

ate evaluation system for knowledge and results of the drills should be developed.

Keywords: contents; course; disaster; drills; education; Japan; outcome

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Evaluation of the Usefulness of the Fiberscope for Confirmation of Intubation

Y. Koido

Nippon Medical School, Japan

Introduction: The position of the tracheal tube in tracheal intubation is confirmed by the primary and secondary confirmation methods. However, incorrect intubation (esophageal intubation) can not be detected perfectly by these methods. Prehospital tracheal intubation often results in incorrect intubation.

Objectives: A fiberscope (FS) was developed for the confirmation of intubation, and its usefulness for confirming the position of the tracheal tube was evaluated.

Methods: The position of the tracheal tube was confirmed using a FS in 30 patients who underwent tracheal intubation in the emergency room.

Results: Since one of the 30 patients showed esophageal intubation, tracheal intubation was performed 31 times. The tube was confirmed to be in the trachea in 28 of the 31 cases, and in the esophagus in one case. The position of the tube could be confirmed in 29 (93.5%) of the 31 cases. In two cases, the tube position could not be confirmed because of an inadequate visual field due to airway secretion, but reintubation after tracheal aspiration allowed confirmation of the tube in the trachea. The mean time required for confirmation was 7.1 ± 3.1 seconds.

Discussion: At present, the apparatus used by emergency medical technicians for the determination of esophageal intubation has a sensitivity of about 70%, causing many false-negative cases. Though the protocol indicates confirmation after pharyngeal re-exposure when emergency medical technicians are not confident after primary and secondary confirmation methods, this procedure is difficult. In such a situation, the FS, associated with a high accurate confirmation rate, is useful.

Keywords: accuracy; emergency medical technician (EMT); fiberscope (FS); intubation; patients; prehospital

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Neglected Protection Against Weather Influences during Mass-Casualty Incidents: Lessons Learned in Field Exercises

M. Mattila; A. Immonen; J. Holopainen

Department of Physiology, University of Kuopio, Finland

This report includes the authors' personal experiences from several multiple casualty incident (MCI) exercises during different seasons in Finland. The conduct of drills is an established way to test the field preparedness of health services for real-life events, in order to minimize deviations from the accepted guidelines and avoid tactical and technical mistakes.

From a trauma care perspective, the goal is to provide

“severely injured” subjects with simulated procedures approximating emergency care under real circumstances. This also includes avoidance of accidental hypothermia. Even for “smart casualties”, it is difficult to simulate accurately the different effects of traumas on vital signs, with an exception of body temperature. Many subjects of drills actually are cold, pale, cyanotic, and shivering, when waiting for triage, decisions, care, and transportation. Routine measures for protection against cold, which include placing blankets and aluminized plastic foil on the casualty, seem insufficient because subjects are mostly immobile and lying on the cold and moist ground. Thermal imbalance is due mainly to heat conduction to the ground. When lessons are drawn from each drill during end-of-drill discussions, it would be important to include experiences of the “smart casualties”. Unofficially, “terrible cold” often is reported as the most unpleasant experience, despite wearing exceptionally warm clothing.

The last two field drills were designed to correct the neglected protection from the weather by supplying a specially designed protective covering (Telespro™) for the emergency group to be utilized on the subjects during the exercise. Before the drill, the group members were informed as to the purpose, characteristics, and use of Telespro™ protective covering. Despite this fresh briefing, the utilization of the protection remained only partial. Therefore, much more could be done in terms of protection of casualties against weather influences, if the existence of accidental hypothermia and its negative effects becomes generally acknowledged. It also is possible to simulate cold ambience and demonstrate protective isolation needs. An ongoing systematic education and evaluation for incorporation of improved weather protection is recommended.

Keywords: analysis; field exercise; hypothermia; protective clothing; smart casualties; trauma; weather

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Systematic Review of Prehospital Endotracheal Intubation in Trauma Patients

A. Sen

Manchester Royal Infirmary, United Kingdom

Background: Ventilation and prevention of aspiration are of vital importance for trauma patients. Airway is the “A” of “ABC” in advanced trauma life support (ATLS). Endotracheal intubation (ETI) remains the gold standard for trauma airway management. The role of ETI in out-of-hospital ATLS, however, remains controversial. Recently, an increase in mortality has been documented in association with paramedic rapid sequence intubation (RSI) of severely head-injured patients. Some experts say that early field intubation was associated with a decreased risk of fatal outcome compared with emergency department intubation, while others claim ETI confers no survival advantage over bag-and-mask ventilation (BMV) and slightly increases prehospital time. Adequate oxygenation is important to the critically injured patient to avoid secondary damage. This analysis explores benefits and harms of prehospital ETI in victims of traumatic events by a systematic review of primary studies.

