The Autopsy and You

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Examination of the human body after death, variably described as post-mortem examination, autopsy or necropsy, is recognised as a valuable part of the medicolegal investigation of death. It may be used for forensic purposes, medical purposes, civil purposes or for education and teaching.

The earliest known forensic autopsy took place in the thirteenth century in Italy at the University of Bologna and post-mortem examinations were used for forensic purposes and anatomical discovery long before medicine developed concepts of pathogenesis of disease and cellular pathology (Rokitansky and Virchow in the 19th century), after which it was seen to be a valuable source of learning regarding anatomy, pathology and disease.

In modern times, the overall autopsy rates for the diagnosis of disease are declining as the overall population health improves, with the ready availability of advanced diagnostic tools and with an increasing societal and medical unease with the autopsy process. However, medicolegal or forensic autopsies remain static and the investigation of criminal and unnatural deaths has remained unchanged and is perhaps increasing in complexity, with greater expectations of the Courts and Police.

Today an autopsy is a medical procedure that is carried out by forensic pathologists and some anatomic pathologists in order to investigate the medical factors involved in a death. An autopsy seeks to discover the cause of death, nature and extent of any injuries, seek medical information to assist in reconstructing the circumstances surrounding the death and delineating patterns of injury and death within the community that could be prevented.

The autopsy provides information regarding patterns and trends in death and injury to Coroners who evaluate the broader social and legal issues and often make recommendations that are aimed at preventing similar deaths in the future.

The Coroner must balance a number of competing interests in making the decision whether to (a) accept jurisdiction over a death and (b) order a post-mortem examination on the deceased. The decision making process is somewhat of a quadrumvirate comprising:

1. Legal obligations of the Coroner: preventing further similar deaths, determining cause of death, establishing identity of the deceased and manner or circumstances of death
2. Police: detecting death related to criminal acts
3. Medical desire for an autopsy
4. The wishes of the deceased's family/whanau.

Medical learning, feedback and the ability to critically review processes and systems in how we treat people is but one element of this and one might argue that it is sometimes ranked by the Coroner as the least of the four. Whilst the Coroner's Act empowers the Coroner to overrule a next of kin objection to a post-mortem examination, this is exceptionally rare in practise.

So, what is a possible solution to the dilemma of medical desire to seek information about a patient's death when the Coroner declines jurisdiction? As a clinician, we are used to free discourse about morbidity and mortality, in fact is it an essential part of responsible and professional, critically evaluative practise. One solution offered is the process known as a Hospital Autopsy. This is a non-Coroner's autopsy used as a diagnostic tool to elucidate and clarify purely medical issues. The report is prepared for the treating clinicians and is available in the medical record once completed. This investigation is used when the cause of death is known (because if the cause of death is unknown, it mandates referral to the Coroner) but addresses issues such as stage or extent of disease, response to treatment or clarification of complex medical issues. A common request we receive is for the definitive diagnosis of complex neurodegenerative diseases. On an annual basis, Hospital Autopsies are rare, with less than a dozen annually performed in forensic centres. Often the step that limits this investigation is that consent from the family/whanau is essential. Many families/whanau are actively engaged in the process and seek further answers, however many wish to commence their grieving process and prefer to end their contact with healthcare services.

It is often a source of frustration to hospital clinicians that, when a case is accepted by the Coroner, little or no feedback is received regarding the autopsy findings. How do we remedy this?

1. It is permissible under the Coroner's Act for "a doctor who attended the person concerned before death" to attend the autopsy examination. So if the demands of clinics, theatre lists and the like allow, give us a call and you will be made welcome to observe the autopsy.

2. Accessing the Autopsy Report is regrettably difficult. Our report is prepared for the Coroner and therefore must be sent to the same. We do not have the discretion to send it to other parties.

3. However, the Coroners have indicated that they are happy for us to talk to you about the findings, so again, give us a call.

4. Register as an interested party with the Coroner's Office. When the death is referred to Coroner and jurisdiction accepted, send an email to NIIO (niio@justice.govt.nz) to advise you want a copy of the final report. It won't guarantee receipt of the report (human error and movement of case files). Don't expect a report until at least weeks to months have passed.

    a. The report takes weeks to months to prepare as it is a complex medicolegal document written for a wide audience – the Coroner, doctors, juries, police, families and lawyers. Forensic Pathologists are often expected to comment on how death relates to the medical and social history, circumstances, witness statements, scene and death environment, injury patterns and causation, pathologic disease processes, the results of specimen analysis, genetic and inheritable factors, biomechanical factors and medicolegal concepts.

5. In the case of deaths that occur whilst the person was undergoing an anaesthetic, or that appear to have been a result of it, we absolutely rely on your expertise in the complex issues that may arise around anaesthesia.

    a. Deaths due to an anaesthetic are complex and should be performed by a forensic pathologist, not by a hospital anatomical pathologist. They require a greater level of investigation and expertise. This does not mean all post-op deaths from every cause should be referred to us however!
    b. There are deaths in this setting that may not be able to be diagnosed by the autopsy. There are some biochemical or metabolic abnormalities that, by virtue of post-mortem artefact, cannot be diagnosed – hyperkalaemia, hypoxia, hypercapnia and hypoglycaemia are classic examples. The process of death and the loss of ATP and cellular metabolic processes means everyone who dies irrespective of cause is hypoxic, hypercapnic, hypoglycaemic and hyperkalaemic.
    c. Post-mortem toxicological analysis is an entirely different beast to toxicology during life. There is no standard "therapeutic range" after death, as practitioners generally do not prescribe to the deceased! Post-mortem redistribution and the production or destruction of drugs after death means that comparing antemortem and post-mortem drug levels can be problematic.
    d. Diseases without structural abnormalities, such as the cardiac channelopathies and some cases of epilepsy, are well-recognised causes of a "negative" post-mortem examination. We sit on the Cardiac Inherited Diseases Group to aid in the diagnosis of these through the use of the "molecular autopsy".
    e. It is likely that we will receive any report for the Coroner prepared by you. In return we are absolutely in favour of a multidisciplinary, team based and collaborative approach to these cases and best practice would suggest we meet to discuss the death before our autopsy report is signed and sent to the Coroner.

Forensic Pathologists are Fellows of the Royal College of Pathologists of Australasia and in New Zealand, operate under the banner of the National Forensic Pathology Service of NZ. We are located in:

- Auckland: Drs Simon Stables, Paul Morrow and Joanna Glengarry
- Palmerston North: Dr Kate White
- Wellington: Dr Amy Spark
- Christchurch: Dr Martin Sage

There are currently 5.5 FTE nationally although an ideal workforce of at least 8 nationally is recommended. We have recently created two registrar training positions. We perform about 1800-2000 autopsies nationally and of those, approximately 200 are suspicious deaths or homicides. We are involved in the medical investigation of all deaths referred to the Coroner: sudden or unexpected deaths due to natural disease, suicides, accidents and homicides. We operate a 24/7 on-call roster for the Police to attend scenes of death and perform these cases. We provide medicolegal advice to hospitals, the Courts, Police, Coroner and HDC and advisory committees and regularly appear as expert witnesses. In the event of a mass disaster, we are key professionals involved in the Disaster Victim Identification process.