

## Management of surgical airway emergencies by junior ENT staff: a telephone survey

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### Abstract

**Objective:** To determine levels of confidence in the management of surgical airway emergencies by junior ENT staff.

**Design:** Telephone survey.

**Participants:** 100 Senior House Officers (SHOs) from 100 hospitals in the UK, providing 24 hour first on-call emergency ENT cover.

**Method:** A list of questions was put to participants. The effects of different variables on confidence with airway emergencies and what SHOs considered to be adequate training were compared.

**Results:** Most SHOs provided cover for the management of surgical airway emergencies. Many of the participants were not confident to handle airway emergencies or felt that their training was inadequate. As expected, the amount of previous experience in ENT and the ability to perform advanced airway procedures gave SHOs greater confidence, but attendance at airway courses did not.

**Conclusion:** Confidence in the management of airway problems is variable and does not correlate well with perceived adequacy of training. We suggest that systems of training in airway management are improved. Training issues may be better approached at an individual level, where deficiencies can be addressed.

**Key words:** Otolaryngology; Emergency Medical Services; Education; Airway Obstruction; Great Britain

### Introduction

Along with severe epistaxis and neck trauma, the threatened airway is one of the most important ENT emergencies. ENT surgeons are often involved in the management of acute airway emergencies as invasive procedures may be the last means of achieving satisfactory oxygenation and ventilation.<sup>1</sup>

It is the ENT Senior House Officer (SHO) who is usually the first line of contact. They are not usually supported by on-site senior cover, yet despite the relative importance of this role, current otolaryngology training programmes do not provide uniform airway emergency training for trainees.<sup>2</sup>

The ability of junior doctors to manage acute medical emergencies has been questioned in the past.<sup>3,4</sup> Previous studies have suggested that there is an urgent need to review medical practice in the care of patients presenting as emergencies.<sup>5</sup> Furthermore, the skills taught on many popular courses, for instance, the Advanced Life Support Course, probably do not equip doctors with sufficient confidence and skills to manage advanced airway emergencies and further evaluation was suggested by previous studies.<sup>6</sup> Managing the 'difficult airway' is one of these skills.<sup>7</sup>

No previous research has assessed the way SHOs feel about their role in the provision of emergency care to patients who have airway emergencies.

### Materials and methods

In April 2005, we asked 100 on-call Senior House Officers (SHOs) in ear, nose and throat surgery departments at 100 different UK hospitals a list of questions (see Appendix I) using a telephone interview.

Results were recorded in a database and transferred to Microsoft Excel® and SPSS® for analysis.

### Results and analysis

100 SHOs from 100 different UK hospitals were contacted. The response rate was 100 per cent; no hospital declined to participate.

#### *Experience*

The median time spent in ENT was three months with a range of 0.5 to 100 months.

We split the training period into three monthly intervals, based on the lowest number of months required for approval by the Royal Colleges of Surgeons.<sup>8</sup>

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**TABLE I**  
DISTRIBUTION OF PARTICIPANTS ACCORDING TO EXPERIENCE

Experience in months	Number of participants <i>n</i> = 100
0.5–3	55
Up to 6	10
Up to 9	7
Up to 12	3
Up to 15	2
Up to 18	5
Up to 21	1
Up to 24	2
Up to 27	0
Up to 30	3
Up to 33	0
Up to 36	3
Up to 48	1
Up to 60	2
Up to 72	1
Up to 81	1
Up to 84	1
Up to 96	2
Up to 100	1

The distribution of participants according to ENT experience in months is shown in Table I.

*Senior cover*

All participants stated that they had a second level of cover available if needed; this was a registrar or middle grade level in 88 cases and 12 SHOs had a consultant as a senior on-call.

Out of the 88 middle grades and registrars providing second on-call, 10 (11 per cent) were on site whilst on-call, and 78 (89 per cent) of the registrars

or middle grades were not. All 12 consultants were not required to be on-site when on-call.

As a total, only 10 (10 per cent) of the participants had second level on-call available on site.