Methodology: A comprehensive search is being done through MEDLINE, CDSR, and other electronically indexed databases, reference sections of primary studies, and consultations with experts in the field. Two investigators will independently evaluate titles, abstracts, and complete articles identified in the search for inclusion. The inclusion criteria are all adult trauma victims in prehospital settings who have received ETI versus BMV or other methods of ventilation. Outcome measures will include missed intubations, adverse events, and mortality.

The data will be summarized quantitatively if appropriate; subgroup or sensitivity analysis will be done. Reporting of methods will include a description of relevance of studies assembled for assessing the hypothesis to be tested, rationale for the selection and coding of data, documentation of how data were coded, assessment of confounding, study quality, blinding of quality assessors, stratification or regression on possible predictors of study results, heterogeneity and description of statistical methods used. Attempts will be made to detect publication bias using funnel plots.

Results: Data extraction is currently underway. The results of this study will be available and presented at the conference.

Conclusions: The study hopes to highlight the benefits and harms of prehospital ETI in a trauma setting.

Keywords: assessment; bag-and-mask ventilation (BMV); emergency care; endotracheal intubation (ETI); intubation; prehospital; trauma

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Emergency Department Thoracotomy: When Should One Quit?

N.A. Ahmed

Huron Hospital Cleveland Clinic Health System, Cleveland, Ohio

Introduction: Emergency department thoracotomy (EDT) is a desperate and invasive measure that may save lives in a small percentage of patients when performed appropriately.

Methods: In a level II trauma center with a high incidence of penetrating injuries, a three-year retrospective review was undertaken. From the trauma registry, 41 EDTs, performed for appropriate indications, were analyzed for wounding mechanism/agents and thoracotomy findings, and correlated with outcome measures, including response to resuscitation, operative repair performed, and survival.

Results: Overall mortality was 85%. Gunshot wounds that went through the heart had a survival rate of 0%. Excluding these patients, the survival rate of EDT was 22%.

Conclusion: EDT findings of gunshot wounds to the heart suggest that resuscitation efforts would be futile as none survived. For all other injuries, the expenditure of scarce resources is justified, since >20% of the patients can be salvaged.

n	Findings at EDT	OR	ICU	Discharged home
Gunshot wounds: 29	Heart tangential: 1	1	1	1
	Heart through ventricle (2 holes): 14	0	0	0
	Hilar/great vessels: 14	6	4	2
Stabs: 12	Heart (1 or 2 holes): 8	7	1	1
	Hilar/ great vessels: 4	3	3	2

Keywords: emergency departments; gunshot wounds; thoracotomy
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An Analysis of Prehospital Management Errors on Potentially Preventable Deaths in a Group of Trauma Patients

B. Badorwicz; M. Ciecielag-Solarz; C. Pakulski
Pomeranian Medical University, Poland

Objective: The study analyzed the effect of prehospital management errors on potentially preventable deaths in a group of trauma patients treated in the intensive care unit.

Methods: A retrospective analysis was performed on 206 patients admitted to the division of trauma at the Pomeranian Medical Academy in Szczecin, Poland, between 01 July 2001–31 December 2003. Prehospital management errors were analyzed and the impact of such errors on possibly preventable deaths was estimated.

Results: A total of 74 of 206 (36%) treated patients died. The main cause of trauma was road traffic injuries (71%). Among all deaths, 57 patients (77%) had multiple injuries, while 17 cases (23%) had single injuries. Of those cases, 36 (49%) were determined to have been preventable possibly.

The main types of prehospital management were delay in shock treatment (13 potentially preventable deaths), lack of traumatic pneumothorax treatment (12 potentially preventable deaths), unsuccessful neck stabilization (nine potentially preventable deaths), and delays in intubation and oxygen procedures (nine potentially preventable deaths).

Conclusions: The results show that prehospital management errors were most common in the group of patients with multiple injuries. Improving the quality of prehospital management could result in fewer complications and deaths.

Keywords: analysis; errors; management; Poland; prehospital; trauma
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Medical Control for Lifesavers in Japan

A. Kaji,¹ H. Tamiya,² T. Yoshida,² T. Murai,² Y. Matsuura,² K. Shimadzu,² U. Hiroaki,² M. Toshinori,² H. Rinka,² M. Kan,² Y. Inagaki,³ H. Arai³

1. Japan
2. Emergency and Critical Care Medical Centre, Osaka, Japan
3. Japan Lifesaving Association, Japan

In Japan, there are 1,332 beaches and approximately 20 million people visit them each summer. A total of 551 people were lost to drowning in 2001. Only 177 of these beaches are patrolled by about 5,000 lifesavers registered to the Japan Lifesaving Association (JLA).

Though lifesavers in Japan have been taking an important role as the first ring of the chain of survival on the waterfront, they have not been regulated by any medical protocols. Since the 1970s, the educational system for Japanese lifesavers has been introduced and developed under the strong influence of the Australian system, but there has been no supervision by medical doctors. Their technique for cardiopulmonary resuscitation (CPR) was well-trained, but was based on the standards established before the 2000 AHA Guidelines, and the CPR cases