



## The Society for Cardiac Angiography & Interventions

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### SCAI President's Page



### The Complication

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Virginia's frantic voice pierced my leisurely coffee time instantly as she said: "you have to come to the lab right now!" I had just arrived for the day, but my colleagues had been working through the early morning with an acute inferior infarction patient. Clot, no-reflow, arrhythmias; you know the drill. Now stented and stabilized with an IABP, he was being moved to his bed. A complaint of severe right flank pain and the ensuing rapid development of hypotension was an unwelcome development. As I arrived, we got him back on the table and began yet another drill. Fortunately, I was primed. I had just spent the past three days cooped up in a hotel chairing the ACCF/SCAI Board review course in Interventional Cardiology. Not more than 18 hours earlier I had heard Christopher White, MD, FSCAI (CCI editor-in-chief), discuss vascular complications of catheterization. Not more than 18 hours earlier he had shown a case of recalcitrant bleeding from a common femoral side branch, and the tricks he used to stop the hemorrhage. Not more than 48 hours earlier I had heard Fredrick Feit, MD and James Tchong, MD, FSCAI, describe the process of reversing anticoagulation in a patient with full doses of heparin, Abciximab and clopidogrel on board. My colleague Kathleen Quealy, MD, an experience Flight Surgeon on our trauma helicopter as well as an

accomplished invasive cardiologist, handled the volume resuscitation while I accessed the left groin (the 8F IABP occupied the original right puncture). "Had the stick been clean?" I asked of the fellow. Despite an initial affirmative reply, we subsequently learned that while the initial flashback was brisk, the first sheath had crumpled upon attempted insertion requiring a new sheath to be used. Clue number one. "Did you fluoro the groin first?" was my next question. Again, affirmative. We had taught the fellows repeatedly to image the femoral head to assist in locating the puncture (another point well made by Dr. White in his lecture). But, by my look at the fluoro, the IABP sheath entry seemed a bit high. Clue number two. "Any problems passing the wire?", my third question. None remembered.

After a quick trip with a diagnostic IMA catheter up and over the aortic bifurcation, our first injection confirmed the active bleeding near the IABP insertion site.

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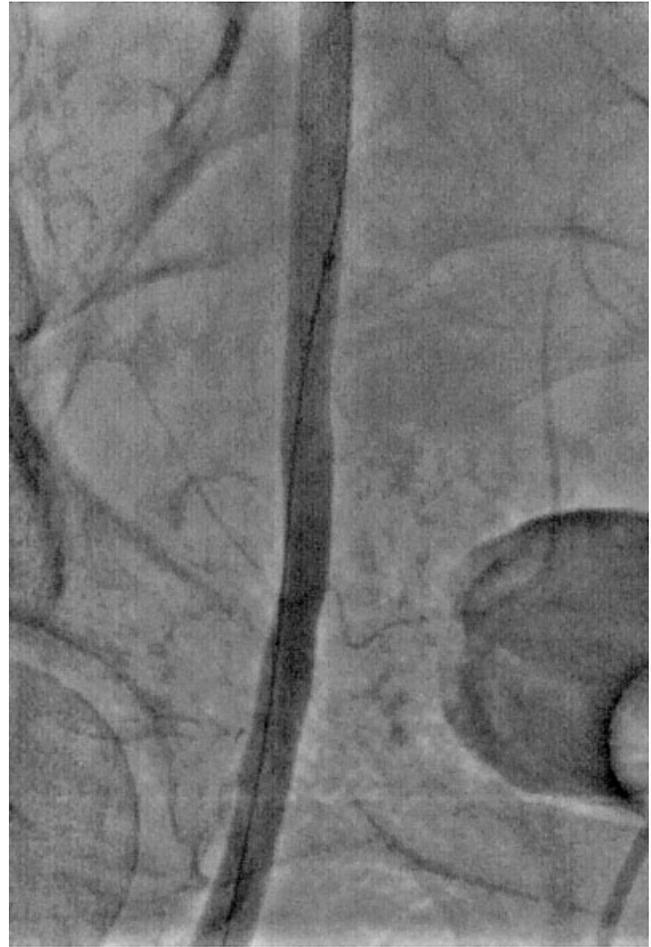
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**Fig. 1.** Active bleeding is visualized at the 8F intraaortic balloon pump sheath insertion site. Note that the entry site is too high: well above the femoral head.

