

Necropsy Procedure Involved in Different Species Existing in Animal Kingdom

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Short Communication

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DESCRIPTION

Necropsy in carnivores

Depending on the carcass size, carnivores are placed in dorsal or lateral recumbency. After completion of the external examination and sample collection *in situ* examination and collection of sterile samples and samples for ancillary diagnostics or archiving, the internal organs are removed and more thoroughly examined. Examine the thoracic cavity and remove the pluck. The pluck includes the tongue, oropharynx and esophagus, thyroid and parathyroid glands, larynx, trachea, lungs, thymus, thoracic lymph nodes and the heart and pericardial sac. Prosectors may elect to remove and collect samples from the thyroid and parathyroid glands prior to removing the pluck as they are relatively small and easily overlooked or lost during a necropsy. Examine and collect samples of tongue, thyroid and parathyroid glands, thymus and lymph nodes. Open the esophagus along its length noting mucosal changes and intraluminal content. Open the trachea along its length and the bronchi and major vessels into the lungs noting mucosal changes. Palpate the lungs, noting their consistency any nodules and color and consistency of fluid that drains from cut surfaces note whether lung samples sink or float in formalin ^[1].

Procedure of necropsy

Open the chambers of the heart and vessels noting inconsistencies in the heart vessels; dull, adherent clots and defects in the walls. Collect samples of all of the above tissues. Heart samples should include papillary muscles, valves and vessels. The organs in the abdomen include the stomach and intestines, hemotopoietic tissues, endocrine tissues and the urogenital tract, which may be removed en bloc then further dissected by organ system after removal. An alternate approach is to examine, remove dissect and collect tissue samples by organ system; endocrine, digestive system, liver and gall bladder with or independent of the stomach, pancreas, ceca and small, large intestines and urogenital systems. Prosectors may elect to remove and collect samples from the adrenal glands prior to remove and collect samples from the adrenal glands prior to removal of other tissues as they are relatively small and can be difficult to identify in general or if the abdomen becomes contaminated by blood or gut contents during tissue or organ removal. Prosectors may also choose to linearize the intestinal tract to allow better visualization of the abdominal organs in situ prior to removal of other organs or organ systems [2].

Examination of the abdominal viscera occurs by longitudinally bisecting or making series of parallel cuts in solid tissues and opening tubular or saccular structures along their length. Paired endocrine and other bilateral organs should be examined independently and in relation to the contralateral organ. Samples should be collected from each of these paired organs. Note any inconsistencies or abnormalities in the tissues and the content and consistency of intraluminal materials or fluids. There are two basic approaches to examination and removal of the brain and pituitary gland. The first and simplest after disarticulating the head at the atlanto-occipital joint and removing the skin and soft tissues of the head, is to longitudinally bisect the head along midline. Many pathologists however prefer, when practical removal of the intact brain. This is done by removing a roughly rhomboid shaped skull cap through a set of bilateral, parasagittal cuts that extend rostrally from the lateral aspect of the occipital condyles and are connected by a coronal cut in the proximal parietal bone. Removal of connective tissues overlying the sella turcica and adjacent bone is often necessary for exposure and collection of the pituitary gland [3].

Necropsy in ruminants and herbivores

Ruminant necropsies are often performed in left lateral recumbence such that the approach to the abdomen places the rumen deep to other parenchymal organs such as the liver and spleen. The procedure is otherwise like that for carnivores.

Special mention of anthrax, a serious zoonotic bacterial disease that is caused by the bacterium species can be fatal in humans is of particular concern during ruminant necropsies though it should be remembered that other species can also be infected. The most common gross finding is bloody discharge from body orifices. Another finding that should raise the suspicion of anthrax is a swollen spleen that exudes tarry, black blood on cut section. If anthrax is suspected a necropsy should not proceed and the body should not be moved until testing to confirm or exclude its presence is completed and appropriate authorities are notified for their input and recommendations about how best to proceed. If possible, guarding the carcass to prevent scavenging while diagnostic testing is being performed is recommended. Multiple cytologic preparations of blood or aspirates from the thoracic cavity or tissue or giema stain. The bacteria are large bacilli with square ends and a clear or pale halo. Bacterial culture can be performed for confirmation, but cytology will typically provide the quicker results. If positive, necropsy should not proceed and the carcass should be burned and or buried [4].

Necropsy in marine mammals

Marine mammal anatomy and necropsy are similar to that of terrestrial mammals, especially carnivores with some notable exceptions. This includes a blowhole in cetaceans that is the proximal end of the respiratory tract and opens rostral to the brain on the dorsal surface of the head, and hemi-diaphragms in manatees and dugongs that along with the gastrointestinal tract, must be removed prior to in situ examination of the lungs. For large whales, flensing knives are useful and often necessary to remove the skin and thick blubber layer.

Necropsy in birds

In birds, wetting the carcass or ventrum with water, 70% ethanol or disinfectant is a quick solution for managing the flight of feathers that are released when opening a carcass. Upon opening the carcass assess the air sacs for transparency opacity, fluids or plaques. In birds, there are two common approaches for the removal and examination of the organs removal of all tissues en bloc except for the lungs, kidneys. Adrenal glands and gonads. For the gastrointestinal tract, pancreas is often collected attached to one or both adjacent lengths of duodenum.

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