

Avian Hospital Care

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Following the examination and diagnostic testing, if a bird has been diagnosed to be sick, the method of treatment must be determined. In most cases the birds are sent home along with the appropriate medications and instructions for their administration. If the bird has been ruffled instructions are given to keep the bird warm either through the implementation of a heating lamp or a home-made incubator. A heating pad on the side of the cage and the entire cage (and heating pad) wrapped in saran wrap with holes provided for ventilation makes an excellent home incubator. The owner is told to monitor the bird for any changes and count daily droppings.

However some birds are too ill to be sent home and require varying degrees of hospital care. A vomiting bird should rarely be sent home; rather it should be hospitalized and medicated until the vomiting subsides. Further medicating at home can then be continued when the bird is stable. Some birds are so ill that minimal or no handling/diagnostics can be performed with basic supportive care instituted until stabilized and then diagnostics can be completed. The basic means of supportive care for a hospitalized bird include, heat, fluid replacement, drug therapy and gavage feeding.

We take great pride in our bird hospital. We have multiple areas where we can hospitalize birds, including an isolation area, with venting to the outside, where we place cases we deem to be contagious. Our main bird hospital has multiple infant incubators, modified so we can safely utilize them for pet birds and have a heat/humidity controlled environment. Smaller birds are placed in their own cages in separate incubators. A technician is assigned to manage the bird hospital daily. The doctors write up the daily treatment and make written observations about their cases. The bird room technician transfers this information to the receptionists so that when a client calls in they can get reports on how their pet is progressing as well as any additional diagnostics or treatment changes. The bird room technician's primary responsibility is the bird hospital as they will treat and monitor the hospitalized patients all throughout the day.

What exactly is done for hospitalized birds?

Heat

A temperature controlled environment is essential for the sick bird. Commercial avian incubators or modified infant incubators from human hospitals (which we utilize) are ideal, however, kennels/cages with heat lamps (which are used for large birds) and aquaria with heating pads/heat lamps can be used. Sick, ruffled birds should be maintained between 80-90 degrees F, some critically ill birds may require up to 100 degrees F. Normal body temperature for a bird ranges between 105-107 degrees F. Their response to the heat is monitored. If the bird is huddled by the heat source, additional heat may need to be provided. If the bird has moved away from the heat, feathers slicked down and wings away from body and panting, then the heat should be reduced. It is extremely important to have a source of humidity available in the incubator. Most quality avian and human incubators have a means of providing and controlling humidity levels. If not available in the incubator or the home made set up then a source of moisture must be provided such as a jar of water with many holes punctured in the cap as dry heat could lead to further dehydration.

Fluid Therapy

Advances in the use of fluid therapy have led to great improvement in survival rate of sick birds. The most rapid means of fluid administration is intravenous fluids. Birds will not tolerate standard IV catheterization so IV boluses of fluids can be administered. The placement of an intraosseus (actually placed inside the marrow cavity of certain bones) catheter has shown to be quite effective in providing fluid therapy. Because of the safety of isoflurane anesthesia it may be used during catheter placement but because the birds this technique would be used on are already debilitated so discretion is used. The majority of the time

anesthesia should not be used for the procedure as IV fluid therapy is usually reserved for critically ill birds.

The catheter can be placed in any bone with a rich marrow cavity. Intraosseous fluids are nearly always placed into the dorsal and lateral portion of the distal ulna, although the proximal tibia, proximal ulna, and distal radius also can be used. The proximal tibia is ideal for short term usage, the distal ulna better for long term usage in medium and large birds. Pneumatic bones (containing air and connecting to the air sac system) such as the humerus or femur cannot be used. In medium to large birds, an 18 to 22 gauge, 1.5 to 2.5 inch spinal needle can be used as a cannula. In smaller birds a 25 to 30 gauge hypodermic needle can be used. After plucking and cleaning the skin over the accessible end of the bone selected, the needle is held in alignment with the long axis of the bone and rotated through the cortex into the cavity. The stylet will prevent a bone plug from blocking the needle; after its removal, the needle hub is taped and sutured in place, and the wing is secured with a figure eight bandage. A burette or infusion pump then is used to regulate fluid volume administration. The system often can be left in place for three or more days. Fortunately, this technique is only reserved for critically ill birds and other techniques of fluid administration are performed.

In the majority of cases rapid administration of fluids is not critical so subcutaneous (under the skin) fluids can be given. Multiple sites are available including the webs of the wings, intrascapular (between the shoulder blades) region, breast and inguinal region. A 22 gauge needle can be used to deliver the fluids which are administered until the skin is taut. Using multiple sites 5ml or more can be given to a budgie and up to 40ml to a macaw. Fluid replacement will also be assisted through gavage feeding, however in seriously ill birds either subcutaneous or IV fluids should be implemented to hasten stabilization. The disadvantage to subcutaneous fluids is their slow absorption rates. In debilitated birds the absorption of subcutaneous fluids may be further delayed so IV fluids would be preferred.

