Piritramide 2.25 mg·kg^{-1}·h^{-1} plus pancuronium 0.4 mg·kg^{-1}·h^{-1}, intravenous. Ventilation: fractional inspired oxygen concentration 0.4 in nitrous oxide and end-tidal carbon dioxide concentration 4.6 ± 0.3%. Core temperature: 39.7 ± 1.4° C (normothermia). Volume status: pulmonary capillary wedge pressure 6.5 ± 2.7 mmHg and CVP 6.8 ± 2.6 mmHg.

Mean partial saturation of hemoglobin with oxygen in arterial blood (Sp_{O_2})[4] as assessed by means of standard two-wavelength pulse oximetry, was 97.7 ± 1.3% with a median of 98 and a range of 93–99%. (These data do not allow extrapolation to "true" saturation (Sp_{O_2}), as measured *in vitro* with oximeters using four to seven wavelengths, unless the presence of methemoglobin and CO-hemoglobin in pigs is taken into account.) We conclude that the use of pigs for experimental research will not be hampered by the lack of a suitable site for pulse oximetry!

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Epidural Abscess Associated with Epidural Catheterization

To the Editor:—Since the incidence of epidural abscess is so rare, much of the "conventional wisdom" surrounding this complication is derived from anecdotal case reports rather than carefully controlled studies. This makes it extremely difficult to draw meaningful conclusions about the prevention, diagnosis, and treatment of this dreaded complication.

The recent paper by Strong raises several interesting questions.[1] Strong reports a 3% incidence of epidural abscess after epidural catheterization for pain therapy. In view of his small sample size (approximately 60 catheter placements), this high complication rate may simply reflect extraordinarily bad luck rather than an accurate statistical analysis of occurrence.

Strong uses the interesting technique of placing an epidural catheter and injecting it intermittently until the patient is pain-free.[1] The catheter is then removed and is replaced when the patient notes recurrence of pain. Would single-shot epidural injections have a more favorable risk-to-benefit ratio given the inability to predict the amount of time a catheter is needed to achieve initial as well as long-term pain relief?

Strong notes that the catheters were injected by several different residents.[1] It seems logical that the more individuals that are involved in the use of an epidural catheter, the more likely that a break in sterile technique can occur. The delivery of epidural local anesthetic *via* continuous infusion pump would decrease this problem while decreasing the number of times the catheter is manipulated.

Strong reports the use of prophylactic antibiotics according to "our routine for epidural catheters that remain in place for more than 24 h."[1] It is unclear when the antibiotics are given relative to catheter placement. Although it seems logical that antibiotics should decrease the incidence of epidural-catheter–related infection, I know of no controlled study that demonstrates the efficacy of this practice. Conceivably, antibiotics used in this manner can increase the infection risk by destroying nonpathogenic bacteria and by allowing drug resistant pathogens to flourish.

In view of the fact that two epidural-catheter–related infections occurred in a relatively brief period of time, it may be worthwhile to identify any epidemiologic factors common to both patients. Did any of the nurses, physicians, corpsmen, or other staff have *Staphylococcus* infections at the time that both patients were under their care? Were cultures taken from these caregivers to see if any were carrying the same pathogenic strain of *Staphylococcus* identified in the first patient (cultures were negative in the second)? Was any common equipment used for both patients?

Finally, Strong mentions the fact that tunneling epidural catheters provides additional protection against infection.[2] In view of the simplicity and added safety that tunneling affords, this technique should be used whenever there is the potential for an epidural catheter to be left in place for more than 24 h or when the patient appears to be at higher risk for developing infection.[3]

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