

the trachea past the soft tissues and potential obstruction from swelling, tumors, or vocal cords.

Method: Consultant anaesthesia staff were to use the device following two or more failed attempts at intubation.

Results: Over an 18-month period, there were 10 reports of failed intubation from seven consultants. Of these, eight intubations were successful on first attempt when the introducer was used. Notably, it was beneficial with an "anterior larynx," pharyngeal edema, one patient with a laryngeal tumor, and for intubation of awake patients in the emergency department and intensive care unit.

Conclusion: This simple, disposable device appears efficacious in unanticipated, difficult intubations. A follow-up randomized study is underway to assess its effect on the success rate of routine intubations by less experienced operators.

063. Telemedicine and the Remote Assessment of Disasters

J.F. Navein, MD, John Hagmann, MD

Uniformed Services University of Health Sciences, Bethesda, Maryland USA

For appropriate disaster relief to be mobilized, an early expert assessment is essential. The current approach includes the immediate dispatch of a team of academic experts. The limitations of this approach are that the required disciplines must be estimated correctly without information on the actual conditions, the depth of knowledge for assessment is limited to the expertise of the initial team, and the risks to the members of this team. The early stages of a disaster usually are associated with hazardous conditions and an austere environment for which academic experts usually are not ideally suited.

A remote assessment method will be described and demonstrated which involves deploying a team of data collectors with expertise in functioning within the disaster environment. These operators gather data, images, and video which are immediately transmissible over the INMARSAT satellite link to a home-base array of experts. Appropriate experts can interrogate the operational data collectors and direct the assessment from their remote location. Remote assessment technology enables a small team of field-experienced data collectors to act as the eyes and ears of a large and flexible group of experts without the costs and risks of deploying them.

029. "In-Field" Assessment of Endotracheal Tube Placement

W. Malck,¹ G. Petroianu,² S. Altmannsberger,² K. Koetter,³ R. Ruffer²

¹Anaesthesia Klinikum D-67063 Ludwigshafen

²Pharmacology Klinikum, Mannheim

³Department of Head Trauma Reha-Krhrs, Karlsbad

Objective: Oesophageal tube malposition is among the leading

causes of anaesthesia incidents. While clinical maneuvers for detection of tube position are unreliable, monitoring (i.e., quantitative capnography) can prevent such incidents. The problem is important particularly in prehospital care where capnography is not yet available.

Method: We tested three devices used for assessment of tube position:

1) Oesophageal Detector Device (ODD) as described by Pollard and Wee.^{1,2} A syringe is connected to the endotracheal tube and air aspirated. With oesophageal tube malposition, the oesophagus collapses and very little air can be aspirated. With correct tracheal tube placement, due to the rigidity of the trachea, air easily can be aspirated.

2) Chemical disposable capnometer (EASYCAP, Nellcor, Pleasanton, California USA); and

3) Infrared miniaturized capnometer (MiniCAP, MSA, Owing Mills, Maryland USA).

In 50 anaesthetised and intubated minipigs, an additional, identical tube was placed in the oesophagus. Inexperienced personal (e.g., students) were asked to use one of the devices on one of the tubes and to decide within 30 seconds, if its position was tracheal or esophageal. Using the ODD, the proband first inflated 100 ml air into the tube and then tried to aspirate the same volume. EASYCAP and MiniCAP were used according to manufacturers' manual.

Results: Each device was used 25 times at a tracheal and 25 times at an oesophageal tube. All decisions were correct. When ventilating the oesophagus for capnometric control, we saw 6 times regurgitation into the tube (5 times with the EASYCAP and 1 time with the MiniCAP). In these cases, oesophageal position was identified by regurgitation, not by the display of the device. With use of the ODD, no regurgitation was seen.

Conclusions: We recommend initial control of ET-tube position with an ODD in any emergency intubation, because it is: a) CO₂-independent (works well in cardiac arrest); b) quick; and c) without risk of regurgitation. This should be followed by continuous control of tube position, ventilation, and circulation with capnometry.

References

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020. Considering 391 Runs Performed by One Physician in Vittal Emergency Medical Services

Marcelo Muro, MD, Analía Fuentes MD, Claudio Waisbord,

Luis Pesce

Vittal Emergency Medical Services, Buenos Aires, Argentina

Objectives: The objective of this paper is to describe the study of one physician's work to improve the quality of the assistance provided.

Methods: Three hundred ninety-one prehospital incidents performed by the same physician were analysed. One of our best qualified professional was chosen because of her ability to complete the assistance forms. Dispatcher priority decisions were

compared with the medical assessment. More frequent diagnoses, treatments, and transportation rates and causes that were mistriaged were studied.

