REVIEW

Airway management in the emergency department

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Emerg Med J 2002;19:2-3

Airway management in the emergency department and the role of anaesthetists and emergency physicians is reviewed. The training for emergency physicians in the advanced airway skills of rapid sequence induction and tracheal intubation is discussed.

In most emergency departments in the United Kingdom (UK), tracheal intubation requiring the use of anaesthetic drugs has usually been undertaken by anaesthetists. In contrast, the role of the emergency physician in the management of airway emergencies has usually been limited to simple airway interventions and intubation of the moribund. There is a general view that a particular clinical procedure (for example, tracheal intubation) should not be specific to one specialty group but, whichever specialty group undertakes it, the competencies to do so must be the same. The safety of airway management in the resuscitation room will be enhanced greatly by strong cooperation between departments of anaesthesia and emergency medicine.

In the USA and Australia, emergency physicians undertake most of the tracheal intubations in the emergency department. In a recent study from the USA, emergency medicine residents or attending physicians intubated 569 (93%) of 610 patients requiring airway control in the emergency department.¹ Regardless of the specialty of the doctor performing the intubation in the emergency department, it is usually undertaken with the aid of anaesthetic and neuromuscular blocking drugs in the form of a rapid sequence *intubation*. Emergency physicians in the United States have modified this term and refer to the procedure as rapid sequence *intubation*, which, like rapid sequence *induction*, is often abbreviated to RSI.

In the UK, the specialty of emergency medicine is evolving rapidly. Emergency physicians quite rightly perceive advanced airway management to be a core skill for resuscitating critically ill patients. Many of these doctors have supplemented their minimum anaesthesia/critical care training requirement of three months with further training to enable them to undertake rapid sequence induction and tracheal intubation.² In two recent surveys, 31%³ and 56%⁴ of rapid sequence inductions in UK emergency departments were undertaken by emergency physicians. The Faculty of Accident and Emergency Medicine recognises that future emergency physicians should have all the necessary skills to manage the airway for the first 30 minutes after admission. Inevitably, there will be conflict with some anaesthetists who perceive themselves as the sole specialists trained appro-

priately to undertake this skill.⁵ Anaesthetists may question whether emergency physicians should now be trained to perform rapid sequence induction and tracheal intubation. How can this training be achieved and how can the skill be maintained?

THE DILEMMA

Many anaesthetists will argue that rapid sequence induction and tracheal intubation should always be undertaken by those most experienced with the technique. This might be particularly true in the emergency department where circumstances are likely to be challenging. The patients are not fasted; on the contrary, many have full stomachs after consuming food and alcohol for several hours. These patients are often uncooperative and will not be able to provide any relevant medical history. Trauma patients may pose specific airway problems, compounded by hypovolaemia and possibly lung injury. In the controlled setting of the operating room, the incidence of difficult intubation is 1.15%–3.8%; in the emergency department, the incidence is 3.0%–5.3%.⁷

Although the debate on airway management in the emergency department has focused on tracheal intubation, induction of anaesthesia in the critically ill patient may pose considerably more difficulty and risk than the insertion of the tracheal tube; all intravenous anaesthetics have the potential to produce profound hypotension in hypovolaemic patients. The most important component of this whole intervention is the decision to proceed. Anaesthetists and intensivists may be concerned that they are expected to pick up the longer term consequences of the emergency physicians' actions, despite having no part in the initial decision to induce anaesthesia and intubate the patient. They may also be concerned that emergency physicians will not have the experience to induce anaesthesia safely in the critically ill patient.

Anaesthetists might argue that they have provided an excellent service to the emergency department in the past. If there is no problem why fix it? Emergency physicians will counter this by claiming that there is often a significant delay before arrival of the anaesthetist or intensivist in the emergency department. In a recent survey of rapid sequence induction and tracheal intubation in the emergency department, it took more than five minutes for the anaesthetist to arrive in 17 of the 35 cases that were intubated by an anaesthetist.³ In a survey undertaken in 1995, 31% of responding emergency medicine consultants claimed that they had experienced difficulties obtaining an anaesthetist.⁸ This problem may get worse as, in many hospitals, recruitment of doctors to critical care units is lagging behind the

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Accepted for publication
10 October 2001

recent increase in the number of critical care beds (personal observation).

In many cases, the anaesthetist responding to a call to the emergency department is relatively inexperienced.⁹ Although this person may be perfectly capable of managing the airways of patients in the calm, controlled environment of the operating theatre, they may lack experience in managing critically ill patients in the setting of the emergency department. Not surprisingly, under these circumstances, experienced emergency physicians with a background in anaesthesia may consider themselves better placed to provide timely airway management.

