

Post Mortem Examination of Animals

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Detail post mortem examination (PM) of animals can give the proper avenue to investigate the actual cause of death. PM examination or autopsy should be carried out in bright day light, and not in artificial light or at night.

The P.M. examination needs to be carried out for the following findings to correlate it with the manifested signs or symptoms as revealed by the animal in the course of its sufferings or ailments. The specific findings in this regard are the condition of carcass, condition of visible mucosae, secretion or excretion from mouth, nostrils and other natural orifices if any, any wound on the body surface, nature of injury or type of wound, bullet holes, trauma, bruises, abrasions, laceration, fractures, burns and scalds, alopecia, cyanosis, haemorrhage, congestion of organs, colour and smell of stomach contents, oedema, post mortem staining, colour of blood and subcutaneous tissue, ejection of blood, condition of organs *etc.*

Requirements for Necropsy

1. Measuring Tape.
2. Small animal P.M. Set/Large animal P.M. Set.
3. Empty vials/bottles for collecting viscera (if poisoning is suspected)
4. Glass slides and clean papers for wrapping. Prepare heart blood smears and impression smears from liver, lungs, and spleen *etc.* for laboratory examination.
5. A small note book and a pencil to note down every point and detail findings on the spot.

How to Write Post Mortem Report

1. A correct and complete description of the animal is to be given (e.g. bloated, emaciated, hide bound, cachectia, injuries, wounds, fractures, burns *etc.*)
 - Condition of the skin coat
 - Secretions and excretions from the natural orifices
 - Condition of various regions like head, neck, chest *etc.*
 - Condition of the external genitalia
 - Condition of visible mucous membrane Condition of perineal region.

If there is an injury – that should be noted down in detail with the following:

Nature of injury, type of wounds or fracture, size, length, depth, direction, situation *etc.* Arrow shot wound, gunshot/bullet holes and marks of burning at entry and exit of bullets should be noted.

1. **For autopsy** – cut the carcass to open it and to see the lesions if any (find out the pathognomonic lesions– suspected for infectious diseases). This is also known as necropsy.
2. **The following changes are usually noticed after death** – which should be borne in mind for giving diagnosis out of autopsy. *e.g.* Rigor mortis, PM Staining, PM Softening (after death the tissues are softened by the action of autolytic enzymes and proteolytic ferments of the infecting bacteria), PM Clotting of blood (PM clot is soft and elastic, does not attach to the endothelium, but ante mortem clot is friable and non-elastic), P.M. bloat, hypostatic congestion, P.M. accumulation of bile around gallbladder *etc.*
3. In Anthrax no clot forms because the bacteria liquefy the fibrin. In sweet clover poisoning clotting does not occur since prothrombin activity is inhibited.
4. Open the carcass starting from the ventral abdomen along the course of linea alba and extend cranio dorsally till to the buccal cavity and caudally till to the perineum (anus). Examine the carcass – as per body cavity *e.g.* abdominal cavity, pelvic cavity, thoracic cavity, buccal cavity, cranial cavity and note down the abnormalities or changes organ wise and structure wise.
 1. Examine the organs properly for detectable abnormalities, cyanosis, congestion, haemorrhage of organs, colour and smell of stomach content, oedema. Post mortem staining, colour of blood and subcutaneous tissue, ejection of blood, condition of organs *etc.*
 2. For suspected case of poisoning – collect secretions and excretions if available – *e.g.* saliva, stool, urine, vomit, remnants of feed and fodder, ingesta, stomach content; collect different organs *e.g.* intestine, liver, lung, kidney, stomach with its contents *etc.*
 3. Preservation of materials – the collected materials should be preserved either in rectified spirit and or in saturated salt solution (45 g NaCl in 100 ml water). For forensic laboratory examination formalin should never be used. Samples after proper labelling *e.g.* the information *viz.* species, sex, age, weight, PM No, PM date, contents of the jar *e.g.* liver, lungs, spleen, kidney *etc.* preservatives used and signature with date, needs to be sent to the forensic laboratory after packing in a container with proper sealing. No necropsy is complete without histopathological examination of tissues.
 4. For histopathological examination and diagnosis – the organ specimen with active lesion alongwith some healthy portion needs to be collected and preserved in 10 per cent formalin solution. The visceral organs are liver, kidney, lung, spleen, lymph node, intestine *etc.* The tissues fixed in 10 per cent formal saline may be replaced by the 5 per cent strength of the same after a week.

5. Collection of specimens for laboratory diagnosis. Collection of specimens for specific diseases should be done most aseptically. Suitable materials should be collected and after proper fixation and preservation needs to be submitted for laboratory diagnosis.
6. Blood smears should be prepared from the carcass under necropsy studies for the demonstration of blood protozoa and microfilarae. The search of microfilarae should be conducted by direct examination of whole blood or of centrifuged blood samples in which haemolysis has been produced by addition of acetic acid.
7. On routine necropsy examination the most commonly sought worms are those located in the gastro intestinal tract and since the gastro intestinal tract contains most of the internal parasites, it is preferable to examine the contents of each portion separately.
8. Examine all the organs thoroughly for appreciable changes, for the presence of lesions like nodules, tumors, cysts, ulcers, necrosis, hemorrhage *etc.*