide can add a refreshing new beginning to your practice of veterinary medicine.