

CORRESPONDENCE

3. Robinson JO, Rosen M, Evans JM, Revill SI, David H, Rees GAD: Self-administered intravenous and intramuscular pethidine: A controlled trial in labour. *Anaesthesia* 1980; 35:763-70

4. Chestnut DH: Epidural analgesia and the incidence of cesarean section. *ANESTHESIOLOGY* 1997; 87:472-6

4. Weiner PC, Hogg MIJ, Rosen M: Effects of intravenous naloxone on pethidine induced depression on neonates. *BMJ* 1977; 2:228-9

5. Evans JM, Hogg MIJ, Rosen M: Reversal of narcotic depression in the neonate by naloxone. *BMJ* 1976; 2:1098-100

6. Weiner PC, Hogg MIJ, Rosen M: Effects of intramuscular nalox-

one on pethidine induced depression of neonates. *BMJ* 1977; 2:229-31

7. Weiner PC, Hogg MIJ, Rosen M: Neonatal respiration, feeding and neurobehavioural state: Effects of intrapartum bupivacaine, pethidine and pethidine reversed by naloxone. *Anaesthesia* 1979; 34:996-1004

8. Eisenach JC: Regional anesthesia: Vintage Bordeaux (and Napa Valley). *ANESTHESIOLOGY* 1997; 87:467-9

(Accepted for publication February 9, 1998.)

Anesthesiology

1998; 88:1690

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In Reply:—It is interesting to know that Dr. Michael Rosen's experience in terms of satisfaction with patient-controlled intravenous analgesia (PCIA) using meperidine during labor in a population of mixed social and economic status was similar to our experience. In our obstetric unit, although we allow nurses to initiate and maintain PCIA, an anesthesiologist is always available on an immediate basis.

Dr. Deborah Wilson's concerns regarding the safety with PCIA and its effectiveness have been well discussed in our manuscript and in the accompanying editorial by Dr. David Chestnut published in the September 1997 issue of *ANESTHESIOLOGY*. Our manuscript has clearly suggested that epidural analgesia provides better analgesia than PCIA during labor and that epidural analgesia should be preferred to PCIA. However, in view of the complete satisfaction expressed by 65-70% of women in the PCIA group and minimal crossover, it was reasonable to state that PCIA is also an effective method of pain relief during labor. Professor Rosen has supported this view in his letter to the editor. Regarding neonatal outcome, we have also clearly indicated in our manuscript that our primary purpose in the study was to evaluate the rate of cesarean section. However, in our manuscript there was no difference between the two groups with regards to immediate neonatal outcome in terms of objective criteria such as Apgar scores and cord pH, PCO₂, and PO₂, except for an increased

requirement for naloxone in the PCIA group. Further, we had enough power to draw this conclusion (to determine a two-tailed significant difference of 0.05 between a mean [\pm SD] umbilical arterial pH of 7.30 ± 0.06 and 7.25 ± 0.06 in the two groups for 80% power, only 24 acid base measurements per group are required). We did not compare neonatal neurobehavioral changes, so interpreting it either way would be incorrect. The clinical significance of subtle differences in neurobehavior is unclear. Overall our manuscript and the accompanying editorial clearly suggest that PCIA using meperidine is a reasonable option in some circumstances.

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(Accepted for publication February 9, 1998.)

Anesthesiology

1998; 88:1690-1

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Lippincott-Raven Publishers

Preinsertion Pulmonary Artery Catheter Flushing

To the Editor:—Since the introduction of central venous and pulmonary artery catheters into clinical practice, foreign body embolization from either guidewires¹ or catheter shearing² has been reported. We present this occurrence as the first reported case of potential foreign body embolization, unrelated to wires or catheter shearing, during pulmonary artery catheter insertion.

A 63-yr-old man was scheduled for sternal débridement, rewiring, and

flap closure. The patient had sustained a recent myocardial infarction and a ventricular fibrillation arrest before surgery. He was now 10 days status after coronary artery bypass grafting (CABG), which was complicated by postoperative congestive heart failure (CHF). Current medications included lasix, digoxin, vasotec, potassium chloride, and aspirin.

