

Post Mortem Examination - A general guide for the collection of samples

General comments:

- Always wear protective clothing and perform the examination in appropriate premises.
- Collect samples of organs likely to be affected based on clinical signs present antemortem in addition to a basic selection of tissues (see below).
- Collect samples for microbiology/virology if an infectious disease is considered likely. This is particularly important in exotic species. Chilling or freezing these samples until histopathology results are available can be considered if expense is a problem.

What samples should I collect for histopathology?

- As routine, always collect samples of: Heart, Lung, Liver, Kidney, Spleen, Stomach, Small intestine, Large intestine and a Lymph node.

In addition to the tissues above the following samples should be collected in light of the clinical features:

- **Seizures:** The entire brain should be removed, fixed and submitted.
- **Sudden death:** Entire heart and brain.
- **Vomiting and/or diarrhoea:** Several pieces of stomach and a selection of levels of intestine. Pancreas.
- **Anaemia:** Bone marrow.

Brain and Spinal Cord Removal

Dog and Cat

- Remove the roof of the cranium to expose the dorsal aspect of the brain. This may be achieved, after removing the soft tissues overlying the skull, with either an oscillating saw or with a hammer and chisel. A circular path is followed beginning in the frontal sinuses and continuing around to the

back of the skull above the occipital condyles. Care must be taken to avoid damaging the underlying brain tissue.

- Remove the dura mater before attempting to remove the brain from the skull.
- In cats it is necessary to break through the bony tentorium which lies between the cerebrum and the cerebellum.
- Tip the head backward and cut the olfactory nerves. As the brain falls away the cranial nerves are cut.
- The spinal cord is cut and the brain should now be fixed for several days before sectioning and examination.
- The pituitary gland is usually left in the skull and it should be examined and removed from the pituitary fossa. Once fixed, the brain can be examined by making transverse serial sections; however, if tissue is to be sent for histopathology, then brains are best sent intact and formalin-fixed.
- To access the spinal cord the dorsum must first be skinned and the paravertebral muscles and ligamentum nuchae removed.
- Beginning at C1, insert bone forceps into the canal to cut the lateral laminae of the vertebra as close as possible to the body of the vertebra. This is continued along the length of the spine with the other hand lifting the separated portion to facilitate access. (Allowing the carcass to hang over the edge of the table may also be helpful).
- Transect the cauda equina and, lifting the cord with forceps, cut through the nerve roots beyond the dorsal ganglia to remove the cord intact.

In very young animals the skull can be opened with strong scissors and the brain is best fixed in situ in the opened skull prior to the completion of removal as it is very soft and prone to artefactual damage.