The Cardiologist and Surgeon Relationship

What is the ideal arrangement for both practices and patient care?

BY CRAIG M. WALKER, MD, FACC

One of the things I find most amazing in today's medical world is the number and nature of battles raging between physicians of different specialties treating the same disease process. These "turf wars" tremendously hinder our ability to provide optimal patient care and are sources of great angst. From day one, we have tried to establish trends in our practice to avoid that problem. To encourage physicians from different specialties to work together, we created a shared compensation model and open communication.

FUSSING AND FIGHTING

A recent *Wall Street Journal* article highlights what is happening in today's hospitals. A cardiovascular surgical group has filed an antitrust suit against a cardiology group who hired their own surgeons and stopped referring patients to the cardiovascular surgical group that had previously received all of their referrals. Battles such as this are raging across the US. There are now "wars" at hospitals over credentialing for procedures. Many physicians will not even speak to each other.

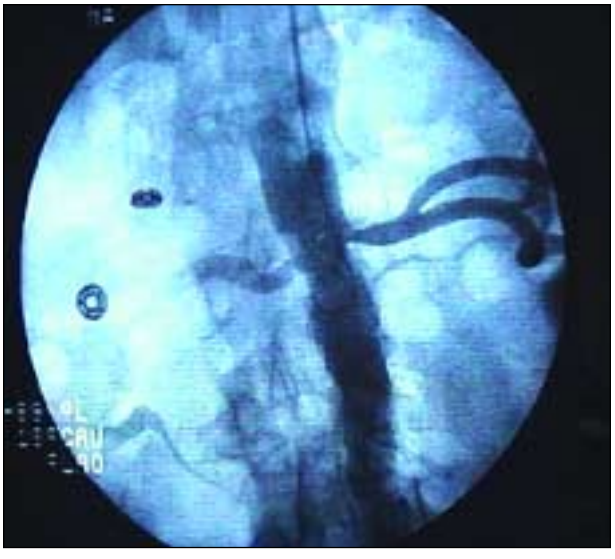

Figure 1. Abdominal aortogram illustrating bilateral renal artery stenosis.

Figure 2. Aortoiliac angiography demonstrating severe bilateral iliac disease.

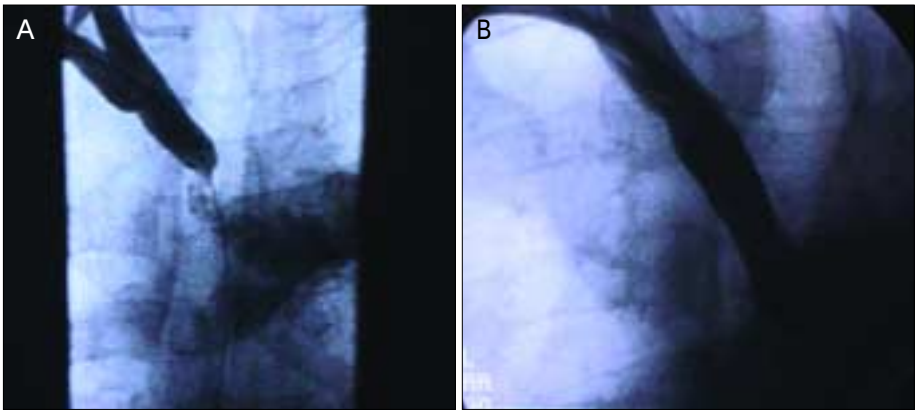

Figure 3. Imaging showing 99% stenosis at the origin of the right innominate (A). The right innominate after successful stenting (B).

Now, 30 years since the advent of balloon angioplasty, interventional treatments have created effective therapeutic options for many cardiovascular disorders that could have only been treated with surgery in the past. Now, interventional radiologists, angiologists, cardiologists, and surgeons are all competing for the same patients. Surgeons are not only being paid less per procedure, they are also forced to take much more challenging and time-consuming cases. As interventional therapies continue to improve, even more procedures will be performed in this fashion. Increasing numbers of surgeons are trying to develop interventional skills; in our "hands-on" peripheral vascular training course, we have observed that nearly 50% of the recent participants have been surgeons.

