catheter ascertained postoperatively? Finally, what were the visual analog scale pain scores before these events occurred (between 2 PM and 4:30 PM)?

These questions are important because cancer patients who have used oral or parenteral opioids preoperatively have peridural opioid requirements significantly greater than patients not receiving opioids. Reviewing our experience in our Acute Pain Service with 1,000 patients who underwent surgery for cancer over a 2.5-yr period,* we found that patients who have been taking opioids preoperatively for pain control are a special group of patients who require two to three times the normal doses of epidural morphine when administered *via* a continuous infusion. Furthermore, psychologically they also behave differently, and we have assigned one specific anesthesiologist to deal with these special cases. In addition, young patients with metastatic sarcomas generally undergo several major surgical procedures and have experienced significant pain during the course of their disease. Thus, they learn to prevent the onset of severe pain instead of treating severe pain at its peak intensity. The patient described by Kreitzman and Samuels received 0.2-mg·h^{-1} dosage of hydromorphone, or 1.2 mg every 6 h, which is a normal dose for the average surgical patient when intermittent bolus injections are used.† It seems from his actions that his analgesic requirements were much greater than the prescribed dose.

It is also possible that this patient had a nonfunctioning or malpositioned epidural catheter and that the persistence of pain motivated his manipulation of the infusion pump in order to provide an adequate dose of opioids. If this catheter was in the epidural space, he received 3.55 mg hydromorphone in 2.5 h, which is about three times the normal dose. Yet the patient did not develop any signs or symptoms of epidural opioid overdose. As stated by the authors, hydromorphone is less lipid-soluble but more potent than morphine. We would have expected such a dose to be associated with more sedation and respiratory depression unless the patient had already been taking large doses of opioids preoperatively or the epidural catheter was outside of the epidural space.

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* Manuscript in preparation.

† Wakerlin G, Shulman M, Yamaguchi LY, Brodsky JB, Mark JBD: Experience with lumbar epidural hydromorphone for pain relief after thoracotomy. (Abstract) Anesth Analg 65:S163, 1986

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In Reply:—As suggested, possible causes of increased analgesic dosage requirement include tolerance caused by preoperative opioid use and nonfunctional or misplaced catheters. Tolerance to opioid would seem unlikely here because, as stated in the case report, the patient was not receiving any medications preoperatively.[1] We also believed that our lumbar epidural catheter was functioning because the patient was subjectively and objectively (visual analog scores < 3) comfortable prior the first overdosing incident (and the next morning). Thus, since the patient had been pain-free, we doubt that his actions were related to higher analgesic requirements or persistent pain.

We believe that this was a case of curious but uneducated fingers playing with potentially dangerously unsecured pump controls. The question, which, however, is still unresolved at this time, is why this patient had no serious side effects given the pharmacologic characteristics of hydromorphone and the large dose he received.

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A Method to Prevent Tampering with an Infusion Pump

To the Editor:—In a recent case reported by Kreitzman and Samuels,[1] concern was raised about patient tampering with an epidural infusion pump. They mentioned that a simple, effective and inexpensive device, such as a locking cover for the infusion pump, would be desirable. At our hospital, we have been using an IMED infusion pump fitted with such a device (fig. 1). The cover is clear plastic and hinged at the top