The Lanarkshire
Endoscopic Airway Training Course

About the Course

The Lanarkshire Endoscopic Airway Course is an intensive training programme in fibreoptic endoscopy. Generally, training in fibreoptic intubation is difficult to obtain and experience of awake techniques even more so. On this course, we demonstrate, teach and supervise delegates in topical local anaesthesia of the airway and airway endoscopy using course delegates as subjects. There are two levels of course entry, as a participant or as an observer. Observers will not be expected to undergo airway endoscopy. The number of delegates is small to maintain intensive instruction. Therefore numbers are limited to 6 candidates.

Participants

Participants will be tutored in all aspects of the course as it appears in the course agenda. The final practical session at the end will allow participants to bring together the practical skills they have learned. Following a demonstration on an instructor, participants will perform topical local anaesthesia and endoscopy of the airway on each other in turn, under very close supervision. We expect that participants will perform endoscopy on three individuals and be given the opportunity to perform airway local anaesthesia in the process. There are medical exclusions which mean not everyone can be a candidate. These are listed on the application/consent form. Individuals excluded for medical reasons and those who do not wish to participate in the final practical session will be considered as observers.

Observers

Observers will attend all theoretical aspects of the course, plus practical demonstrations. They will be encouraged to participate in practical sessions of airway recognition, endoscope manipulation/steering, and endoscopic examination of airway models. They will observe airway anaesthesia and airway endoscopy performed on participants.
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Introduction

Fibreoptic intubation is now regarded as an essential skill that all trained anaesthetists should master. Airway endoscopy is fairly straightforward, but many anaesthetists find it difficult and frustrating to learn. Fibreoptic intubation is often most useful when employed under local anaesthesia, which is very fortunate since airway endoscopy is most easily performed on conscious patients, provided airway anaesthesia is satisfactory.

It is our intention to provide an intensive practical course of instruction in handling an endoscope, orientation and recognition of anatomical features of the airway, and performance of airway endoscopy under local anaesthesia. The course includes a live demonstration of airway endoscopy of an instructor. Delegates will then practise their skills on each other under direct supervision and experience for themselves what their patients may expect.

This course aims to teach a method which delegates may take with them and use in their clinical practice. In order to eliminate confusion, the course is didactic. We will teach and demonstrate a method which is straightforward and reproducible under other circumstances. Delegates arrive with varying levels of experience. Some have already evolved their own routine for airway endoscopy. This is sometimes a problem since, in the later practical stages of the course, participants will work closely together. In order to fully co-operate, we must all work in the same way. It is essential to the smooth running of the course that practical sessions are managed as taught. Otherwise, less experienced course members may become confused or disorientated and thus be unfairly deprived of benefit.

Delegates will be given the opportunity to air their views and experiences during the final session. We hope this period will prove beneficial to the instructors, enabling us to learn from the delegates and to find ways of improving our training course.
Intubation Under Local Anaesthetic!
How safe is it?

Before volunteering for an airway endoscopy, you will need to understand what is involved, the risks of the procedure and exactly how you can expect to feel during and afterwards.

This method of airway anaesthesia has been used repeatedly on patients and the instructors themselves, all of whom have undergone multiple tracheal endoscopy under local anaesthesia to refine their technique.

Method

Following faculty review of your application form, you may be given oral Ranitidine to take the evening before and morning of the procedure.

The procedure takes place in an operating theatre, with full resuscitation facilities available.

After a six hour fast, you will be weighed and routine monitoring established. You will be given a chlorhexidine mouthwash to gargle. This will be followed by topical xylometazoline (Otrivine®) nose drops applied to both nostrils. A 20/22g cannula is inserted into the dorsum of the hand or the antecubital fossa and glycopyrrolate 200-400 micrograms given intravenously. A 500ml bag of Hartmann’s solution is slowly administered. Oxygen will be administered by nasal cannulae and followed by the topical application of lignocaine directly or as a fine spray throughout the airway via a fibreoptic scope. When satisfactory anaesthesia has been achieved and tested, an endoscope will be passed into the trachea. Airway anaesthesia and endoscopy will be performed by course members under direct supervision of an experienced consultant. Each delegate will perform part of the procedure on the subject. Pulse, BP and SaO₂ will be monitored at frequent intervals during the procedure. No local anaesthetic injections, cocaine or sedation will be used.

