



Guidance on the provision of anaesthesia services for Head and Neck Surgery

When considering the provision of anaesthesia, the Royal College of Anaesthetists recommends that the following areas should be addressed. The goal is to ensure a comprehensive, quality service dedicated to the care of patients and to the education and professional development of staff. The provision of adequate funding to provide the services described should be considered.

Summary

- Patients undergoing urgent head and neck procedures to relieve a compromised airway resulting from trauma or after surgery must have quick access to a dedicated emergency theatre at all times.¹⁻³
- Upper airway problems are common, and head and neck services should be provided by anaesthetists competent in the advanced management of the difficult airway.⁴
- Anaesthetists should always work with appropriately trained and skilled assistants, and have access to a range of difficult airway apparatus including fibre-optic intubation equipment and trans-cricothyroid jet ventilation.^{4,5}
- Access to a critical care facility must be available when required.⁶
- The treatment of neonates, young children with significant co-morbidity and children with complex surgical conditions should only take place in units with specialist paediatric facilities.⁷

Introduction: The importance of head and neck anaesthesia services

- Head and neck surgery includes a wide spectrum of surgical interventions, ranging from short day case procedures to very long and complex operations.^{8,9}
- Anaesthesia for surgery of the head and neck is likely to include the disciplines of ear, nose and throat, maxillofacial and dental surgery. In some instances, such as surgery on the base of skull and for craniofacial surgery, formal integration with a neurosurgical and plastic surgical service may be required.
- The patient population undergoing head and neck surgery ranges from neonates and young children to the elderly.¹⁰
- Patients requiring major head and neck surgery frequently have extensive and debilitating co-morbid problems and may need repeated admissions for treatment.⁹
- Conditions that require head and neck surgery affect patients of all ages, and a significant proportion are children. The treatment of neonates, young children with significant co-morbidity and children with complex surgical conditions should only take place in units with specialist paediatric facilities. Simple procedures such as teeth extraction, the excision of tonsils or adenoid tissue and the insertion of grommets are frequently carried out on children in a general hospital setting.
- The indications for head and neck surgery vary widely from minor infective and inflammatory disorders to extensive malignant disease. In the latter case, surgical excision and reconstruction, often using free tissue transfer, require complex peri-operative anaesthetic management. This kind of surgery often takes time not easily accommodated within the time constraints of a normal operating list.

- Cancers of the upper digestive tract form the majority of head and neck oncology, and these patients are typically older and commonly have serious co-existing cardiovascular and respiratory disease, reflecting the social risk factors for their malignancy. Adequate facilities should be available for pre-operative assessment.
- Patients undergoing long and complex surgery or who have significant underlying medical problems will need the provision of post-operative intensive or high dependency care.
- Many patients with intra-oral malignancy, craniofacial disorders and traumatic facial injuries present with a predicted difficult intubation. This aspect of the service mandates that the full range of human and other resources necessary to manage difficult airways, including fibre-optic intubation equipment, are always available.
- It is common for head and neck surgery to encroach upon the airway or, in the case of a tracheostomy, require changing of the airway during surgery. It is therefore essential that there is close liaison and good teamwork between surgeons, anaesthetists and operating department practitioners (ODPs).
- Patients presenting with impending airway obstruction may need emergency surgery. The ability to provide this service dictates that a dedicated, appropriately staffed and equipped theatre be available 24 hours a day.¹¹
- All community dental work requiring general anaesthesia is now carried out in a hospital setting. There are estimated to be 65,000 children and young people with severe learning disabilities in the UK, and a significant proportion of those needing dental treatment will be referred for general anaesthesia.
- A significant proportion of head and neck surgery is of a routine nature and much of the service is ideally provided for by a dedicated day-case facility.

Levels of provision of service

1 Staffing requirements

- 1.1 Anaesthesia for head and neck surgery should be consultant led, and all regular sessions should have assigned to them a named consultant or staff/associate specialist anaesthetist who is skilled and experienced in the provision of this service.
- 1.2 In large departments it may be desirable to appoint a lead anaesthetist for head and neck services, who

could provide specialist medical supervision and liaison with the lead clinician for the department and the theatre management team.

- 1.3 Where scheduled operations cannot be accommodated within normal list times, consideration should be given to anaesthetic team-work, allowing for appropriate rest periods, both during and following such procedures.
- 1.4 Anaesthetists must always be supported by dedicated, appropriately skilled assistants, and the recovery facilities should be staffed during all operating hours and have appropriate anaesthetic support, until the patient meets agreed discharge criteria.
- 1.5 There should be adequate levels of appropriately experienced medical and non-medical staff to provide 24-hour cover for emergency head and neck surgery.
- 1.6 Where a paediatric service is being provided, all of the medical and assisting non-medical staff, including recovery room staff, must have relevant and recent training in paediatric anaesthesia and resuscitation.

