Simulation of airway emergencies in otolaryngology

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Introduction
The ability to appraise and manage airway emergencies is critical in otolaryngology. The traditional surgical training model of ‘see one, do one, teach one’ has limitations in infrequent clinical scenarios. Trainees may acquire airway skills at practical courses, using mannequins and animal models. High-fidelity simulation mannequins are gaining prominence in testing clinical and decision-making skills in realistic training scenarios 1,2. However, cost issues and the need for specialist equipment means access to resources can be limited. We have developed a low-fidelity training programme that is easily accessible to trainees and simple to administrate, with the objective of increasing confidence of participants in managing airway emergencies.

Methods
A half-day training programme was developed between the Otolaryngology and Anaesthetic departments in a tertiary referral hospital. The programme was aimed at foundation, core and specialty trainees in ENT and Anaesthetics, ward staff and nurse practitioners. Prior to the teaching session, participants were provided with algorithms on the management of the patient with stridor (‘can’t intubate, can’t ventilate’ or CICV), the blocked/displaced tracheostomy and airway compromise in the laryngectomee 3.

Airway anatomy, the pathophysiology of airway emergencies and the algorithms were discussed. The techniques of surgical cricothyroidotomy and tracheostomy were taught using an artificial larynx model. The trainees then completed moulage scenarios with verbal feedback from supervising senior doctors. Confidence in managing airway emergencies was evaluated prior to and following training using a Likert scale.

Results
Eighteen participants completed the course, six of whom had no previous airway management experience. Mean confidence scores increased from 1.9 to 2.9/5 in the CICV scenario, 1.6 to 2.7 in performing a surgical airway and 2.9 to 3.9 in managing the blocked tracheostomy. All participants felt the scenarios were realistic and the ‘shock value’ of completing simulation scenarios provided an extra learning stimulus.

Conclusions
A low-fidelity simulation-based training of airway emergencies is effective in improving the confidence, knowledge and technical skills of Otolaryngology and Anaesthetic clinicians.

References