

Perioperative Deaths: A Further Comparative Review of Coroner's Autopsies with Particular Reference to the Occurrence of Fatal Iatrogenic Injury

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Abstract

Introduction: In previous triennial reviews of Coroner's perioperative autopsies conducted during the periods 1989 to 1991 and 1992 to 1994, it was observed that the necropsy incidence of such deaths rose from 2% to 2.6% ($P < 0.05$). Concurrently, the rate of iatrogenic deaths had nearly doubled from 15.2% to 28.8% ($P < 0.02$). These findings spurred a review of the subsequent triennium (1995 to 1997), in order to monitor the apparent rise in these trends and to study the frequency and occurrence of iatrogenic deaths in relation to the number of invasive procedures performed, as well as during emergency and elective procedures. **Materials and Methods:** A retrospective (descriptive and comparative) study, comprising a clinico-pathological review of a series of 270 perioperative deaths (defined as deaths occurring during or after invasive therapeutic or diagnostic procedures, up to a week after discharge, and excluding cases of major trauma from suicides, homicides, as well as road and industrial accidents) reported to the Coroner, for which autopsies were conducted at the Department of Forensic Medicine from 1995 to 1997. **Results:** The necropsy incidence of 4.4% (270/6074) represented a significant rise over the previous triennia ($P < 0.01$). As in previous years, there was a predominance of males ($M:F = 1.65:1$) and middle-aged to elderly patients (range 0 to 92 years, mean 55.8 years, median 63 years), most of whom had died after a variable, but usually brief, postoperative interval [0 to 97, 4.2, 1 day(s)] and a more variable period of hospitalisation (<1 to 289, 12.6, 7 days). A total of 408 invasive procedures were performed, amounting to an average of 1.5 per patient; 101 patients (37.4%) underwent multiple (>1) interventions, which were initially classified as elective procedures in 27 cases. There were 66 (24.4%) iatrogenic deaths, of which 2 (0.7%) were due to anaesthetic mishaps; 18/64 iatrogenic deaths, unrelated to anaesthesia, occurred after the first postoperative day. The proportions of such deaths amongst patients subjected to multiple interventions, or initial elective procedures, were more than twice as high as amongst those undergoing single procedures, and those initially classified as emergencies (35.6% versus 16.6% and 33.3% versus 13.2%, respectively; $P < 0.01$). Only 51/66 (77.3%) iatrogenic deaths received Coroner's verdicts of misadventure; no verdict of criminal negligence was recorded during the period in question. **Conclusions:** There appears to have been a steady increase in the number of perioperative deaths reported to the Coroner over the previous triennia (1989 to 1997) for which autopsies were conducted. While this observation may not denote an increase in perioperative mortality rates per se, it may be indicative of an increasingly "aggressive" or defensive approach to the clinical management of seriously ill patients, particularly over the past decade. Although the rate of iatrogenic deaths appears to have stabilised, it is too early to say whether this apparent trend will persist in the future. It is perhaps not surprising that the risk of iatrogenic injury appears to increase with the number of interventions performed; however, it is not clear why initial, supposedly elective, interventions should be associated with an apparently greater risk of iatrogenic injury than those classified as emergency procedures. The substantial divergence between the autopsy finding of an iatrogenic death and the corresponding Coroner's verdict of misadventure may be comforting to clinicians, but certainly warrants further examination.

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