RISK OF CARDIAC ARREST DURING EMERGENCY INTUBATION

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INTRODUCTION: Anesthesia-related cardiac arrest is a relatively rare catastrophe in the operating room. Difficulty with airway management is frequently the leading etiological factor involved. Emergency intubation, in remote locations, is more often accompanied by hemodynamic and airway complications. The incidence and risk factors of cardiac arrest, during emergency intubation, have not been defined. METHODS: Adult patients who required intubation, outside of the operating room, were studied (patients with CPR in progress were excluded). The arrest group was compared with both a matched cohort plus an overall database. Where appropriate, data were analyzed using chi-square and Fisher's exact probability test. A P value of <0.05 was considered significant. RESULTS: 1,860 emergency tracheal intubation questionnaires were completed. A total of 37 cardiac arrests (age range 24-94 yrs) were documented (2%) of which 33 arrests were preceded by progressive decline in heart rate to <30 bpm, most leading to asystole. Laryngoscopy-induced ventricular tachycardia (3) and one immediate collapse, after IV propofol administration, accounted for the others. 46% received only topical anesthesia for intubation. Conventional oral intubation was successful in 81% (surgical airway-7 patients). Seventy percent of the arrest victims had airway complications: regurgitation (41% vs 6%), aspiration (29% vs 2%), esophageal intubation (35% vs 8%), difficult intubation (51% vs 9%), surgical airway (19% vs. 0.5%) and hypoxemia (68% vs 19%, P<0.001). These complications were more common, in arrest victims, than the matched cohort and an overall database. Ten arrest victims had an uneventful intubation.

CONCLUSION: During emergency intubation, cardiac arrest in remote locations (1 incident per 50 intubations) is sharply higher than its intraoperative counterpart. Moreover, airway difficulties including multiple laryngoscopic attempts, aspiration, esophageal intubation, and severe hypoxemia, appear to play a significant role.

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