

Post Mortem Examination of Reptiles

First, check externally for lumps, ectoparasites, discoloration of the skin or eyes, then check the cloaca, nostrils and mouth for signs of infection, discharge, blood or parasites. Swab if appropriate.

For the PM examination itself, the reptile is best placed in dorsal recumbency. Shaped foam padding is useful to keep the subject in position. For chelonians you will need first to remove the plastron. This is achieved by severing the bony bridges between the plastron and the carapace using a reciprocating cast-cutting saw or lopping shears, then cutting through the muscular attachments which hold the plastron in place using a long knife.

To expose the coelomic cavity in non-chelonians, simply make a ventral midline incision from mandibular symphysis to cloaca. Reflect the skin laterally and pin out if possible.

In most well fed snakes the first thing you will see are the coelomic fat bodies. These will occupy a greater or lesser proportion of the cavity according to the state of nutrition. They are usually white, glistening and large, concealing many of the other viscera, but in malnourished animals may be shrunken and dark, almost unidentifiable as fat.

Reflect or remove the fat bodies to reveal all of the viscera. Try always to approach PM examinations in an orderly fashion; that way you should avoid missing anything. A systematic approach is as good as any other. Examine viscera from each system in turn looking for signs of infection, swellings, discoloration, parasites, foreign bodies, abnormal discharges/exudates, enlargement or reduction in size and sample and/or swab as appropriate.

Respiratory system

Incise the trachea and mainstem bronchi and examine the lungs. The left lung is vestigial or absent in most snakes. Check lung(s) for pneumonic areas, parasites, granulomas etc. Take samples for histology from suspect areas. In many reptilians the lungs do not have the spongy appearance and texture of mammalian lungs, but have a much more open texture with relatively thick smooth muscle septa supporting the pulmonary tissue. In chelonians in

particular, the lungs are closely applied to the dorsal body wall and obtaining a good sample for histology is not always easy.

Reptiles have no true diaphragm, the intercostal muscles creating the negative pressure necessary for inspiration. Crocodylians, however, possess a partition which runs caudally from the liver to the pelvis, separating the pleural and peritoneal cavities.

NOTE: Multifocal pigmented areas are normal in the respiratory and hepatic tissues and in the coelomic membranes of reptiles. It is especially marked in diurnal lizards.

Heart

The heart is easily identified in all species. There is only a single ventricular chamber in all reptiles except for crocodylians. All reptiles possess two aortas. A small amount of straw-coloured pericardial fluid is normal. The pericardium is a common site for deposition of urates in visceral gout. Submit the whole heart for histology.

Thymus

The thymus is located anterior to the heart and extends into the neck in most species. It is usually paired and is white to pale creamy pink in colour. As in mammals it reduces in size with increasing age.

Thyroid

Also located immediately anterior to the heart base in snakes, or close to the tracheal bifurcation in those species with paired lungs, the thyroid is single in most species and is usually a glistening red colour.

Gastrointestinal Tract

Sever just behind the mouth and at the cloaca then remove. Open along its full length checking for parasites, granulomas, erosions/ulcers, focal swellings or diffuse thickenings. Sample any suspect areas and send for histology. Swab for bacteriology if necessary.

NOTE: Some enteric parasites of reptiles are very small and live within the mucous coat lining the gut. The mucosa may need to be scraped with the blunt edge of a knife to reveal them.

Spleen

This is dark red in colour and is spherical to triangular in snakes and crocodylians, but rather elongated in most lizards. It is located close to the stomach.

Pancreas

Varies in shape from spherical to cigar shaped, quite unlike the mammalian pancreas. It lies adjacent to the duodenum, usually close to the spleen, and is pale pink/orange in colour.

Liver

Remember this is frequently pigmented. Typically elongated in snakes. The liver is another common site for urate deposition in visceral gout. It is frequently very fatty in captive reptiles, sometimes pathologically so. All reptiles possess a gall bladder, but in snakes and some lizards it is located some distance caudal to the liver.

Kidneys

These are paired and caudally located in all species. In snakes the right one is normally anterior to the left and they are flattened and lobulated in shape. Another common site for urate deposition.

Urinary Bladder

Present only in chelonians and most lizards – absent from snakes and crocodylians. Should be checked for calculi, which are fairly common.

Gonads

Testes are usually elongate and yellow/white in colour, but are pigmented in many chelonians. The ovaries have the normal "bunch of grapes" appearance and are easily identified.

Adrenals

These are usually found in close proximity to the gonads and are supported by the mesorchium/ mesovarium. In most reptiles the distinction between the medulla and cortex is not obvious grossly; the medullary cells are scattered in small nests throughout the cortex.

Removal of the Brain

In the case of small species, if brain lesions are suspected it is usually better to submit the whole head immersed in a suitable volume of fixative. The head can then be decalcified prior to sectioning. With larger species, the brain can be exposed by removal of the top of the cranial case using scissors or a cast-cutting saw, depending upon size. The brain can then be removed after cutting through the meninges.