Drug Therapy

Medication techniques include intramuscular and subcutaneous injections, oral administration, nebulization, and topical administration. Frequently with critically ill birds we are forced to implement a "best guess" therapy until diagnostics and cultures are completed. Vomiting birds should never be given oral antibiotics rather injectables for rapid, effective absorption. If kidney dysfunction is suspected, utilize the aminoglycosides with caution as they can compromise kidney function. Dexamethasone (a steroid) can be given to "shocky" birds. Vitamin B complex and calcium gluconate can be administered by injection to boost debilitated birds. If renal disease is suspected calcium supplementation should be used with caution to prevent mineralization of the kidney. Once the bird is stabilized and vomiting ceases (if it had occurred), the bird is placed on oral antibiotics. If the bird tolerates treatment and is eating well it is sent home with the owner to complete treatment.

The judicious use of topical alcohol will greatly assist in the placement of subcutaneous injections (for example ivermectin, vaccines) and intramuscular injections. Intramuscular injections are easily given in the breast muscle. As the sternum is a large protective bone in birds there is little danger of penetrating when an injection is given provided key landmarks are identified. Before the injection is given the top edge of the sternum (near the crop) is identified and the bottom edge (the upper aspect of the abdomen). As long as the injection is given in the breast muscle safely within these limits and near the keel, the central prominence of the sternum, it can easily be administered. If the injections are given too far out to the sides it could be administered accidentally between the ribs. Intramuscular injections given to finches and neonatal birds are placed at a shallow angle to minimize hemorrhage and to avoid penetration of the sternum.

In general, oral medications are best given directly by mouth or by gavage (special type feeding tubes). Some medications also are suitable for inclusion in hand feeding formula, and in this case the treatment technician can be fairly sure of complete administration. Other food medications are more difficult to monitor. Birds who are accustomed to eating formulated diets sometimes can be medicated with a commercially prepared medicated diet or medication can be added to the moistened pellet or mash. Seed eating parrots sometimes can be treated with a medicated diet consisting of cooked rice, corn, and beans. These items usually are recognized by a hungry bird as food but are moist enough to carry medication into the bird. Hiding medication in grapes or other food items rarely works because of the tendency of parrots to

dissect the food. However, this method works well for raptors and toucans. Water medications also are unreliable, particularly in birds such as the parakeet which drink less water than other species. However, birds on formulated diets (including parakeets) do tend to drink more water. The bitter taste of many medications (for example, enrofloxacin) may discourage the bird from drinking normally, an undesirable effect in the sick bird which may already be dehydrated. Some medications are unstable in drinking water or when exposed to light.

Topical medications, especially creams, may be very useful in avian medicine but should be used in plucked areas, preferably with a bandage. Owners must be cautioned to use only tiny amounts of ointments to avoid feather contamination. We prefer topical treatments that have a water base.

Nebulization

Nebulization sometimes is used to deliver medication to the respiratory system of pet birds, and is a very effective treatment for respiratory disease but in general, should be considered as a supplement to systemic medications. The effectiveness of nebulization is that blood supply is poor to the air sac system so it is difficult to get therapeutic levels of drugs into the air sacs in the case of disease. As nebulization leads to the creation of mist of medication that is inhaled, it is able to work directly in the respiratory tract and especially the air sacs. The bird is placed in a chamber and the nebulizer is connected so that it fills the chamber with the medication. Nebulization treatment periods may run from 15 to 30 minutes two to three times daily. The medications used in the nebulizer include antibiotics, bronchodilators (to aid breathing) and antifungals (a useful tool in treating systemic fungal infections such as aspergillosis).

Force Feeding/Gavage Feeding

Most sick birds have either stopped eating or are not eating enough to maintain themselves, so supplemental feeding is essential. A variety of feeding solutions can be used. In a bird that is vomiting, very dilute solutions are given in small amounts until the passage of food begins and then gradually increase the thickness until conversion to a thicker, more of a maintenance solution. If the hospitalized bird is in reasonably good condition maintenance type solutions can be utilized immediately.

The gavage feedings can be administered with rubber Sovereign urethral catheters, which we prefer. They are easily introduced into the crop and non-traumatic if used properly. Many practitioners are using the metal feeding tube with the ball attachment on the end. It is all a matter of personal preference.

Before tube feeding a bird the fullness of the crop must be evaluated. Feeding a bird with a partially full crop is risky as it could back up into the esophagus leading to aspiration. If the crop is not emptying removal of the crop contents through aspiration is performed and then small amounts of dilute feeding solution added.

The gavage feeding can be performed several times daily depending upon the emptying time of the crop. Thinner solutions will pass through much more rapidly. Generally hospitalized birds are gavage fed two to three times daily.

This material was adapted from *Essentials of Avian Medicine: A Practitioner's Guide 2nd Edition* by Peter S. Sakas DVM, MS. AAHA Press (2002).