

goal in every case. Despite best intentions on the part of designers, equipment interactions can be unpredictable. Users must exercise caution when combining equipment from different manufacturers.

This case serves as a reminder of the benefits of equipment standardization among hospital departments. Although ideal, equipment standardization may not be practical in individual institutions. A convenient alternative for a hospital is to standardize on sensors. Towards this end, Nellcor licenses its patented sensor calibration technology or supplies its pulse oximetry modules to selected companies meeting our quality and safety standards. Nellcor sensors may be used with pulse oximeters from Hewlett-Packard, Medical Data Electronics, Mennen, Ivy, Drager, and Siemens that have been *specifically designed* to meet Nellcor sensor standards. Nellcor sensors should be used *only* with Nellcor monitors or oximetry modules, or with instruments licensed to use Nellcor sensors—a warning that is clearly stated in all Nellcor operator's manuals and sensor package inserts. As companies design

new equipment meeting our sensor standards, those instruments can be added to the list of compatible equipment.

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### Regional Anesthesia and Aspirin

*To the Editor:*—The case report by Camann *et al.*<sup>1</sup> describing the use of epidural anesthesia for cesarean delivery in a patient with a transplanted heart highlights what some might consider a therapeutic dilemma—that is, the use of epidural anesthesia in patients taking low-dose aspirin. The question that needs to be answered is: Does the benefit of epidural anesthesia outweigh the perhaps theoretical risk of epidural hematoma should a vessel be punctured? Low-dose aspirin (60–80 mg/day) is now commonly used in many patients who are likely to benefit from epidural anesthesia—for example, women with pregnancy-induced hypertension (PIH) and patients requiring vascular surgery. Epidural hematomas are rare, but many of those described have occurred in association with anticoagulant or antiplatelet therapy.<sup>2,3</sup> Conversely, Rao and El-Etr reported no problems with patients given intraoperative heparin after the performance of the spinal or epidural block.<sup>4</sup> Low-dose aspirin inhibits platelet aggregation, and since effective therapy should prolong the bleeding time, this simple test should be carried out in all patients in whom epidural or spinal anesthesia is to be performed. If the bleeding time is significantly prolonged (> 12 min or > 15 min?) or if there are other factors that might predispose to bleeding, such as in PIH, with a decreasing platelet count or prior administration of heparin, then the block should not be performed without a careful risk–benefit analysis.

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*In Reply:*—The letter by O'Sullivan raises, once again, the controversial issue of regional anesthesia in patients receiving aspirin therapy. Although aspirin is a known inhibitor of platelet aggregation and is known to be associated with a prolonged bleeding time, regional anesthesia is commonly performed in these patients. For example, large numbers of orthopedic patients, in whom aspirin and other nonsteroidal antiinflammatory agents are commonly used, routinely undergo lower extremity joint arthroplasty with spinal or epidural anesthesia. No case reports have yet appeared describing epidural hematomas in this patient

population. The report by Mayumi, to which O'Sullivan refers, concerns a patient who was receiving ticlopidine, a new antiplatelet drug, and not aspirin.<sup>1</sup> Furthermore: 1) the coagulation profile (including platelet count and bleeding time) was normal in that patient; 2) the patient had a preexisting compression fracture of the tenth thoracic vertebrae; and 3) multiple attempts were required during the spinal anesthetic.

The report by Rao and El-Etr, as well as others concerning regional anesthesia for vascular surgery, all seem to confirm the safety of this type of anesthesia when heparin is administered *after* the anesthetic is