Correspondence

Reuse of syringes in anaesthesia practice

To the Editor:
Anaesthetists have felt secure in reusing syringes from patient to patient as long as needles were changed and the solution had not obviously been contaminated with blood. Over the last decade, this practice has become less common. Many feel that injecting a drug, at the port most distant from the patient in an intravenous line will guarantee the syringe contents to be free of contamination. However, the contamination rate with blood is between 3.3% and 0.3% depending on the distance of the port from the catheter.[1] The presence of the one way valve in the administration set will in most instances prevent back flow of blood from the patient to the most distant port. However, the competence of the one way valve cannot be guaranteed, as demonstrated by Crosby while injecting propofol.[2] Only minimal contamination with blood to transmit viral disease.[1]

The contents of a refilled syringe cannot be guaranteed to be free of contamination.[3] Health Canada in August 1994 stated that the practice of using single use low osmolar dye intravenous delivery systems on more than one patient is potentially unsafe.[4] I suggest that the reuse of syringes in anaesthesia is analogous and should be subject to this advisory notice.

There is a small but finite risk of nosocomial infection from reuse of syringes and infusions. It is difficult, if not impossible, to trace an infection with a long latent period (i.e., hepatitis B, hepatitis C, HIV) to an anesthetic some weeks or months previously. Cost containment and convenience do not justify reuse of syringes.

Gary B. Skidmore MD FRCPC
Department of Anaesthesia,
Faculty of Medicine
University of Ottawa
501 Smyth
Ottawa, Ontario K1H 8L6

REFERENCES
1 *Trépanier CA, Lessard MR, Brochu JG, Denault PH.* Risk of cross-infection related to the multiple use of disposable syringes. Can J Anaesth 1990; 37: 156–9.
2 *Crosby ET.* Intravenous infusions and one-way valves (Letter). Can J Anaesth 1991; 38: 799–800
3 *Blogg CE, Ramsay MA, Jarvis JD.* Infection hazard from syringes. Br J Anaesth 1974; 46: 260–2.
4 Canada Communicable Disease Report, Vol. 20–16, August 30, 1994.

Postoperative pain in children

To the Editor:
We enjoyed the article by Wong *et al.* on the management of post-tonsillectomy pain in children.[1] Most paediatric anaesthetists find the usual analgesic regimens less than satisfactory for this common procedure. The results indicate that, in comparison with placebo or bupivacaine spray, infiltration of bupivacaine with epinephrine produced less pain (by pain score) on first awakening after anaesthesia, and that the effect lasted less than an hour. However, we are concerned that an opportunity to identify a greater response to their intervention may have been missed by their failure to use an adequate measure of pain following initial recovery.

The "Objective Pain Scale" of Norden *et al.*[2] assesses both behaviour and physiological changes (heart rate and blood pressure). It has been used in a number of studies of children's postoperative pain, but has never had peer-reviewed evaluation of its reliability or validity. It is, however, very similar to the Children's Hospital of Eastern Ontario Pain Scale (CHEOPS),[3] and at least one study found no differences between them.[4] The CHEOPS has been shown to be valid and reliable for immediate postoperative pain, but becomes less useful for pain lasting more than an hour or so, as "pain behaviours" habituate with time.[5] It would have been appropriate to use a self-report measure of pain for many of the children in this study (such as the Faces scale of Bieri *et al.*[6]), which might have shown a difference in pain scores beyond the immediate recovery phase and allowed the authors to glean more information from their research.

The greatest challenges in paediatric pain management result from difficulties in assessment and measurement, not from the complexities of pharmacology. It is critical that we understand the assumptions and implications of our measurement tools in this field, just as in any other scientific investigation.

G. Allen Finley MD FRCPC
Patrick J. McGrath PhD
Departments of Anaesthesia and Psychology
Dalhousie University
IWK Children's Hospital
Halifax, NS B3J 3G9

REFERENCES
1 *Wong AK, Bissonnette B, Braude BM, Macdonald RM, St-Louis PJ, Fear DW.* Post-tonsillectomy infiltration with bupivacaine reduces immediate postoperative pain in children. Can J Anaesth 1995; 42: 770–4.
2 *Norden J, Hannallah R, Getson P, O'Donnell R, Kelliher G, Walker N.* Reliability of an objective pain scale in children. Anesth Analg 1991; 72: S199.
3 *McGrath PJ, Johnson G, Goodman JT, Schillinger J, Dunn J, Chapman J.* The CHEOPS: A behavioral scale to measure post operative pain in children, *In:* Fields HL, Dubner R, Cervero F (Eds.). Advances in Pain Research and Therapy, New York: Raven Press, 1985: 395–402.
4 *Norden J, Hannallah R, Getson P, O'Donnell R, Kelliher G, Walker N.* Concurrent validation of an objective pain scale for infants and children. Anesthesiology 1991; 75: A934.
5 *Beyer J, McGrath PJ, Berde C.* Discordance between self

report and behavioral pain measures in 3–7 year old children following surgery. J Pain Symptom Management 1990; 5: 350–6.
6 *Bieri D, Reeve RA, Champion GD, Addicoat L, Ziegler JB.* The Faces Pain Scale for the self-assessment of the severity of pain experienced by children: development, initial validation, and preliminary investigation for ratio scale properties. Pain 1990; 41: 139–50.