*Airway management courses*

Ninety-five (95 per cent) SHOs out of the 100 had done one or more airway training courses. Eighty-five SHOs had done an advanced life support course; Advanced Life Support (ALS), Advanced Trauma Life Support (ATLS) or Advanced Paediatric Life Support (APLS). Ten only did a departmental or in-house training course.

*Adequacy of training*

When we asked whether SHOs considered their training to be adequate, 54 per cent thought it was, 31 per cent thought it was inadequate, 15 per cent did not know.

*Surgical airway techniques*

Eighty-seven per cent stated that they knew how to perform a needle cricothyroidotomy; out of these; 20 (23 per cent) had performed one on a patient; these SHOs had spent a median of 16.5 months in an ENT post, 51 (59 per cent) had training on models and 16 (18 per cent) had not done either.

Fifty nine per cent knew how to do an emergency tracheostomy, out of these, 20 (34 per cent) had performed one themselves as the primary surgeon, 26 (44 per cent) had assisted in the procedure or observed it and 13 (22 per cent) had not done either. The SHOs that stated that they had performed an emergency tracheostomy as the primary

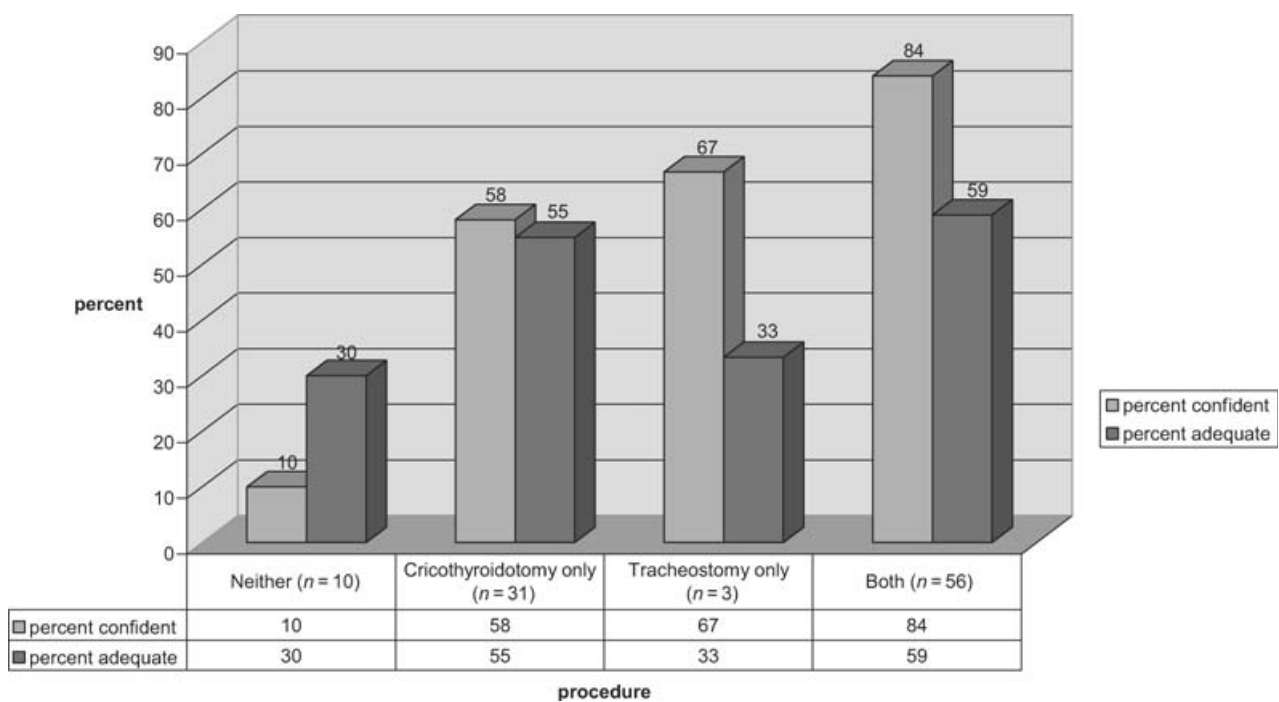


FIG. 1

The effects of skills on competence and adequacy of training.

surgeon had spent a median of 32.5 months in an ENT post, either in the UK or abroad.

