Preventative pathology and childhood injury

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Abstract

Objective—To delineate a role for pathologists in coordinating the study of childhood deaths due to injury and in developing public safety recommendations.

Methods—Ongoing evaluation of cases of death due to injury occurring in children under 16 years, with formal review of all cases of fatal pediatric injuries recorded in the Department of Histopathology, Women's and Children's Hospital, over the past 55 years, has been undertaken as a part of the “Keeping Your Baby and Child Safe” programme.

Results—Information obtained from these cases has been used to formulate a number of safety recommendations dealing with unsafe sleeping environments, unsafe eating practices, scalding, and dangerous farm environments. Some products have been withdrawn from sale and other products modified.

Conclusions—Pathologists often have extensive knowledge of childhood injuries, which can contribute significantly to health promotion initiatives and community education programmes.

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Injuries continue to account for a significant proportion of preventable childhood deaths despite international and national initiatives to improve the safety of children's environments. It has been gratifying in recent years to observe the multidisciplinary efforts that have been undertaken to study mechanisms of childhood injury and to formulate recommendations for prevention. One group of professionals who have not generally been involved in this area, however, are pediatric pathologists.

Traditionally the role of the autopsy pathologist has been very clearly defined. The pathologist undertakes autopsy examinations on most children who have been involved in fatal accidents, usually at the behest of a coroner or medical examiner, to determine the cause and manner of death. Injuries are meticulously documented and photographed, contributing factors in the form of underlying organic disease are searched for, and evidence of possible inflicted injury is, hopefully, excluded. The pathologist prepares a report detailing the findings and may comment on the sequence of events, and there the matter often ends. Even in the event of an inquest the pathologist may merely have to furnish a signed affidavit, or elaborate on the documented findings, rather than provide an assessment of the factors leading up to the injury, and steps that could be taken to prevent such events occurring in the future.

Autopsy pathology in recent years has been relegated a poor “second cousin” to surgical pathology. There is a perception that the simple techniques of observation and dissection that characterise autopsies belong more to the 19th than the 20th century. As a result, autopsy rates have fallen, and there has been much less interest in autopsy pathology among not only clinicians, but also pathologists.

This attitude presents a major problem. In many cases of fatal injuries the pathologist is the only doctor involved in making an assessment of the event. When a child is killed, the body may briefly pass through an emergency department for certification of death before being quickly passed on to the pathologist for autopsy. The pathologist is, therefore, often the only doctor who has any detailed knowledge of the unfortunate circumstances surrounding the deceased's last hours of life. The responsibility to the dead child should not stop with merely performing the autopsy. Instead, the autopsy should be regarded as an excellent starting point in a process that involves family counselling and formulating strategies for the prevention of future fatalities. The information that the pathologist is in the unique position to obtain at the time of autopsy includes a synthesis of police and witness statements with the histopathological findings, much like the clinicopathological correlations of routine hospital practice.

It is unreasonable to expect that the medical examiner or coroner in isolation should always be able to integrate case information, as it often requires a detailed understanding of quite complex medical issues. For example, this is particularly the situation in cases of unexpected infant death, where determining whether death has occurred from accidental asphyxia due to so-called sleeping accidents, such as overlaying or wedging, may be extremely difficult.1,5

At the Women's and Children's Hospital and the State Forensic Science Centre in Adelaide, South Australia, the “Keeping Your Baby and Child Safe Programme” has been set up to enable careful monitoring of trends in accidental childhood death and the rapid identification of new dangers. As children who present “dead on arrival” or directly to the mortuary bypass the hospital system, they are often not included in the usual medical literature on unsafe childhood environments. Thus, evaluation of all cases of deaths due to injury occurring in children under 16 years, with formal review of all cases of fatal pediatric injuries recorded in the department over the past 35 years, has been
undertaken. These data provide an excellent resource and basis for ongoing research into causes and mechanisms of lethal childhood injuries.

Information obtained from these cases has already been used to formulate safety recommendations.6–11 Collaboration with clinical colleagues and with organisations such as the Sudden Infant Death Syndrome Association of South Australia and Kidsafe has resulted in the initiation of, and participation in, campaigns dealing with unsafe sleeping environments, unsafe eating practices, scalding, and dangerous farm environments. Involvement with the Department of Consumer Affairs and the State Coroner has also enabled pertinent information to be passed from the pathologist to the relevant authorities. Collaborative efforts have resulted in some products being withdrawn from sale, other products such as rocking cradles being modified, the packaging of “V” shaped pillows being changed, and legislation governing cot safety being recently introduced to make certain safety standards mandatory.

To more accurately assess the circumstances surrounding fatal childhood injuries the author has either visited death scenes, or been provided with accurate descriptions, including photographs and videotapes, by attending police officers. Cots and bedding are also often brought to the mortuary for assessment by the pathologist before the performance of the autopsy. In addition the Police Department has arranged lectures for cadets, officers, and detectives on the importance of scene examination in childhood deaths. This close collaboration with the police, emphasising the potential importance of accurate data collection in terms of injury prevention, has been mutually beneficial.

Examples of successes that have arisen to date from this programme include the identification of potential dangers to young infants from overhead suspended rocking cradles, mesh sided cots, stroller prams and “V” shaped pillows.12–17 Close liaison with media through the hospital’s public relations department has facilitated the dissemination of important information to parents and child carers. After publicity surrounding these problems there have been no further deaths in South Australia involving these products.

Although there are many researchers who have published comprehensive original data on child safety issues, the references cited have been deliberately restricted to those coming from the Women’s and Children’s Hospital, State Forensic Science Centre, and the “Keeping Your Baby and Child Safe” programme run by the author. This is not meant to detract from other excellent studies, but rather to demonstrate the range of information that can be derived from even small centres when close collaboration between professionals within the hospital, government, police, and coroner’s departments, community organisations, and the pathologist occurs.

Pathologists should be encouraged to contribute their often extensive knowledge of childhood accidents to health promotion initiatives, and groups involved in community education programmes should avail themselves of this expertise. “Preventative pathology” as a concept may produce wry comments from clinical colleagues, however, it does not seem unreasonable to encourage any new initiative that may reduce childhood injury and death.

What better tribute to the memory of children who have died unnecessarily than to learn from the experience and to actively try to minimize the possibility of similar tragedies in the future.