With some angulation, the cause was clear: a small branch had been pierced by the sheath and was now actively spurting (Fig. 1). To my amazement, this was exactly the same situation shown by Chris at the review course [1]. As he had taught me, I attempted balloon tamponade, but the indwelling IABP would not allow an adequate seal. On to plan B, just as Chris had. We would coil embolize the branch, but in our case the IABP had to go first. Thankfully, this could be accomplished with a high degree of success using a closure device. A Perclose® was chosen since it would leave the least material in the way if we needed to do selective side branch cannulation. Successfully sutured, the bleeding was much less, and after a 10-minute balloon tamponade, the bleeding ceased (Fig. 2). By then, the six-pack of platelets was infusing to ameliorate the effects of abciximab. I recalled that this would be enough since there are only 1.5 molecules of abciximab for each GPIIb/IIIa receptor.



**Fig. 2.** After removal of the balloon pump, Perclose®, and balloon tamponade, the bleeding has stopped.

Having used abciximab for years, but never having had to reverse it before, this seemingly meaningless bit of Board Review trivia really paid off! The IABP was re-placed in the left groin and the patient recovered (6 units of packed red cells later!)

So, why am I using my space here to recall a complication? Precisely to remind us all of the usefulness of reviewing what we do on a regular basis. At this year's ACCF/SCAI Board review we had over 600 attendees. We polled them on the last day with interesting results:

Practice type: Private practice: 85%, Academic: 15%  
 Practice size (number of physicians): <5: 45%; 5–10: 27%; >10: 29%  
 Interventional volume performed last year: 75–100: 37%; 100–150: 26%; 150–250: 23%; >250: 15%  
 Years since cardiology training: <5: 34%; 5–10: 20%; 10–15: 12%; >15: 34%  
 Completed 1 year of formal Interventional training? Yes: 47%; No: 53%

Taking this course as a review only? Yes: 10%; No: 90%  
 Taken the ABIM Interventional Boards before? Yes: 28%; No: 72%

While most in attendance were focused on an intensive review prior to an initial Board attempt, it is clear from the poll above that some attended because they didn't pass the first time. Some I spoke with hadn't studied the last time, figuring that since they do intervention every day, they could easily pass on that day-to-day knowledge alone. They miscalculated. Most attendees were in small private practice groups and were often more than 5 years removed from training. We all have a tendency to forget the things we don't do often. But it is precisely in times of stress, or in situations of a rare diagnosis or rare complication, that our true fund of knowledge is tested. Even more interesting were the attendees who were not planning to take the Boards this year at all. Presumably they were attending just to get an objective review of the entire interventional field. I applaud them for taking time out of busy practices to refresh their knowledge. As the process helped me to better treat my patient, I am sure it will help them in their practices as well.

What processes are available for us to "keep current?" Certainly the Board Review will be a good yearly update. Under the co-guidance of Christopher White, MD, FSCAI, and Joe Babb MD, FSCAI, this course will continue and evolve. Since 2003 was the last year to qualify for the

ABIM Interventional Boards via the practice pathway, it is anticipated that the number of attendees in 2004 may be lower (there are less than 200 US-based interventional fellows who could be eligible to sit for the Boards). Many of us are hoping that the Review course could also well serve the practicing physician who desires an update. I would urge you all to consider this as an option.

A second option your Society is perusing is to develop simulator-based training courses. Cardiovascular simulator technology is an excellent way to practice and test performance in difficult situations. These very realistic cases provide a quantifiable measure of technical ability and problem-solving skills. We anticipate that national standards for benchmarking performance will soon be developed. Physicians wishing to test their skills and to brush up on complication management should find this training modality very valuable.

My parting recommendation: commit now to a self-imposed program of review, update and testing. Using self-study (such as CathSAP II), review courses (ACCF/SCAI Board review) and simulation training is probably your most comprehensive plan. You owe it to yourself, but more importantly, you owe it to your patients.

## REFERENCES

1. Samai AK, White CJ. Percutaneous management of access site complications. *Catheter Cardiovasc Interv* 2002;57:12-23.