

## CLINICAL CONCEPTS AND COMMENTARY

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The following correspondence refers to a previously published Clinical Concepts and Commentary article by Mangano (Mangano DT: Assessment of the patient with cardiac disease: An anesthesiologist's paradigm. *ANESTHESIOLOGY* 1999; 91:1521-6).

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## Preoperative Cardiac Assessment Has to Take into Account the Type of Surgery

*To the Editor:*—We read with interest the Clinical Concepts and Commentary article by Dr. Mangano entitled "Assessment of the Patient with Cardiac Disease."<sup>1</sup> It is a complete review of the subject by one of the preeminent authorities, and it discusses everything from preoperative workup to specialized testing. Dr. Mangano's view of the anesthesiologist as the primary medical caregiver fits with the new role of anesthesiologists as perioperative physicians. At our preadmission test center, the anesthesiologist examines the patient. Based on physical examination, history of cardiac disease, risk factors for cardiac disease, and functional status, the anesthesiologist makes a decision about whether the patient needs further workup by the primary care physician or a specialist. However, what Dr. Mangano fails to mention is the role that the type of surgery plays in this workup. The American College of Cardiology/American Heart Association guidelines for perioperative cardiovascular evaluation for noncardiac surgery state that other factors, including type of surgery, can help determine cardiac risks.<sup>2</sup> For example, major surgery, such as repair of an abdominal aortic aneurysm, is associated with more hemodynamic change than minor surgery, such as cataract surgery. A recent *New England Journal of Medicine* article showed that routine medical testing before cataract surgery did not cause a decrease in mortality or morbidity, even when stratified according to coexisting disease, regardless of severity.<sup>3</sup> In an accompanying article, Roizen equates modern anesthesia for low-risk procedures in otherwise well-managed patients with getting a haircut.<sup>4</sup>

In summary, we believe that not only history, physical examination,

and functional capacity but also type of surgery should guide the anesthesiologist in ordering preoperative tests and consults.

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## Assessment of the Patient with Cardiac Disease

*To the Editor:*—We read with interest Dr. Mangano's paradigm for preoperative assessment of patients with cardiac disease.<sup>1</sup> We have several concerns. First, the paradigm does not differentiate major surgery from minor surgery. Obviously, preoperative evaluation and perioperative treatment are different for patients undergoing cataract surgery, cholecystectomy, or abdominal aortic aneurysm resection. Second, the only management technique that has been proven to reduce perioperative morbidity is  $\beta$  blockade,<sup>2,3</sup> and this should be included in the paradigm for patients with coronary artery disease or suspected coronary artery disease who are scheduled for intermediate or major surgery (unless contraindicated). Third, there is no substantial evidence that 24-48 h postoperative hemodynamic and ischemic monitoring will benefit patients with mild to moderately positive stress test results. Intensive care unit monitoring is costly and should be reserved for patients undergoing major surgery. Fourth, most patients with coronary artery disease and impaired functional status should not bypass stress testing and automatically undergo coronary angiography. A patient may have impaired functional status as a result of previous myocardial infarction, yet have a minimal amount of residual myocardium at risk. Also, impaired functional status may result from many nonischemic causes, including obesity and emphysema. A specialized stress test, such as an adenosine thallium scan or dobutamine echocardiography, assesses functional myocardium at risk in this subset, compared with angiography, which delineates only anatomic information.

Unfortunately, a randomized study that proves whether preoperative testing improves patient outcome has yet to be performed. It is unknown whether the risk-stratification costs (delays in surgery; money for testing; complications from angiography, angioplasty, and coronary artery bypass surgery) are offset by improved patient care.

Because patient history, physical examination, and electrocardiography adequately assess which patients will benefit from  $\beta$  blockade,<sup>2</sup> there is unproven benefit to specialized testing until we demonstrate that other management techniques improve perioperative outcome.

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*In Reply:*—I would first like to extend my appreciation to all of the individuals who have expressed interest in this area of medicine.<sup>1</sup> Your insights and suggestions have been most appropriate.

In the first of the letters here, Drs. Hepner and Bader suggest anesthesiologists should assume a greater role as primary caregivers—specifically, as perioperative physicians. I could not agree more with my colleagues in this regard. Anesthesiologists truly are uniquely qual-

ified to care for high-risk patients undergoing surgery because only with such specific training and experience can the clinician appropriately integrate diverse recommendations provided by multiple specialists, enabling synthesis of a comprehensive perioperative care plan. To suggest a preoperative assessment paradigm, for example, without a comprehensive understanding of the perioperative stress response—be it precipitated by sympathetic, inflammatory, thrombotic,