

Anesthesiology  
1999; 90:1232  
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## Are Guidelines Needed for the Performance of Invasive Interventional Procedures for Minimally Invasive Cardiac Surgery?

*To the Editor:*—One result of the recent increase in popularity of minimally invasive cardiac surgery is that anesthesiologists are increasingly being called on to directly assist in the surgical management of the patient by performing invasive interventional procedures such as placement of a coronary sinus (CS) catheter or pulmonary artery vent. In the August issue of ANESTHESIOLOGY, Abramson and Giannotti report a case of unrecognized, iatrogenic perforation of the right ventricle while attempting to cannulate the CS during preparation for minimally invasive cardiac surgery.<sup>1</sup> Although the technical difficulty and morbidity associated with CS catheter placement are low when performed by experienced personnel,<sup>2,3</sup> patient care may be compromised when a single anesthetic provider is asked to perform interventional procedures while simultaneously being responsible for patient monitoring and the delivery of a safe anesthetic.

In our institution, the attending anesthesiologist identifies and maintains visualization of the CS with transesophageal echocardiography (TEE) while the cardiac anesthesia fellow manipulates the CS catheter. Simultaneously, a dedicated anesthesia resident is responsible for patient monitoring and anesthetic delivery. Although this may work well in an academic institution, we realize that this level of staffing is not practically feasible or profitable in most circumstances. We contend, however, that patient care may be compromised when a single anesthetic provider is called on to simultaneously perform TEE, cannulate the CS, and deliver anesthesia. Thus, the presence of a second dedicated anesthesia provider during the performance of such invasive interventional procedures may be necessary to ensure quality patient care. We wonder if the American Society of Anesthesiologists and the Society of Cardiovas-

cular Anesthesiologists should consider this issue and formulate practice guidelines regarding patient care during the performance of interventional invasive procedures such as cannulation of the CS for minimally invasive cardiac surgery.

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(Accepted for publication December 7, 1998.)

Anesthesiology  
1999; 90:1232-3  
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## Coronary Sinus Catheterization for Minimally Invasive Cardiac Surgery

*To the Editor:*—For minimally invasive cardiac surgery, the Endocoronary Sinus™ catheter (Heartport, Redwood City, CA) is placed *via* a percutaneous venous introducer and permits delivery of cardioplegic solution into the coronary sinus after the tip of the catheter is positioned in the coronary sinus.<sup>1</sup> Abramson and Giannotti described right ventricular perforation associated with attempted placement of this catheter.<sup>2</sup> We agree that rapid diagnosis and treatment is important in

this situation; furthermore, we wish to remind clinicians of proper techniques for introduction that should minimize the incidence of the reported complication. The coronary sinus drains into the right atrium; thus, advancement of the catheter into the right ventricle is generally not necessary. Monitoring of distal tip pressure provides a direct indication should the catheter tip be advanced from the right atrium across the tricuspid valve. In this circumstance, prompt withdrawal of