used by non-cardiologists to assist in the management of the acutely ill patient. The purpose of the two day course is to demystify echocardiography by giving delegates the core knowledge required and an opportunity to practise the skills learnt.

On arrival, each delegate receives a folder, which is virtually a textbook on handheld echo. Initial lectures are based around cardiac anatomy and physiology as well as the physics behind ultrasound and the generic approach to ultrasound/echo. In the afternoon, we divided into smaller groups (five or six people) and had the opportunity for supervised practise on normal volunteers.

Day two was predominantly about looking for pathology and included lectures on effusions, ventricular function and valves. In the afternoon we were set loose on real patients and ended up looking at leaking valves, wall motion abnormalities, hypertrophy, and dilated chambers. The aim was focussed echo (or 'quick look echo') and the course was not training us to be echocardiographers; rather to use the echo to look for gross problems that either require a formal scan or an emergency intervention.

By the end of the course I really felt on the brink of a major breakthrough in my own skills and a quantum leap for the specialty. All I needed now was the opportunity to practise in my own time and here is the real problem. Most of the delegates on the course were intensivists and virtually all of them already had portable ultrasound machines. Those that didn't have a machine felt confident they would get one relatively easily.

Contrast this with emergency medicine where there seems to be an inherent problem getting hold of kit in general and of 'high tech' kit in particular. All this despite the potential benefits of Focussed Abdominal Sonography for Trauma (FAST) scanning, abdominal aorta assessment and ultrasound guided central line placement. I wonder how many emergency physicians need to try and 'borrow' an ultrasound machine either to help manage a sick patient or just to skill retain?

In summary, I highly recommend this course to emergency physicians. As emergency medicine continues to move forward at a pace, the ability to do handheld echo may well be considered a future 'core skill' in much the same way as RSI is currently heading.

For further information on the course contact Kirsty on 07986284722 or email info@handheldcourses.co.uk.

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Complications following attempted rapid sequence intubation

The case report by Bauer *et al.* highlights that problems occur following rapid sequence induction (RSI) and may lead to invasive procedures.[1] These can cause harm to the patient.

There are other lessons to be learnt that the authors have not elaborated upon.

The presence of fasciculations and flaccid paralysis following the first dose of suxamethonium indicated the onset of the expected effect.

Despite masseter spasm, the patient could be easily ventilated with a bag and mask. Subsequent deterioration in oxygenation after some time resulted in a surgical airway.

A significant learning point omitted from the authors' summary was the administration to this patient of a second dose of suxamethonium in the presence of masseter spasm. This should not have occurred for two reasons:

1. Masseter spasm is an early sign of malignant hyperpyrexia (MH), which has a mortality rate even with dantrolene of around 5%. Suxamethonium is a significant precipitant in susceptible individuals.
2. Repeated doses of suxamethonium change the paralysing effect of the drug from one that wears off within 3–5 minutes (''Phase I block'') to one resembling a non-depolarising neuromuscular block (''Phase II block'') which lasts significantly longer. It has been long established that this type of block may begin at doses of 2 mg/kg.[2]

The appropriate action when unable to intubate, is to maintain oxygenation, call for experienced help and strongly consider terminating anaesthesia.[3] In this case, the need for a surgical airway may well have been avoided.

Repeated doses of suxamethonium can disproportionately extend the duration of paralysis and may add to a developing, potentially fatal condition (MH) caused by the first dose.

The process of inducing anaesthesia and paralysis is not usually as difficult as dealing with the problems that may arise if things do not go smoothly. Practitioners should be aware of the adverse effects of drugs they are using and be able to instigate appropriate methods of dealing with problems before undertaking RSI.

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References

1 **Bauer SJ**, Orio K, Adams BD. Succinylcholine induced masseter spasm during rapid sequence intubation may require a surgical airway: case report. *Emerg Med J* 2005;**22**:456–458.
2 **Lee C**. Dose relationships of phase II, tachyphylaxis and train-of- four fade in suxamethonium-induced dual neuromuscular block in man. *Br J Anaesth* Aug, 1975;**47**:841–845.
3 **Difficult Airway Society guidelines for management of the unanticipated difficult intubation**. Henderson JJ, Popat MT, Latto IP, Pearce AC; Difficult Airway Society. *Anaesthesia*, 2004 Jul, **59**(7):675–94.

Use of Flumazenil in Benzodiazepine overdose

The NICE guidelines[1] for management of self harm state that the administration of Flumazenil should be considered in patients presenting with an overdose of benzodiazepines. They state that cautious use may reduce the need for admission to Intensive Care. The guidelines advocate its use in patients with impaired conscious level. They state that Flumazenil should not be used if the patient is benzodiazepine dependent (the guidelines, do not offer a definition of dependence). Co-ingestion of pro-convulsants, including tricyclic antidepressants, or a history of epilepsy are also contraindications. Flumazenil is not currently licensed for the treatment of benzodiazepine overdose in the UK.[2]

We carried out a short study of benzodiazepine overdoses presenting to our emergency department over a 10 week period. The data collected showed that 22 patients had ingested benzodiazepines. Of this group, 21 used them daily, We defined this as being dependent on benzodiazepines. One had co-ingested drugs, which would contraindicate the use of Flumazenil; one had a history of epilepsy, and one was on regular anticonvulsant treatment. Fourteen had a history of depression, and six were on antidepressant medication.

These figures suggest a very high prevalence of contraindications to the use of Flumazenil in patients presenting with an overdose to our Department. The decision, however, to administer therapeutic Flumazenil is not straightforward.

In managing patients with impaired conscious level secondary to an overdose of benzodiazepines the use of Flumazenil is problematic, as it can be very difficult to exclude contraindications to its administration in the resuscitation room.

Indeed the National Poisons Information Service (Toxbase) states clearly that Flumazenil should only rarely be required in benzodiazepine overdose.[3] This appears to be at odds with the advice given in the NICE guidelines. Given these difficulties, we feel that less emphasis should be placed on the use of Flumazenil in patients presenting with benzodiazepine overdose than there is presently in the NICE guidelines on self harm. It may be less confusing if the NICE guidelines gave the same advice on the use of Flumazenil as Toxbase. We also suggest that Flumazenil be administered in these circumstances only after discussion directly with the National Poisons Information Service.

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References

1 **National Institute for Clinical Excellence**. Clinical Guideline 16 Self-harm: the short-term physical and psychological management and secondary prevention of self-harm in primary and secondary care Issue date: July 2004. http://www.nice.org.uk/pdf/CG016NICEguideline.pdf.
2 **National Formulary: Flumazenil**. http://bnf.org/bnf/bnf/49/openat/6675.htm?q=%22flumazenil%22.
3 **National Poisons Information Service**. http://www.spib.axl.co.uk/toxbaseindex.htm.