Those who had more than 15 months experience were all confident in managing airway emergencies, whether they knew how to perform advanced airway procedures or not, and whether they had attended formal airway training courses or not. For those with less than 15 months experience this still seems to be variable.

Despite the fact that 95 per cent of the participants had attended a formal course in managing airway emergencies, only 54 per cent of these considered their training to be adequate and only 64 per cent felt confident in managing airway emergencies. The levels of correlation between perceived adequacy of training and confidence were weak (Pearson = 0.25,  $p = 0.012$ ).

Interestingly, out of the five participants who did not attend any formal airway training courses at all, three still considered their training to be adequate and four felt confident in managing airway emergencies. These data suggest that attending an airway management training course as an SHO does not seem to affect confidence levels or beliefs about the adequacy of training in comparison to participants who did not attend any approved course at all.

Knowledge of how to perform advanced airway skills was found to have a significant effect on being confident in managing airway emergencies. This is shown in Figure 1.

## Discussion

As ENT surgeons we are expected to provide emergency cover for a variety of serious conditions. Perhaps the most urgent is a threatened airway that requires a rapid surgical intervention. There is seldom time to call upon the expertise of a senior if they reside off site when on-call. For this reason, it is vital that the SHO providing emergency cover for an ENT department is competent to perform basic airway interventions.

- **100 ENT SHOs from 100 different UK hospitals answered a list of questions about training and confidence in the management of airway emergencies**
- **Many SHOs were not confident to handle airway emergencies**
- **Many SHOs considered their training to be inadequate**
- **Attending advanced and departmental life support courses did not have a significant impact on confidence**
- **We believe that addressing this issue at structured appraisals and targeting individual needs would ensure a higher level of competence in a relatively shorter period of time**

From our research, it is clear that many SHOs do not feel confident to provide this service and that many think that their training is inadequate in this area. Furthermore, the fact that there is poor

correlation between perceived adequacy of training and confidence means that the right questions must be asked to determine levels of confidence.

Although experience and knowledge of the specifics of surgical airway management are associated with a greater confidence, many SHOs are relatively new to the job and will not have had the necessary experience to allow them to be comfortable with airway management.

With the new surgical curriculum in sight and the effect it will have on shortening the time spent in basic surgical training, it may be that achieving competence in a short period of time will not be easy. The emphasis should be on targeting individual deficiencies and setting goals over the training period to help the trainees feel more confident and to provide adequate training.

## Conclusions

Most SHOs are expected to provide an emergency airway service, yet many are either not confident to provide this service or think that their training in this area is inadequate. Importantly, the correlation between confidence and perceived adequacy of training is poor. These findings may highlight an area of unsafe practice in many UK hospitals.

Most SHOs have attended formal training in the management of airway difficulties yet still do not feel confident.

Current training in the management of airway emergencies appears to be insufficient and the training that is provided does not appear to be very successful in improving confidence.

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## APPENDIX I

THE QUESTIONNAIRE

Airway Training Questionnaire

Hospital \_\_\_\_\_

**1) What grade are you? (Or equivalent)**  
SHO/SpR/Consultant

**2) How much time have you spent in ENT in all?** \_\_\_\_\_ months

**3) Does your department provide 24 hour emergency ENT cover?**

Yes/No

**4) Do you have a second level of cover on-call?**

Yes/No

**If yes, what grade?**

SpR/Consultant

**And**

On site/from home

**5) Have you done any of the following courses?**

ATLS/ALS/APLS/None

**6) Have you had any formal airway training other than the above?**

Yes/No

**7) Do you think your airway training is**

Adequate/Inadequate/Don't know

**8) Do you feel confident to handle any airway emergency until senior help arrives?**

Yes/No/Don't know

**9) Do you know how to do the following?**

**Needle cricothyroidotomy**

Yes/No

**If yes, have you done it before?**

Yes (patient)/Yes (model)/No

**Emergency tracheostomy**

Yes/No

**If yes, have you done it before?**

Yes (myself)/Assisted or Observed only/No

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