REPLY

We thank the authors for their interest in our study and for the insightful observations they have provided. As they stated, most paediatric anaesthetists are faced with the inability to provide adequate immediate postoperative analgesia after tonsillectomy. The use of local anaesthetic either topically or after submucosal infiltration has been investigated as a means of controlling postoperative tonsillectomy pain in infants and small children.[1] It had been suggested previously in a Letter to the Editor that the use of topical bupivacaine 0.5% was effective in providing immediate postoperative pain relief.[2] Our prospective study was motivated by the necessity to prove the safety of the use of bupivacaine after tonsillectomy in children and also to assess its immediate efficacy. It is reported that the administration of bupivacaine with epinephrine or phenylephrine is more likely to produce cardiorespiratory depression.[3] We use the OPS score[4] to assess immediate pain relief with the understanding that the test was not validated by peer-reviewed process but that it had been used extensively for that purpose in past studies. Furthermore, as stated by Drs. Finley and McGrath, the OPS score has been shown to be valid when compared to the CHEOPS scale in immediate pain evaluation.[5] We agree that the need to determine appropriately the effect of bupivacaine on the duration of pain relief after tonsillecomy would necessitate the use of other pain evaluation scoring system. The question of whether the differences amongst the groups carry beyond the immediate postoperative period is important and relevant in assessing the clinical usefulness of peritonsillar infiltration.

A.K. Wong MD FRCPC
B. Bissonnette MD FRCPC
B.A. Braude MB FRCPC FRA(SA)
R.M. MacDonald MD FRCSC
P.J. St-Louis PhD
D.W. Fear MD FRCPC
Toronto, Ontario

REFERENCES
1 *Bissonnette B.* Lidocaine en aérosol aprés l'amygdalectomie chez l'enfant. Can J Anaesth 1990; 37: 534–7.
2 *Brown TC.* Lidocaine en aérosol apres l'amygdalectomie chez l'enfant (Letter). Can J Anaesth 1991; 38: 417–8.
3 *Kambam JR, Kinney WW, Matsuda F, Wright W, Holaday DA.* Epinephrine and phenylephrine increase cardiorespiratory toxicity of intravenously administered bupivacaine in rats. Anesth Analg 1990; 70: 543–5.
4 *Norden J, Hannallah R, Getson P, O'Donnell R, Kelliher G, Walker N.* Reliability of an objective pain scale in children. Anesth Analg 1991; 72: S199.
5 *Norden J, Hannallah R, Getson P, O'Donnell R, Kelliher G, Walker N.* Concurrent validation of an objective pain scale for infants and children. Anesthesiology 1991;75: A934.

Brevibloc drug errors

To the Editor:
In a routine administration of Brevibloc prior to induction and intubation of a healthy 52-year-old male, for laparoscopic surgery, who required the drug for labile hypertension; I reached for the Brevibloc out of my drug cabinet and administered 8 ml of the 10 ml drawn into the syringe, as usual. To my alarm this caused a brady-asystolic arrest requiring full resuscitation measures. The patient developed severe cardiogenic shock and was further treated with vasopressors and monitored in the ICU with invasive monitoring for 24 hrs. There was no damage to the patient other than missing his surgery.

In retrospect, I discovered that the discarded Brevibloc vial contained the 250 $mg \cdot ml^{-1}$ concentration rather than the 10 $mg \cdot ml^{-1}$ concentration used in the bolus containers. The containers are so similar, that this mistake is likely to recur unless special precautions are initiated at various levels of its handling.

D.J. Pearce MD
Goderich, Ontario

REPLY

BREVIBLOCK® (esmolol) packaging does conform to all regulatory and association requirements for injectable medications. However, to help prevent further similar instances as that described by Dr. Pearce, we have decided to take further action. A letter mailing was sent in November 1995 to all Anaesthetists and Hospital Pharmacists in Canada highlighting that the ampoule is a concentrated form of Brevibloc. Included in the mailing was a supply of stickers that could be affixed to the concentrated ampoule (250 $mg \cdot ml^{-1}$), already available in the Hospital, alerting the end user that this format must be diluted before use. Additionally, all Brevibloc ampoules being sold by Zeneca Pharma, as of the 1st December, 1995, have been stickered with a bilingual red label which reads "Attention: Dilute Before Use." We are also discussing whether further packaging changes could be of benefit with an advisory board of Anaesthetists and Pharmacists.

Ali Raza MD
Medical Director
Clinical & Medical Affairs
ZENECA Pharma Inc.

Pneumothorax complicating hypertrophic cardiomyopathy

To the Editor:
Hypertrophic Cardiomyopathy (HCM) is characterized by hypertrophied and nondilated left ventricle. An 80 yr-old man with HCM was scheduled for right hemicolectomy for adenocarcinoma of the colon. His interventricular septum and posterior wall thickness were 1.8 and 1.3 cm, respectively, with a septal:wall ratio of 1.38. A pulmonary artery catheter was placed through the left subclavian vein 12 hr before the surgical procedure and its position was confirmed by chest *x*-ray. He received general anaesthesia for an uneventful surgical