Methods

In our region we deliver a multidisciplinary paediatric airway course. Within this we have developed a paediatric tracheostomy simulation station. This utilises cadaveric adult rabbits, providing an anatomically realistic model of a neonate’s trachea. Following a brief powerpoint presentation and cadaveric demonstration there is supervised dissection time for delegates to practice ‘crash’ or elective surgical tracheostomies depending on their learning requirements. Some trainees have additionally requested assessment during their simulation session which can also be performed.

Results

• Over 3 years 220 professionals (including anaesthetists, emergency doctors and ENT surgeons) have undertaken this simulation.
• Delegates self assess their confidence in performing a paediatric tracheostomy before and after the course and the mean confidence score increases from 4.5 to 7.6/10.
• This is comparable with confidence improvements observed with intubation techniques, which require less tissue fidelity and can effectively make use of readily available plastic mannequins.
• Qualitative feedback from delegates has always been excellent regarding the inclusion of this simulation in the course.

Conclusion

The rabbit model is a valued and effective teaching tool for the delivery of paediatric surgical tracheostomy training. Given the presence of the skin, soft tissues and cartilaginous rings, delegates can practice, with high fidelity, the placement of stay sutures and maturation sutures as part of a planned elective tracheostomy procedure. Alternatively they can practice emergency ‘crash’ tracheostomy with tissues with almost identical mobility and compliance to those found in the neonate.

The session also can be used for assessment of trainees in the skills of surgical tracheostomy which can be hugely beneficial if the trainee has not received exposure to paediatric cases in a tertiary centre during their training.