TRAINING OF EMERGENCY PHYSICIANS

If emergency physicians in the UK are going to undertake rapid sequence induction of anaesthesia and tracheal intubation, how are they going to be trained and how will they maintain their skills? The acquisition of advanced airway skills will require substantial clinical training and time. The practicalities of developing the training programme have not yet been tackled. This training might usefully be supplemented by a review course such as the National Emergency Airway Management Course.¹⁰ This three day course introduces emergency physicians to rapid sequence induction of anaesthesia and tracheal intubation using a combination of lectures and practical skill stations. The course includes a variety of other techniques for managing the difficult airway. Such a course can serve only as an introduction to the theory of emergency airway management. Simulator training such as that provided by the Scottish Airway and Ventilation Emergency (SAVE) Course developed in Stirling, Scotland will be used both for training and skills maintenance.

Emergency physicians are increasingly undertaking additional secondments to departments of anaesthesia/intensive care, typically obtaining substantive one year senior house officer (SHO) posts. Secondments of three to six months are unlikely to provide the emergency physician trainee with enough experience in anaesthetising and managing the airway of critically ill patients. The average one year anaesthetic SHO post will provide plenty of experience in the operating theatre but exposure to critically ill patients may be limited. Emergency physicians are likely to gain more relevant experience in the critical care unit where they can learn about the initial management of the critically ill patient. During their time in the critical care unit they could also be involved in the immediate care of critically ill patients in the emergency department. Perhaps the ideal balance in experience would be gained by undertaking a combined period of training in anaesthesia and critical care. These posts would have the additional benefit of increasing collaboration between the critical care unit and the emergency department. Formal rotations could be established between SHO or specialist registrar posts in anaesthesia and emergency medicine.

The maintenance of advanced airway skills may pose a greater problem than their initial acquisition. Emergency physicians working in busy departments may find little difficulty in undertaking intubations frequently. Those in smaller departments will struggle to maintain their skills. Perhaps simulator training supplemented by short secondments to the

operating room or critical care unit will provide the required ongoing training. However the initial training and maintenance of skills in advanced airway management is achieved, any developing practice of rapid sequence induction of anaesthesia and tracheal intubation by emergency physicians must be audited continuously. This will provide the data to show whether or not emergency physicians have been trained adequately in advanced airway management and will give some indication of the level of activity needed to maintain skills.

Anaesthetists will of course continue to have a major role in advanced airway management in the emergency department. We encourage close collaboration between emergency physicians and anaesthetists/critical care physicians because both have an important contribution to make in managing the critically ill patient. This teamwork will extend to managing induction of anaesthesia and tracheal intubation in the emergency department.

In collaboration with The Royal College of Anaesthetists (RCA), the Faculty of Accident and Emergency Medicine (FAEM) wishes to develop, implement and evaluate a suitable competency based training programme for emergency airway management. Representatives from the RCA and FAEM have established the Joint Working Group on Teaching Airway Management to Emergency Practitioners. The whole process may take five years to complete, but it is important that emergency physicians are trained adequately before adopting the skill of rapid sequence induction and tracheal intubation.

ACKNOWLEDGEMENT

With the agreement of the editor in chief of the *British Journal of Anaesthesia* and the editors of the *Emergency Medicine Journal*, this article has been published in both journals simultaneously.

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REFERENCES

- 1 **Sakles JC**, Laurin EG, Rantapaa AA, Panacek EA. Airway management in the emergency department: a one-year study of 610 tracheal intubations. *Ann Emerg Med* 1998;**31**:325-32.
- 2 **Boyle A**. Anaesthetic training for accident and emergency trainees: an opportunity wasted. *Anaesthesia* 1999;**54**:1122-3.
- 3 **Butler J**, Clancy M, Robinson N, *et al*. An observational survey of emergency department rapid sequence intubation. *Emerg Med J* 2001;**18**:343-48.
- 4 **Beale JP**, Graham CA, Thakore SB, *et al*. Endotracheal intubation in the accident and emergency department. *J Accid Emerg Med* 2000;**17**:439.
- 5 **Taylor IR**. Anaesthetic training for trainees in accident and emergency medicine. *Anaesthesia* 2000;**55**:302.
- 6 **Crosby ET**, Cooper RM, Douglas MJ, *et al*. The unanticipated difficult airway with recommendations for management. *Can J Anaesth* 1998;**45**:757-76.
- 7 **Morton T**, Brady S, Clancy M. Difficult airway equipment in English emergency departments. *Anaesthesia* 2000;**55**:485-8.
- 8 **Teale KFH**, Selby IR, James MR. General anaesthesia in accident and emergency departments. *J Accid Emerg Med* 1995;**12**:259-61.
- 9 **Walker A**, Brenchley J. Survey of the use of rapid sequence induction in the accident and emergency department. *J Accid Emerg Med* 2000;**17**:95-7.
- 10 **Walls RM**, Luten RC, Murphy MF, eds. *Manual of emergency airway management*. Philadelphia: Lippincott Williams and Wilkins, 2000.