Risks

**Trauma** to the airway from nose to main bronchi, including bleeding or perforation and abscess formation.

**Allergic** reactions to lignocaine, glycopyrrolate or phenylephrine.

**Drug** toxicity due to lignocaine, resulting in convulsions, myocardial depression or cardiac arrest.

**Aspiration** of gastric contents.

**Infection**, localised or systemic, due to Hepatitis B, C, HIV, TB, CJD and any other contaminating organisms.

With the exception of minor nasopharyngeal trauma, none of these complications has been observed during the preparatory stages. Doses of lignocaine applied to the airway are large (up to 9 mg/kg). These have been found to be acceptable in patients undergoing bronchoscopy (Efthimiou J, Higenbottam T, Holt D, Cochrane GM. Plasma concentrations of lignocaine during fibreoptic bronchoscopy. Thorax 1982; 37: 68-71). Awake fibreoptic intubation has been reported to be safe in patients at risk of aspiration (Ovassapian A, Krejcie TC, Yelich SJ, Dykes MHM. Awake fibreoptic intubation in patients at high risk of aspiration. Br. J. Anesth 1989; 62: 13-16).
How Does it Feel?

There is obviously a degree of apprehension associated with anticipation of an airway endoscopy. We observe a six hour fast before the procedure, but despite this, it is advisable to ensure an empty bladder as the whole procedure may take an hour.

You will be settled in the supine position, with head elevated on a fairly comfortable operating table and monitoring will be applied - NIBP, ECG and pulse oximetry. After a period of stabilisation to give you time to settle down, a small cannula will be inserted into the back of your hand or the antecubital fossa, whichever you prefer. You will be given a chlorhexidine mouthwash to gargle with. Early preparation includes the application of a vasoconstrictor to the nose. We use xylometazoline two squirts to each nostril. This is a little uncomfortable and sometimes makes the eyes water. This is followed by the IV administration of glycopyrrolate 200-400 micrograms. Over the following ten minutes, the glycopyrrolate will produce a dry mouth and potentially dry eyes. Participants who usually wear contact lenses are advised to wear their glasses for the endoscopy session as the glycopyrrolate administration can lead to discomfort of contact lense wear. Nebulised lignocaine 4% is used to begin anaesthetising the upper airway. This is followed by the application of co-phenylcaine forte (phenylephrine 0.5%, lignocaine 5% and benzalkonium 0.001%) spray. Topical application of local anaesthetic spray to the airway tastes unpleasant, as lignocaine has a bitter taste and may produce coughing or gagging. If the endoscope is advanced too early, before satisfactory anaesthesia has been achieved, this can cause swallowing, coughing, gagging or retching.

When the larynx ceases to react to further increments of local anaesthetic the endoscope is advanced until it finally sits in the trachea. In general, the procedure is well tolerated.

The subject will feel a certain degree of elation when procedure is over. This sensation is enhanced by the effects of lignocaine which produces some dysphoria. Following the procedure, the subject will be aware of a dry mouth which outlasts the procedure by 2-3 hours and of nasal stuffiness similar to that which occurs in the early stages of a cold. When orpharyngeal sensation returns to normal, we recommend a warm cold-cure drink containing aspirin or paracetamol to deal with the nasal discomfort. This usually settles after 12 to 14 hours. Other useful things to have available are a Lipsyl stick for the dry mouth and some Vicks Vaporub which eases nasal stuffiness overnight.

Clearly, in a course of this kind, it is essential that we exercise utmost caution. For this reason we are explicit about the risks and some delegates will be refused entry as participants.

Participating delegates should not drive for 4 hours after endoscopic intubation. Therefore, if necessary, accommodation should be arranged locally following the course. A training room will be available to wait in if required with refreshments being available until the 4 hour time frame has elapsed.

It is essential that you are not on call the evening of the course or the following day.

If you need additional information, have concerns about a medical condition or the practical aspects, please contact a course instructor on 01698 855510.