Given the patient's significant cardiac history and also the magnitude of the surgery, pulmonary artery catheter insertion was planned. After

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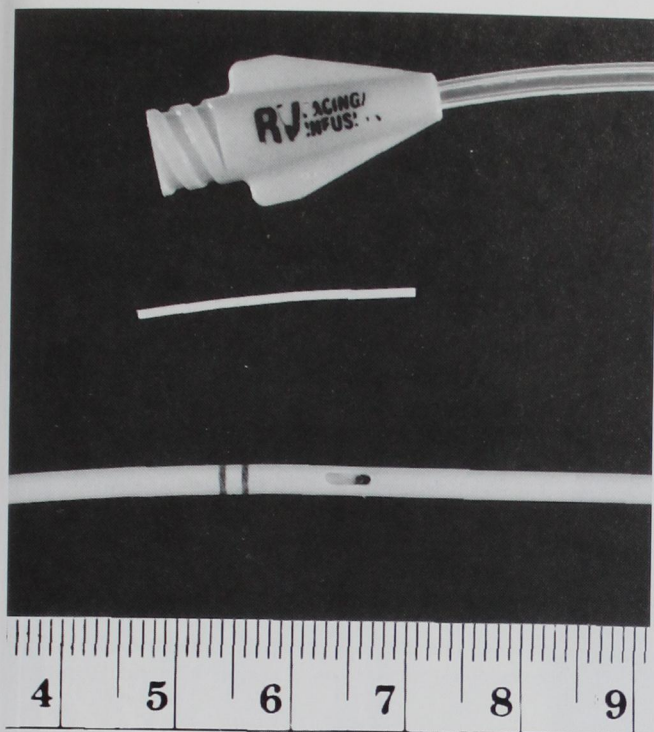


Fig. 1. Paceport® pulmonary artery catheter with 2.6 cm × 1 mm cylindrical core extruded from the right ventricular lumen (Lot No. 3S12A 7522, Model No. 93A-931H-7.5F).

securing adequate intravenous and intraarterial access, the right internal jugular vein was cannulated uneventfully. While routinely flushing the catheter ports before insertion into the patient, a yellow core was noted to be protruding from the distal right ventricular lumen of a Paceport® pulmonary artery catheter (Baxter, Irvine, CA). This core did not come out with flushing using the flush valve of the transducer setup; rather it took a manual "power flush" from a syringe to fully dislodge the core from the distal right ventricular lumen (fig. 1). The core was a solid cylindrical object that was 2.6 cm in length, 1 mm in diameter, with smooth flat ends. The core appeared to be made of the same yellow plastic used to make the catheter itself. This core was most likely a

remnant from the manufacturing process. Another catheter was obtained, flushed, and inserted without incident. The rest of the anesthetic and surgery were uneventful.

We were fortunate that the lumen core was extruded during the flushing of the catheter ports before insertion into the patient. Had this not occurred until the catheter was inserted into the patient, it could have resulted in any one of several complications. Closer examination of the catheter revealed no additional problems. The manufacturer has no reports of a similar nature involving the same model and lot number. Moreover, the manufacturer has implemented several process improvements to prevent the type of occurrence reported herein. The Product Insert Data Sheet, included with each catheter, strongly recommends preinsertion testing of the catheter.

It is imperative that we pay close attention to the pulmonary artery catheter itself when flushing the ports because they may contain more than just heparinized saline solution.

The authors thank Drs. Roberta L. Hines and Paul G. Barash for their editorial review.

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References

1. Polos PG, Sahn SA: Complication of central venous catheter insertion: Fragmentation of a guidewire with pulmonary artery embolism. *Crit Care Med* 1991; 19:438-40
2. Smyth NPD, Rogers JB: Transvenous removal of catheter emboli from the heart and great veins by endoscopic forceps. *Ann Thorac Surg* 1971; 11:403

(Accepted for publication February 22, 1998.)

Anesthesiology
1998; 88:1691

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Lippincott-Raven Publishers

In Reply:—Baxter appreciates the opportunity to provide additional comment regarding the above referenced manuscript. As a responsible medical device company, Baxter is interested in learning of experiences with its products. The occurrence reported in the manuscript is an isolated one. Baxter has no reports of a similar nature involving the same model and lot number of the device. In the interest of patient safety, Baxter implemented several process improvements to prevent the type of occurrence reported. Of impor-

tance, Baxter's product insert data sheet, which is included with each catheter, recommends preinsertion testing of the catheter.

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(Accepted for publication February 22, 1998.)