CASE STUDIES IN TEAMWORK

Patient 1

A 56-year-old man was referred for coronary artery bypass surgery during one of our peripheral vascular training courses. The patient had known critical multivessel coronary artery disease as well as significant other atherosclerotic disease, including a 95% stenosis in the innominate artery, a totally occluded left internal carotid artery, a 95% stenosis in the left subclavian artery, critical bilateral renal artery disease (Figure 1) with an elevated BUN and creatinine, and critical aortic bifurcational disease (Figure 2). If possible, the cardiovascular surgeon did not want to cross-clamp the aorta because it was severely calcified. When the patient arrived, he was diaphoretic and had chest discomfort. The nurses found a left brachial blood pressure of only 60 mm Hg (we knew that this was probably not reflective of central blood pressure but had no way to noninvasively monitor blood pressure). An electrocardiogram showed profound ST-segment depression that was not seen prior to transfer. The patient was treated with NTG sublingually and beta blockers, with which his angina and ST-segment changes resolved.

The patient was brought to the catheterization laboratory where David Allie, MD, (cardiovascular surgeon) performed a cutdown on a pulseless right brachial artery. After the right brachial artery was exposed, he started performing a left brachial artery cutdown. Once the right brachial artery was exposed, I performed angioplasty and stenting of the severely stenotic innominate artery (Figure 3). This improved cerebral blood flow via the right carotid and right vertebral arteries, allowed blood pressure measurements in the right arm, and allowed the right internal mammary artery to be used as a conduit (Figure 4). By the time this was performed, Dr. Allie had already exposed the left brachial artery. I moved to the left arm, and Dr. Allie closed the right brachial artery arteriotomy. The severely stenotic left subclavian artery was stented successfully, which improved blood flow to the brain via the left vertebral artery, allowed blood pressure readings in the left arm, as well as allowed the left internal mammary artery to be used as a conduit. Because the patient's central blood pressure was markedly elevated and the BUN and creatinine levels were elevated, the severely stenotic left renal artery was

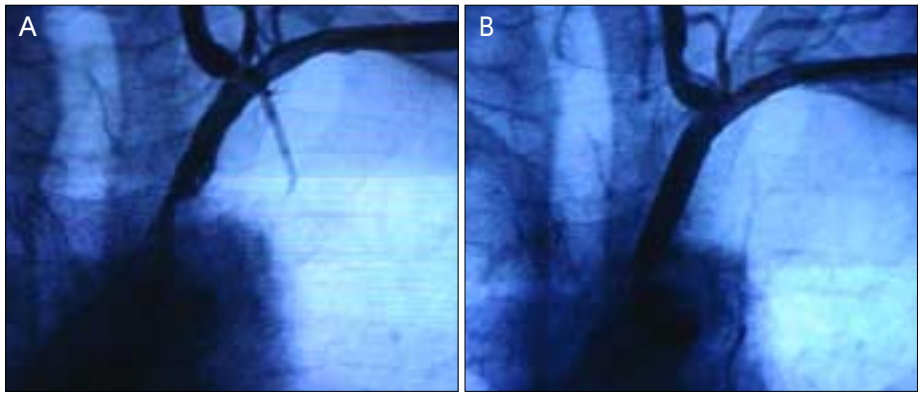

Figure 4. Severe obstruction just after the origin of the left subclavian (A). Angiography of the left subclavian after stenting (B).

