

Forensic pathology

FORENSIC PATHOLOGY is the application of the principles and practice of pathology to the needs of the courts, or, more broadly, the law.

The administration of justice. Arguably the single biggest global advance in the administration of justice in the past 60 years has been the advent of international criminal tribunals. This has meant that gross abuses of human rights and related offences, committed in times of war or insurrection, can no longer be perpetrated with impunity. The tribunals need evidence, some of which has been provided by Australian forensic practitioners in places such as Bosnia, Kosovo and East Timor (although, in the last case, no such tribunal exists). The aim of forensic pathology in these circumstances (often involving multiple deaths) is to identify the deceased, to establish the cause of death and to help reconstruct the circumstances surrounding the death. The likely development of a standing International Criminal Court, possibly within the next two years, will increase the potential for contributions by Australia's forensic community in this important area.

Domestically, DNA typing has provided the courts with valuable evidence in helping to convict those guilty of rape, assault and murder. The *exclusion* of suspected offenders is a less well appreciated but vital application of this methodology — in several cases overseas it has been used to identify wrong convictions. DNA typing has also led to important advances in identifying decomposed or skeletal remains and grossly traumatised remains in mass disasters.

Healthcare delivery. Forensic pathology is also influencing healthcare delivery, with forensic and other medical specialists beginning to interact more closely. Tissues from complex cases of sudden and unexpected death are being submitted for cytogenetic and molecular biology studies, resulting in far more accurate diagnoses of rare conditions.¹

There have been moves to institute national and international protocols to standardise the investigation of infant and childhood injuries and deaths. The use of such "gold standards" has been shown to improve diagnostic accuracy,² identifying deaths incorrectly attributed to sudden infant death syndrome (SIDS). Future epidemiological studies, such as those that resulted in dramatic falls in the rates of SIDS during the nineties, will only be useful if diagnostic precision is maintained.

Intervention and prevention. A recent innovation has been the setting up of the National Coroners' Information System at Monash University to store information about deaths reported to Australian coroners. The information will be available to coroners, forensic pathologists, researchers and others with an interest in preventable injury and death.



"Tissue issues." The retention and use of organs and tissues removed at autopsy has been a matter of substantial publicity over the past 12–18 months. Formal inquiries were carried out in New South Wales and South Australia. The Australian Health Ethics Committee has provided advice on the handling of stored tissue, and the Australian Health Ministers' Advisory Council is currently developing national guidelines for the future conduct of autopsies.

Repositioning the autopsy. The autopsy needs to be repositioned, not simply subjected to greater regulation. The information provided to pathologists before coronial autopsies (which constitute 80%–90% of autopsies in Australia) is generally poor. This is a global phenomenon, as it is unreasonable to expect police officers to provide what, in many cases, is a medical history. Much of this information resides with families.

The complexity of the processes surrounding autopsy, and the necessity or desirability of retaining organs and tissues, is such that a proper understanding of them will only reside in pathology departments.

Many, if not most, autopsies yield information of intense interest, or of healthcare relevance, to the families of the deceased. Increasingly, pathology services are recognising a duty to take more responsibility for informing families when autopsy has unexpectedly revealed a condition with a hereditary component (eg, prolonged QT interval, hypertrophic obstructive cardiomyopathy³ or haemochromatosis).

For these reasons, pathology services need to consider the establishment of a relationship, like the normal therapeutic relationship between doctor and patient, with the family of the deceased. Such a relationship would clarify and facilitate the processes and necessary communications surrounding autopsy. But this will not be achieved within current resources.

Stephen Cordner,* Roger W Byard†

* Professor of Forensic Medicine, Monash University, Clayton, VIC 3168 and Director, Victorian Institute of Forensic Medicine

† Specialist Forensic Pathologist, Forensic Science Centre, Adelaide, SA
stephen@vifp.monash.edu.au

1. Spherhake JP, Matschke J, Orth U, et al. Sudden death due to cerebrotendinous xanthomatosis confirmed by mutation analysis. *Int J Legal Med* 2000; 113: 110–113.
2. Mitchell E, Krous HF, Donald T, Byard RW. An analysis of the usefulness of specific stages in the pathological investigation of sudden infant death. *Am J Forensic Med Pathol* 2000; 21: 395–400.
3. Byard RW, Cole SD. Sudden death in infancy, childhood and adolescence. Cambridge: Cambridge University Press, 1994. □