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## Epidural Anesthesia in Patients with Coronary Artery Disease

*To the Editor:*—Epidural anesthesia and combination epidural-general anesthesia are becoming increasingly popular techniques. Potential advantages include decreased blood loss and decreased incidence of deep venous thrombosis for some procedures,<sup>1-5</sup> decreased general anesthetic requirements, pain-free emergence from general anesthesia, and use of epidural opioids postoperatively. In critically ill patients, there is evidence that epidural-general anesthesia with postoperative epidural analgesia may decrease duration of intubation, hospital and physician costs, and postoperative morbidity.<sup>6</sup> Therefore, the recent study by Saada *et al.*<sup>7</sup> examining the effects of epidural blockade on cardiac function in patients with and without coronary artery disease (CAD) was both informative and timely.

The investigators<sup>7</sup> showed that administering relatively large fixed doses of local anesthetic in order to achieve rapid onset of epidural blockade may be detrimental to patients with CAD. Clinicians who routinely administer a bolus dose of local anesthetic based on a prescribed number of ml per segment of analgesia desired now have evidence to reconsider this practice in patients with CAD. Perhaps a more gradual extension of sympathetic blockade by titration of local anesthetic would allow time for intravascular volume infusion and activation of reflex mechanisms to compensate for vasodilatation in resistance and capacitance vessels.

Indeed, Baron *et al.*<sup>8</sup> have shown that volume loading patients with CAD is effective in restoring blood pressure to control values while left ventricular ejection fraction and segmental wall motion are maintained at preblockade levels. In fact, there was a trend (not statistically significant) toward fewer hypokinetic sectors in Baron's patients after epidural blockade and volume loading compared with the control state (11 hypokinetic sectors *versus* 19).

Therefore, when precautions are taken to minimize hemodynamic alterations, patients with CAD may be able to benefit from epidural anesthesia without aggravating the potential for myocardial ischemia. Clearly, further studies are necessary to fully address this topic.

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## Capnography or Capnometry?

*To the Editor:*—With today's frequent monitoring of oxygen saturation and end-tidal CO<sub>2</sub> in clinical anesthesia practice, both monitoring modalities are quite often mentioned or discussed in the literature. The process of measuring blood oxygen saturation is rightfully called pulse oximetry, because determination of S<sub>PO<sub>2</sub></sub> is the main purpose of using a pulse oximeter in the operating room or in other clinical settings, despite the added capability available in many oximeters of producing a plethysmographic display that has been found useful in a

number of clinical situations.<sup>1</sup> The measurement of end-tidal CO<sub>2</sub>, on the other hand, is variably referred to as capnometry or capnography, with the latter term seemingly having become the one used most often in current literature. Is the term capnography, however, really an apt description of the process of end-tidal CO<sub>2</sub> monitoring in the operating room? In measuring P<sub>ETCO<sub>2</sub></sub>, instruments in clinical use determine the value of a spot sample derived by various methods from phase III of the expired CO<sub>2</sub> level. It reflects the alveolar CO<sub>2</sub> level and usually is