

Veterinary pathology and post-mortems are keys to problem-solving

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Dr Michelle Lewis with her rescue dog, Abby

To many people the thought of doing a post-mortem (also known as a necropsy) on a dead animal or carcass brings up negative thoughts such as blood, guts, grossness, bad smells and even nausea. So, it begs the question: Why do veterinary pathologists perform post-mortems? There are many reasons but a simple answer is to determine the cause of death and/or the extent of a disease in the veterinary diagnostic process.

A post-mortem is generally approached in a standardized manner and requires a good history from the owner, veterinarian, farmer, worker, or eyewitness. The pathologist must have a thorough knowledge of the normal anatomy of the species. You cannot recognize the abnormal (i.e. pathology) if you do not know what normal (i.e. anatomy) looks like. Therefore, pathologists are trained to identify lesions, classify them, document them and put the pieces of the puzzle together to come up with at least an initial short list (differential diagnoses). Sometimes additional tests such as

histopathology, microbial culture, PCR (polymerase chain reaction) and other modalities, are needed to reach a conclusion on the cause of death or develop a list of differentials.

Contrary to what one may think, post-mortems can save the lives of both animals and humans, especially in disease control for farm animals, which is where our meat and dairy comes from. However, the work of a veterinary pathologist can cover a wide range of species of which some may be quite unusual. And for various different reasons.

Recently, Dr Michelle Lewis (photo below), veterinarian and lecturer in the Department of Paraclinical Sciences' Pathology Section at the Faculty of Veterinary Science, used her experience with dolphin post-mortems to produce a video* as a learning tool for students and veterinarians alike. The field of marine mammals is one of the highly specialized areas of veterinary research and medicine, with limited institutions available in South Africa where students may gain experience.

Currently only a handful of veterinarians are employed on a fulltime basis at aquaria in South Africa. Most other veterinarians that deal with these species will do so as private practitioners or CCS vets working in coastal towns, who are called out to a stranded animal for a post-mortem or euthanasia. **CLICK on the image below to watch the video. Please note** that this video is intended as a practical learning tool and is NOT for sensitive viewers. Viewer discretion is advised.



The purpose of this video is to empower them with the knowledge to do a thorough post-mortem and collect adequate samples, should they be called on to do so one day. In this case the dolphin unfortunately got stranded and was found deceased on a beach in Cape Town.

In this case a post-mortem can answer vital questions for the researcher and it can be used to investigate factors such as environmental changes and human impact on wildlife species. In recent years, there has also been a notable increase in student-interest in the field of marine mammal research and medicine.

You can also WATCH the video here <https://youtu.be/DJImMlq5PWw>.

OTHER QUESTIONS ABOUT POST-MORTEMMS

One question that is often asked is why would an owner ask for a post-mortem to be done on their animal? The answer is mainly linked to the origin of the animal. Is it a deceased beloved pet? Is it a farm (meat or dairy producing) animal? Is it part of a research study? Or is it a wild animal? A post-mortem examination can bring closure for an emotional pet owner who suddenly loses an animal. It can also be crucial in disease control for farmers or government departments and it can answer vital questions for researchers in various fields, ranging from wildlife to environmental studies.

Armed with the post-mortem report, the owner, veterinarian, farmer, researcher or governmental official can then plan a path ahead for other animals, such as a change in treatment, vaccination, testing or altering diets.

Post-mortems also aid clinical veterinarians that have made a diagnosis prior to the animal's death and provide feedback on the accuracy of the initial diagnosis and treatment given, which can be a valuable tool. Lastly, in the case of legal investigations, for example, where cruelty or neglect are investigated, the post-mortem report becomes crucial evidence for laying charges against the perpetrators.

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