THE ROYAL COLLEGE OF ANAESTHETISTS AND THE PAIN SOCIETY

Recommendations on the use of epidural injections for the treatment of back pain and leg pain of spinal origin (March 2002)

Disclaimer

These recommendations are concerned with the competencies of doctors who perform epidural injections for the treatment of back pain and leg pain of spinal origin and with the clinical environment in which such injections are performed. The recommendations do not endorse or recommend the use of any particular medication or product for epidural injection. The choice of medication or product for epidural injection is the responsibility of the individual practitioner. The organisations involved in the preparation of these recommendations, including the Royal College of Anaesthetists and The Pain Society, take no responsibility legal or otherwise for the choice by an individual practitioner of a medication or product used for epidural injection.

Introduction

1 The General Medical Council advises doctors that they must 'make the care of your patient your first concern.' General Medical Council *Good Medical Practice* May 2001.

2 The desire to improve safety for patients receiving epidural injections reflects the evolution of professional standards in all areas of medical practice. Doctors must strive to provide the best possible care and safest treatment for all patients by reducing risk to an absolute minimum.

3 Historical precedent and tradition can no longer be regarded as justification for practices that are perceived to fall below the standards acceptable to a responsible body of doctors. If one patient is harmed by sub-standard practice then that is one too many.

4 The Royal College of Anaesthetists always encourages safe practice. It is the desire of the College to have safe practice adopted by all doctors who perform invasive treatment near the spinal cord and near potential sources of infection. This includes the anus and perineum in addition to obvious skin lesions.

5 The recommendations refer to 'single-shot' epidural injections that are performed by either the lumbar or caudal routes. The risks are similar with the two routes. There may be an increased risk of infection with the caudal approach because it is closer to potential sources of infection.

6 The recommendations do not refer to the insertion of in-dwelling epidural catheters.

7 The injection of local anaesthetic (whether amide or ester) is associated with specific risks. Additional precautions are necessary for patients who receive epidural local anaesthetic injections. In some techniques relatively large volumes of local anaesthetic are injected thereby delivering a large dose of the active drug even though the concentration is low.

8 The use of local anaesthetic for epidural injection is associated with the risk of inadvertent intrathecal injection leading to a 'total spinal' or of inadvertent intravenous injection resulting in local anaesthetic toxicity. These serious untoward incidents may occur during either lumbar or caudal injection. Both clinical situations are life threatening and require immediate resuscitation.

9 The recommendations do not address any issues concerning the evidence for effectiveness of epidural injections (including epidural steroid injections) in the management of back and leg pain. For an analysis of the evidence, and of long term safety, see:

a National Health and Medical Research Council of Australia. Epidural use of steroids in the management of back pain and sciatica of spinal origin. Canberra, NHMRC, 1994.

b Watts RW, Silagy CA. A meta-analysis on the efficacy of epidural corticosteroids in the treatment of sciatica. *Anaesthesia and Intensive Care* 1995;23:564–569.

c Koes BW, Scholten RJ, Mens JM, Bouter LM. Efficacy of epidural steroid injections for low-back pain and sciatica: a systematic review of randomised clinical trials. Pain 1995;63:279–288.

d Abram SE, O'Connor TC. Complications associated with epidural steroid injections. *Regional Anesthesia* 1996;21:149–162.

e McQuay H, Moore A. An evidence-based resource for pain relief. Oxford: Oxford University Press, 1998:216–218.

f van Tulder MW, Koes BW, Bouter LM. Conservative treatment of acute and chronic non-specific low back pain. Spine 1997;22: 2128-2156.

Recommendations

1 Doctors in training should possess defined competencies before performing epidural injections unsupervised (see Explanatory note **a**).

2 Established practitioners in non-training grades must ensure that they possess the competencies defined for trainees if they wish to perform epidural injections and/or train others (see Explanatory note **b**).

3 Any doctor who performs epidural injections at the request of another doctor must be aware that the doctor who performs the injections will be held wholly or jointly responsible for any adverse outcomes of the injections. The doctor who undertakes the procedure must possess the defined competencies or receive appropriate supervision. The doctor who undertakes the procedure must be satisfied that the indications for the injection are appropriate and that there are no contraindications to epidural injection.

4 All doctors who perform epidural injections must be competent in resuscitation (see Explanatory note c).

5 The process of obtaining consent from the patient before an epidural injection is performed must comply with the current guidance published by the General Medical Council and the Department of Health. The doctor who obtains consent, if he or she is not the person who carries out the epidural injection, must be suitably trained and qualified, must have sufficient knowledge of the proposed treatment, and must understand the risks involved. It is the responsibility of the doctor, or doctors, who prescribe and perform the injection to decide what to explain to the patient if any drug is being used for an indication and by a route that is not recommended in the product information sheet or drug licence.

6 Epidural injections must be performed using an aseptic technique. This should include: hand washing, sterile gloves, hat, mask, skin preparation and sterile drapes around the injection site. Normally a sterile gown should be included as a part of the aseptic technique.