2 Equipment, support services and facilities

- 2.1 There should be a full range of equipment relating to the management of the difficult airway available within the head and neck theatre suite. In particular, equipment for fibre-optic intubation and trans-cricothyroid jet ventilation must always be available. Suitable theatre-based sterilisation equipment should allow for the quick turn-around of fibre-optic endoscopes.
- 2.2 There should be clear, written guidelines regarding the management of common or serious airway problems and advanced airway procedures.
- 2.3 The use of lasers during head and neck surgery is common, and therefore training and safety equipment including laser-protected endotracheal tubes, goggles and theatre door screening need to be provided.
- 2.4 Patients returning to the ward, who have had a tracheostomy or other airway surgery, should be cared for in designated post-operative observation areas, by adequate levels of nursing staff who are skilled in the care of the surgical airway. The location of this area should also facilitate the quick return to theatre should the need arise.
- 2.5 Patients who have undergone complex head and neck surgery may require transfer to an appropriate level of critical care facility. Additional equipment

necessary to achieve this safely, including portable non-invasive and invasive monitoring, emergency transfer packs and portable ventilators, may also be required.

- 2.6 Adequate facilities should be available for the pre-operative anaesthetic assessment of patients undergoing major head and neck surgery.

3 Areas of special requirement

- 3.1 When providing head and neck anaesthetic services for children, there will be a number of special requirements as covered in the guidance on the provision of paediatric services (see Chapter 8: Guidance for the provision of paediatric anaesthesia services).
- 3.2 The community dental service will need to cater for patients with learning disabilities undergoing general anaesthesia for dental procedures. This vulnerable group of patients require access, communication and peri-operative care around their individual needs. (Further information about anaesthesia for community dentistry will be available in the 'Anaesthesia in the non-theatre environment' chapter (in preparation).
- 3.3 Particular emphasis should be placed on the need for specialist post-operative ward care. Wherever possible, patients who have had airway-related surgery should be looked after in the early post-operative period on dedicated wards with adequate levels of medical and nursing staff who are familiar with the recognition and management of related airway problems.
- 3.4 Where major head and neck surgery is carried out there may be a regular elective requirement for post-operative high dependency and intensive care.

4 Training and education

- 4.1 Patients requiring head and neck procedures should be managed by anaesthetists who have had an appropriate level of training in this field, and who have acquired the relevant knowledge and skills needed to care for patients undergoing peri-airway surgery.
- 4.2 In order to maintain the necessary repertoire of skills, consultant anaesthetists providing a head and neck service should have a regular commitment to the specialty, and adequate time must be made for them to participate in a range of relevant continuing medical education activities.

- 4.3 Head and neck surgery provides an excellent opportunity for the formal and systematic training of anaesthetists in the use of advanced methods for airway management, including fibre-optic intubation techniques. Where possible, additional equipment such as monitors, video recorders and airway simulators should be made available to facilitate this important aspect of anaesthetic education.

5 Research and audit

- 5.1 In addition to routine audit and the reporting of critical incidents, any morbidity relating to airway management should be presented at departmental clinical governance meetings, and documented for audit purposes.

6 Organisation and administration

- 6.1 A pre-operative assessment clinic with the facility to arrange pre-admission anaesthetic consultation for those patients with complex airway problems or severe co-morbidity should exist.
- 6.2 Where necessary, integration with other surgical specialties, such as neurosurgery and plastic surgery, may be needed to formalise joint operating lists.
- 6.3 The ability of anaesthetists with other specialist interests, such as neuroanaesthesia and intensive care medicine, to contribute towards the provision, planning and implementation of the service should be recognised.
- 6.4 Any daytime emergency lists should be organised and staffed by senior anaesthetists and surgeons working to a fixed sessional pattern who have no conflicting clinical commitments.
- 6.5 Where major elective head and neck surgery requiring post-operative critical care is undertaken, the funding for and provision of these beds must be planned to meet the demands of the service, so that unnecessary cancellations can be minimised and the use of theatre resources optimised.
- 6.6 When very long operations are scheduled on a regular basis, it will be necessary to arrange the funding and resources to support long duration lists.

7 Patient information

- 7.1 It is not uncommon in head and neck anaesthesia to use techniques such as inhalational induction and awake fibre-optic intubation. When such techniques are planned, it is especially important to fully inform patients of exactly what to expect.

- 7.2** Specific information regarding what to expect in the immediate post-operative period is also particularly relevant to head and neck surgery. Examples would include the need to breath through the mouth in nasal surgery, the inability to open the mouth when wires are used for dental occlusion, and blurred vision following the administration of topical eye preparations. Such procedure specific explanations should ideally be supported by written information.
- 7.3** As part of a 'difficult airway follow-up',⁴ patients should be informed in writing about any airway problem encountered and be advised to bring it to the attention of anaesthetists during any future pre-operative assessment.

References

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- 10 Department of Health. Hospital Episode Statistics; 2002–2003 (www.hesonline.nhs.uk).
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Further reading

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