Results and Discussion: Calls were classed by dispatchers in the following way: 1) Code 3 = 138 (35.3%); 2) Code 2 = 208 (53.2%); and 3) Code 1 = 39 (10%). After medical assistance, we concluded that dispatcher's assessment was sensible in 96% of the Code 3 calls and 94% for Code 2 and 1 calls. But they were specific in 4% of the Code 3, 58% Code 2, and 97% Code 1 calls. Only 1.2 % of the total calls were mistriaged to a lower priority.

Trauma and cardiovascular diseases were the most frequent illnesses classified as Code 3. Minor trauma, hypotension, and mild hypertensive arrests were the top three diagnosis in the Code 2 group. A total of 52 patients were transported to the hospital: 36 of the classified as Code 3 (27%), 15 as Code 2 (7%), and only one previously classed as Code 1. Trauma, cardiac arrest, cerebrovascular attack, and abdominal illnesses were the principal diagnoses in admitted patients. In spite of the classification, only 48% of runs justified emergency attention.

041.

Emergency Physicians As Medical Command Officers: An Investigation of Effectiveness And Quality

A. Thierbach, M.D.W. Lipp, M. Daublander, W.F.Dick
Clinic of Anesthesiology (Head: Prof. Dr. Dr. h.c. W. F. Dick),
Johannes Gutenberg-University, University Hospital, Mainz,
Germany

Introduction: The implementation of a senior physician of pre-hospital emergency care as an on-scene medical command officer (MCO) within the emergency medical service (EMS) is an essential prerequisite to guarantee qualified medical supervision during mass-casualty incidents. The purpose of this study was to investigate the effectiveness of the MCO-system of Mainz, which was implemented in 1990.

Methods: To evaluate the frequency and the indication of calls, reaction intervals, and the distance from the MCI, the number of patients, EMS personnel and equipment on-scene, as well as the activities of the MCO, and occurring problems. All calls were recorded and analyzed. Within a period of 22 months, the MCOs recorded their activities and experiences on the scene using standardized data collection sheets.

Results: The MCOs responded to 48 emergency calls. In 35 cases, the situation on-scene met the requirements of the MCO system indication list. The reaction intervals were dependent on whether the MCOs were picked up by the fire-brigade (15.6 ± 8.5 min) or driving themselves (10.9 ± 5.8 min). On the scene, the MCO dealt with from 5 to 450 individuals (median 15). Problems encountered included premature departure of ambulances from the scene (9 cases), late arrival of the MCO at the scene (7), and the delayed call of the MCO or call cancellation although his presence on-scene was required (6).

Conclusions: A short reaction interval is the crucial point of a MCO call. In our system, the MCO has to be on-scene within at

least 15 min. to triage all patients and to take charge of the medical organization and of patient transport to different hospitals.

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An Analysis of Body Armor for Paramedics

Donald W. Walsh, MS, LEMTP
National-Louis University, Chicago, Illinois USA

This research paper investigates and identifies the necessity on the use of protective soft body armor (i.e., Ballistic Resistant Vest) for emergency medical personnel in large urban American cities. The research used a descriptive research methodology in a non-experimental design. A total of 575 Paramedics were surveyed, and 25 American cities with populations in the 500,000 range were interviewed. 43% of the paramedic population responded to the surveys.

Of the emergency workers who responded, 91% were assaulted while providing prehospital care. Eighty-seven percent reported a need for body armor in the work place. Of the cities interviewed, 96% had emergency workers assaulted during the performance of their duties.

Conclusion: The study concluded that body armor is a necessity for emergency prehospital care workers in large, urban American cities due to occupational encountered violence.

116.

Developing an Effective Medical Coordination and Control Organization For Disasters and Major Emergencies: State of Victoria, Australia

Eric W. Williams
"Medical Displan Victoria"
Victorian Academy for General Practice, Victoria, Australia

Objective: To provide an overview of a method for establishing an effective permanent Disaster Medical Control Organization for use in major emergencies or disasters.

Method: The establishment of a permanent Medical Coordinator Organization for daily interface on medical disaster planning matters and integrated with other emergency response agencies at all levels of local, regional, state, and at the national jurisdictions, was considered to be absolutely essential following a review of arrangements which existed in 1980. Such an organization was developed at that time for the Metropolitan Response Zone of Melbourne, the capital city of Victoria with a population of 3 million persons. The organization since has been developed to include the entire state, and has been effective in providing early medical control during all major incidents and during disasters such as the widespread event that affected the Southeastern part of Australia in 1983 with such disastrous results. The formation of the medical coordinator organization, which includes a Metropolitan Medical Commander Squad (12 persons) and Rural Regional Area Medical Coordinators (45), ensures that an immediate on-site and cen-