7 Epidural injections must be performed in a setting that provides appropriate monitoring and resuscitation facilities. If local anaesthetic is to be injected there must be immediate availability of full resuscitation equipment and the presence of a skilled assistant for the operator. Minimum monitoring during the performance of an injection containing local anaesthetic should include regular measurement of blood pressure and pulse oximetry (see Explanatory note **d**).

8 Epidural injections for the treatment of back pain and leg pain of spinal origin should not be performed without good reason on a *patient whose conscious level is depressed (as a result* of anaesthesia or sedation), or a patient who cannot communicate (as a result of mental health problems or language difficulties).

9 If local anaesthetic has been injected into the epidural space the minimum monitoring after injection should include regular measurement of pulse rate and blood pressure every five minutes for the first 30 minutes. Oxygen saturation should be monitored during recovery if sedation has been used during the procedure. If local anaesthetic has been injected into the epidural space there should be assessment of lower limb motor power and of ability to pass urine before discharging the patient (see Explanatory note e).

10 There must be contemporaneous records of the consent for the procedure, of the technique used and of the physiological monitoring before, during and after the procedure.

11 Following discharge the patient must be able to contact a member of the team should a problem arise in the immediate post-injection period.

12 Follow-up should be arranged with the person who performed the injection or with another member of the team who has responsibility for the patient's ongoing care and has access to the patient's records. The timing of this follow-up will depend upon clinical circumstances but normally should occur no later than six weeks after the injection.

Explanatory notes

a Competence describes possession of the knowledge, skills and attitudes required to undertake safe clinical practice at a level commensurate with the grade of the doctor. For epidural injections the following competencies apply:

i *Knowledge*
Applied anatomy, pathology and clinical characteristics of acute and chronic spinal pain and radicular pain, interpretation of investigations such as CT and MRI scans, pharmacology of drugs injected into the epidural space, indications, contraindications (including coagulopathies, anticoagulant medication and local infection at the proposed site of injection), evidence of benefit, potential risks and complications.

ii *Skills*

Performance of caudal epidural injection, performance of lumbar epidural injection. (Some practitioners may confine their skills to caudal epidural injection.) Identification of the epidural space. Recognition of incorrect needle placement. Recognition of dural puncture. Perioperative management of patient. Management of complications.

iii *Attitudes*

Ability to select appropriate patients. Ability to communicate with patients and to offer appropriate information. Gentle handling of patient throughout treatment.

It is important to note the standards set by CNST (Clinical Negligence Scheme for Trusts). From 1 October 1999 the CNST requires that all medical staff in training when taking up a new post are be given by their supervisor a list of the technical skills they are expected to be able to perform. The trainees must indicate their competence to perform the specified tasks. A supervised training programme must rectify any deficiencies in initial, or continuing, competence.

b This is a matter of responsibility for the individual practitioner and also for the institution in which that practitioner performs epidural injections.

c Resuscitation skills must be appropriate for the type of epidural injection. The injection of local anaesthetic carries the risk of inadvertent intrathecal or intravascular injection. Both these situations require an advanced level of resuscitation skills. Competence in resuscitation includes:

i *Knowledge*

Resuscitation guidelines of Resuscitation Council (UK). Causes of cardiac arrest during epidural injections. Clinical features of local anaesthetic toxicity. The factors relating to brain injury at cardiac arrest. Factors influencing the effectiveness of cardiac compression. Drugs used during cardiopulmonary resuscitation (CPR) (adrenaline, atropine, lignocaine, calcium, magnesium, sodium bicarbonate). The ethics of CPR. Record keeping at CPR.

ii *Skills*

Able to recognise total spinal, local anaesthetic toxicity, cardiac and respiratory arrest. Able to perform cardiac compression. Able to manage the airway during CPR: using expired air breathing, bag and mask, laryngeal mask and endotracheal intubation. Able to perform CPR either single-handed or as a member of a team. Able to use a defibrillator. Able to interpret arrhythmias causing and associated with cardiac arrest. Able to perform resuscitation sequences for ventricular tachycardia, ventricular fibrillation, asystole, EMD (electromechanical dissociation). Able to move a patient into the recovery position.

iii *Attitudes*

Desire to offer the best possible chance of survival. Able to organise ongoing care after resuscitation.

d The use of local anaesthetic for epidural injection is associated with the risk of inadvertent intrathecal injection leading to a 'total spinal' or of inadvertent intravenous injection resulting in local anaesthetic toxicity. Both clinical situations are life threatening and require immediate resuscitation. The skilled assistant should be a doctor, nurse or operating department assistant who has undergone training in resuscitation and has kept up to date in resuscitation skills appropriate for the potential clinical situation.

e The introduction of minimal monitoring during anaesthesia represented a major advance in patient safety. Even though adverse events are relatively uncommon, if one patient is harmed by the absence of monitoring, then that is one too many.