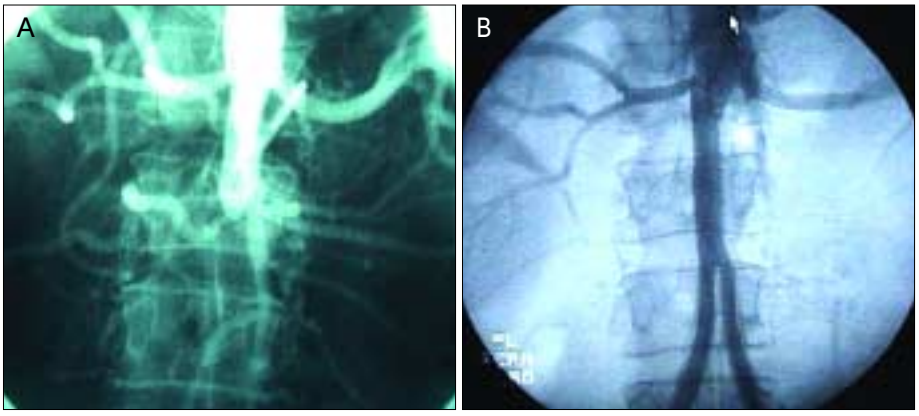

Figure 5. Abdominal aortography formed via the brachial approach demonstrating a total occlusion of the abdominal aorta (A). The same patient after successful recannulization of the abdominal aorta and bilateral iliacs (B).

stented. Dr. Allie then closed the left brachial arteriotomy. The patient underwent off-pump CABG the next day with a left internal mammary artery graft to the left anterior descending artery and a right internal mammary artery graft to the right coronary artery. He was discharged 2 days later (3 days from the day of transfer). One month later, the iliac arteries and the right renal artery were stented. The patient is now 5 years postsurgery and is asymptomatic with normal renal function.

Patient 2

A 38-year-old woman had three previous aortobifemoral bypasses that had all occluded. She had developed rest pain that was not responsive to medications and had bilateral foot ulcers. She had experienced a massive gastrointestinal bleed 3 weeks previously, necessitating transfusion. Her surgeons deemed that she was not a candidate for repeat aortofemoral bypass due to scarring and adhesions. She was not a candidate for axillobifemoral bypass because both subclavian arteries were occluded, nor was she a candidate for thoracobifemoral surgery because of concomitant lung disease. Angiography demonstrated total occlusion of the abdominal aorta, reconstituting at the very distal common femoral artery.

We entered each superficial femoral artery (there was not enough room to place sheaths in the common femoral arteries) and crossed the areas of occlusion with hydrophyllic wires. Balloon angioplasty yielded a poor result. Because this was performed in 1993, there were fewer options than exist today. We chose to use 16 Palmaz stents (Cordis Corporation, a Johnson & Johnson company, Miami, FL) side by side (eight on each side) (Figure 5). Although the final angiographic result was not ideal, the patient has remained asymptomatic and several subsequent angiograms have disclosed widely patent vessels. This patient has had subsequent successful coronary intervention and successful stenting of an occluded left subclavian artery via femoral approach. She had carotid angiography and subsequent carotid endarterectomy. The patient has never again experienced claudication.

COOPERATION

These cases illustrate how cardiologists and surgeons must work together if we are going to optimize the standard of care to this population of patients. This cooperation even extends to premedicating a patient. One controversial issue would be making the determination of which patients should receive preprocedural clopidogrel. This improves interventional outcomes, but has been reported to increase bleeding in open surgical procedures. Algorithms that discriminate which patients are more likely to need urgent surgery rather than intervention can help to avoid surgical morbidity. The importance of communication in developing the proper protocol cannot be overstated because, occasionally, an interventional procedure can have complications necessitating surgery.

What about staged procedures? Which intervention should be performed first? What type of angiography should be performed? Have potential distal targets been identified if surgery is required? Collaboration with our surgical colleagues is essential because complications can and will occur. If we are to improve the outcome when an unfortunate event occurs, a seamless transition to surgery is required. Procedures that hinder future surgical options have resulted in frequent criticism of peripheral intervention. In my opinion, this criticism is justifiable. We should never stent a potential distal anastomotic site if it can be avoided. In our practice, rarely would we proceed with surgery as the first therapeutic modality. If intervention fails, the surgical option is always available. This treatment algorithm has served our patients and our practice well for 20 years. Close, honest, and thoughtful collaboration has improved my skills as an interventionalist, and I am certain that our surgeons echo that statement. ■

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