



The Society for Cardiac Angiography & Interventions

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The Black Box: What Goes on Inside the Cardiac Catheterization Laboratory?

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THE BLACK BOX

Patients enter the cath lab, and then as though it were a black box, emerge with a band aide on the femoral puncture site and a report in the chart.

Many of our colleagues, even our colleagues in non-invasive cardiology, are mystified by what happens inside the catheterization laboratory. We spend all of our time in the box, and attend meetings learning ever more about the smallest details of interventional technique and technology. We are consumed by our attention to the details of imaging, peri-procedure medications and management, and the performance of percutaneous coronary intervention (PCI). One of the evaluation comments from an attendee at the last SCAI/ACC Interventional Board Review Course was, "This (course) should be promoted to the non-invasive cardiologists so they get an idea that we don't just blow up balloons." Despite all of this immersion in our field, we have many points of uncertainty about our decision-making. Imagine how physicians who do not work in the cath lab feel!

What is the view from outside the lab? In the past diagnostic catheterization was very simple to understand. The basic concepts of one-, two-, and three-vessel disease translated easily into medical or surgical manage-

ment. Even in the early PTCA era plain balloon angioplasty was intelligible to our colleagues because of its apparent simplicity.

Our co-workers all seem to understand coronary artery bypass graft surgery (CABG) at some level. All of them did rotations in the operating room during medical school, and can relate to surgery as a simple mechanical process. The details of cardioplegia, on and off pump bypass, and advances of the strategy for constructing anastomoses are of little concern to them, since the basics of plumbing in the operating room seem apparent.

On the other hand, the use of new devices, and an ever-changing array of names for stents, drugs, and techniques has made the cath lab less and less intelligible as time passes. Decision-making regarding the types of intervention for specific anatomy has become arcane and difficult for our colleagues to fully understand, in large part because we have kept the decisions inside the box.

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There are too many devices, too many approaches, and too many drugs.

We have compounded this difficulty by calling some of our procedures simple. A “simple” stent procedure for a type A lesion belies the real skill and experience necessary to make it appear simple. The mechanical part of the procedure may seem to us to be straightforward, having repeated it many, many times in our practices. The mechanical component for these procedures probably only represents 20% of the work, while decision making and cognitive elements of the procedure are easily 80%. The cognitive and decision-making aspects of our field are certainly not simple, particularly given the accelerating growth in treatment options available to us.

We need to do more to educate our colleagues regarding what happens inside the cardiac cath lab. The advent of image printers that can be connected to digital imaging systems is a great boost. Sending the referring team and the primary physician pre- and post- intervention printed still frames from a diagnostic cath is helpful in illuminating both the anatomical problems we are dealing with, as well as their very eloquent and pictorially dramatic solutions. Another way to educate our colleagues: as an SCAI member, you have access to our educational slide library (www.scai.org) of core didactic material. Consult it when you find yourself asked to give talks to your non-interventional colleagues.

The more a referring physician is familiar with the contents of the “black box” the more likely they are to

use our therapies effectively. Inviting our colleagues to visit the lab and watch procedures is a way to demystify PCI and help develop better understanding of cath procedures.

We also need to do more to educate our patients. Many of them do not invest as much energy in finding a good interventional physician as they might a good auto mechanic. An appreciation for the skill, art, and science of our field needs to be imparted to them. I know of one interventional practitioner who has families watch catheterization and interventional procedures. He finds families appreciate the skill and complexity of the procedures they observe. While I am not sure I want families watching me from the control room, having them watch recorded cases as part of the pre-procedure teaching process might be useful.

I hope patients and referring physicians will appreciate the complexity and demands of our field, and will demand the best from us as practitioners. Membership in SCAI represents one important quality that distinguishes an invasive/interventional physician. We need to educate our patients so that they come to expect SCAI membership as a sign of excellence in interventional therapy and we encourage you to let your patients and colleagues know that you are a member or Fellow of SCAI. One way to let your patients know you belong to SCAI is to proudly wear the Society’s lapel pin, as many of us do every workday. To get one (free) send an e-mail to info@scai.org.