

Necropsies in Pet Birds

Peter S. Sakas DVM, MS

Niles Animal Hospital and Bird Medical Center

7278 N. Milwaukee Ave. Niles, IL 60714

Ph 847-647-9325 FAX 847-647-8498

www.nilesanimalhospital.com

First of all let us define a few terms, biopsy, histopathology, autopsy and necropsy. Understanding these terms and their differences will greatly aid our discussion.

A **biopsy** is when a sample is taken from a living animal for diagnostic evaluation. This usually refers to tissue samples which are taken from abnormal areas or growths. These samples are placed in special solutions to preserve them, such as formalin. The sample is then sent to a pathologist who can then section the samples on a special instrument that slices them super thin and evaluate them in a process called **histopathology**. The sectioned samples may be specially stained and are evaluated microscopically so that a diagnosis can be made.

Avian Necropsy

What is the difference between a **necropsy** and an **autopsy**? Let us look at the words themselves. “Necro” refers to “dead” and “psy” to study, so necropsy is the “study of the dead.” “Auto” refers to “self” so autopsy is “self study.” So an autopsy is technically a necropsy, but because a “human is performing it on a human” it is an autopsy.

Performing necropsies is an important part of avian medicine. Frequently avian veterinarians are presented with birds that had “died suddenly” at home. Birds are very sensitive to airborne toxins or other potential household hazards so they can sometimes die suddenly at home. However, because birds tend to hide their illnesses, quite often they are near death or dead by the time a client notices that there is a disease condition. Necropsies can help determine the cause of these ‘mysterious’ deaths. Necropsies are also useful for avian practitioners due to the wide array of conditions seen in pet birds.

It is of utmost importance to have a necropsy performed if the cause of death is uncertain or may have a possible infectious origin, especially if there are other birds that may have had contact with the deceased bird. In addition, the risk always exists for zoonotic diseases (diseases of animals that can be transmitted to people), which should be ruled out to protect your family.

If a veterinarian had a bird under their treatment for a disease condition die, it is good practice to recommend a necropsy, as both the veterinarian and pet owner will benefit from the knowledge gained. Sometimes the cause of death may not be readily obvious so that tissues may need to be sent out for histopathologic evaluation by an avian pathologist.

Many times clients are hesitant to have a necropsy performed because they would like to take the bird home for burial or do not want the bird dissected. These fears can be alleviated by the option of a “cosmetic” necropsy. In a “cosmetic” necropsy few or no feathers are removed and an opening is made just large enough to adequately evaluate the internal organs and obtain whatever samples are necessary. The incision is then sutured or tissue glued so that minimal disturbance is evident. However, depending upon the circumstances a complete and thorough necropsy is preferred.

The necropsy should be performed as soon as possible, otherwise the bird should be refrigerated, as autolysis (tissue breakdown) can occur very quickly in birds due to their high body temperature. Wetting the bird with soapy water prior to refrigeration can facilitate cooling. The bird should never be frozen as artifactual tissue changes will ensue, making histologic interpretation difficult. If the bird cannot be brought in for a long period before a necropsy can be performed then it could be frozen. Freezing/thawing will make gross observations difficult and severely hamper histopathologic analysis as the ice crystals damage the tissues. However, viral or bacterial isolations and some toxicologic analyses can be conducted on frozen samples.

The instruments used for mammalian necropsy can also be used for birds, but smaller sizes facilitate the procedure. Due to the risk of potential zoonoses, gloves, and a surgical mask should be worn, the feathers should be soaked with soapy water to prevent aerosolization of pathogens, and the work area thoroughly disinfected following completion of the necropsy.

A detailed description of the avian necropsy technique is beyond the scope of our discussion, however, a few important points should be made. Before performing the actual dissection, the bird should be carefully evaluated by the veterinarian for overall condition and checked for any obvious external abnormalities such as wounds, swellings, discharges, and staining. A systematic approach should be followed when performing the necropsy.

Multiple samples should be taken and saved in 10% buffered formalin solution. If viral, bacterial or toxicologic studies may be needed, some tissue samples should be frozen. Cultures can also be obtained. If performing a necropsy on a neonate or juvenile, the Bursa of Fabricius (on the dorsal aspect (top side) of the cloaca) should be checked and if present it should be submitted due to its involvement in many disease conditions. The necropsy findings and diagnostic impressions should be recorded. Finally, when submitting samples, it is of critical importance to deal with a pathologist or laboratory that is skilled in avian histopathology. Avian veterinarians are fortunate because due to the interest in pet birds many excellent diagnostic facilities and pathologists are available.

Adapted from *Avian Medicine: A Practitioner's Guide 2nd Edition*. Peter S. Sakas DVM. AAHA Press 2002.