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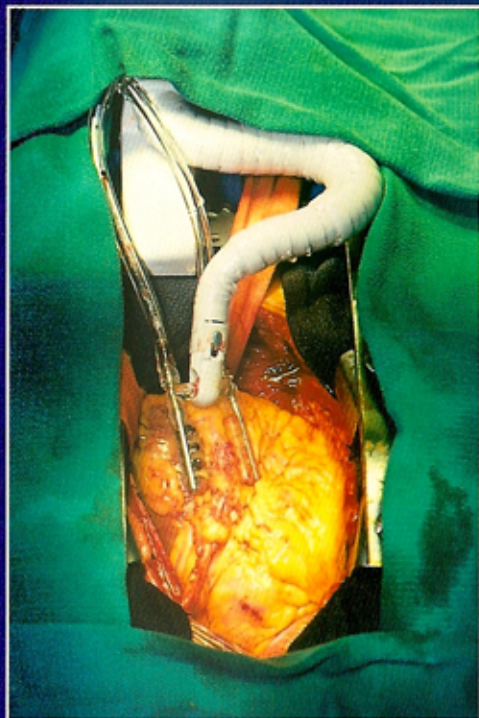
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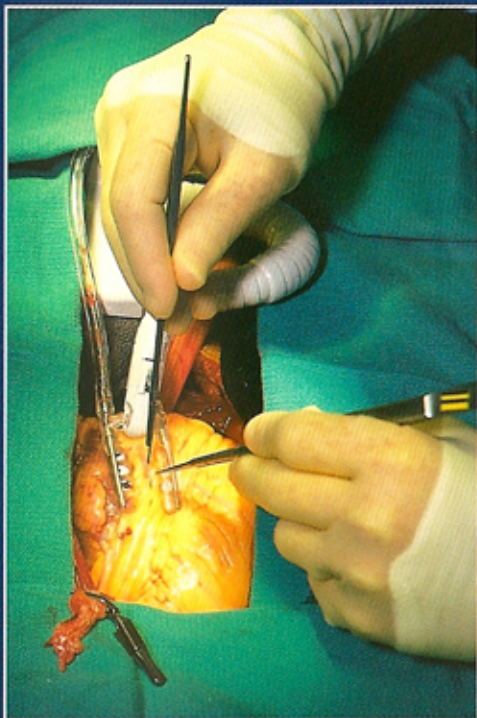
**Minimally Invasive Heart Surgeon
Dr. Kenneth Herskowitz Looks to the
Future of Cardiovascular Surgery**



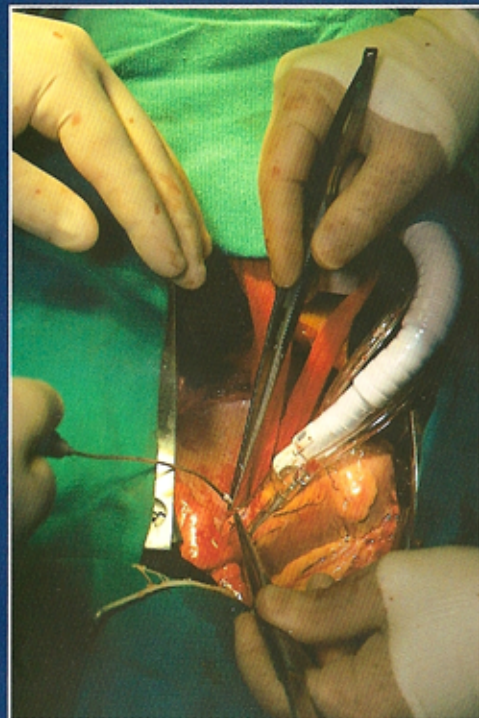
A Miami native, Dr. Herskowitz completed residency training at Baylor College of Medicine and returned to Miami for a Cardiovascular Surgery Fellowship at Jackson Memorial Medical Center. Photographer: Jay Greenbaum/HydroEye.



The left internal mammary artery is anastomosed to the LAD. Photographer: Jay Greenbaum/HydroEye.



The Medtronic Octopus® stabilizer allows complete stabilization of a 2 cm segment of the left anterior descending artery (LAD) while allowing the heart to beat as normal. Coronary blood flow is uninterrupted with the use of special intracoronary shunts. Photographer: Jay Greenbaum/HydroEye.



The stabilizer allows access and stabilization of the most difficult areas of the beating heart including the circumflex vessels on the backside. Here a vein graft is anastomosed to an obtuse marginal vessel with the aid of an intracoronary shunt. Photographer: Jay Greenbaum/HydroEye.

Kenneth Herskowitz, M.D., F.A.C.S., learned from the best. While completing his internship and residency in general surgery at Baylor University, he trained extensively with Drs. Michael DeBakey and Stanley Crawford. On a daily basis, Dr. Herskowitz was exposed to consultants who were the best in their fields. Being under the tutelage of world-renowned cardiovascular and thoracic surgeons fueled his interest in these surgical subspecialties.

Following his residency at Baylor, Dr. Herskowitz returned to his hometown of Miami to further his training in thoracic surgery. From 1992 to 1994, he served as resident and chief resident in Cardiovascular Surgery at Jackson Memorial Medical Center. He then held several positions within the University of Miami medical system as assistant professor of Surgery, Division of Cardiothoracic Surgery; chief of

Cardiothoracic Surgery at the Veterans Administration (VA) Hospital; and director of Circulatory Support Programs within the transplant division.

During his three-year tenure at the university, Dr. Herskowitz realized many accomplishments. While at the VA Hospital, he redesigned and developed new systems and critical care pathways that allowed him to double the size of the open heart program, from 150 open heart procedures per year to 300 procedures. The program became the major referral center for cardiac surgery in the south with referrals from Puerto Rico and as far north as central Florida. At the same time, the program became the leading VA heart surgery program in the nation with the country's lowest morbidity and mortality rates.

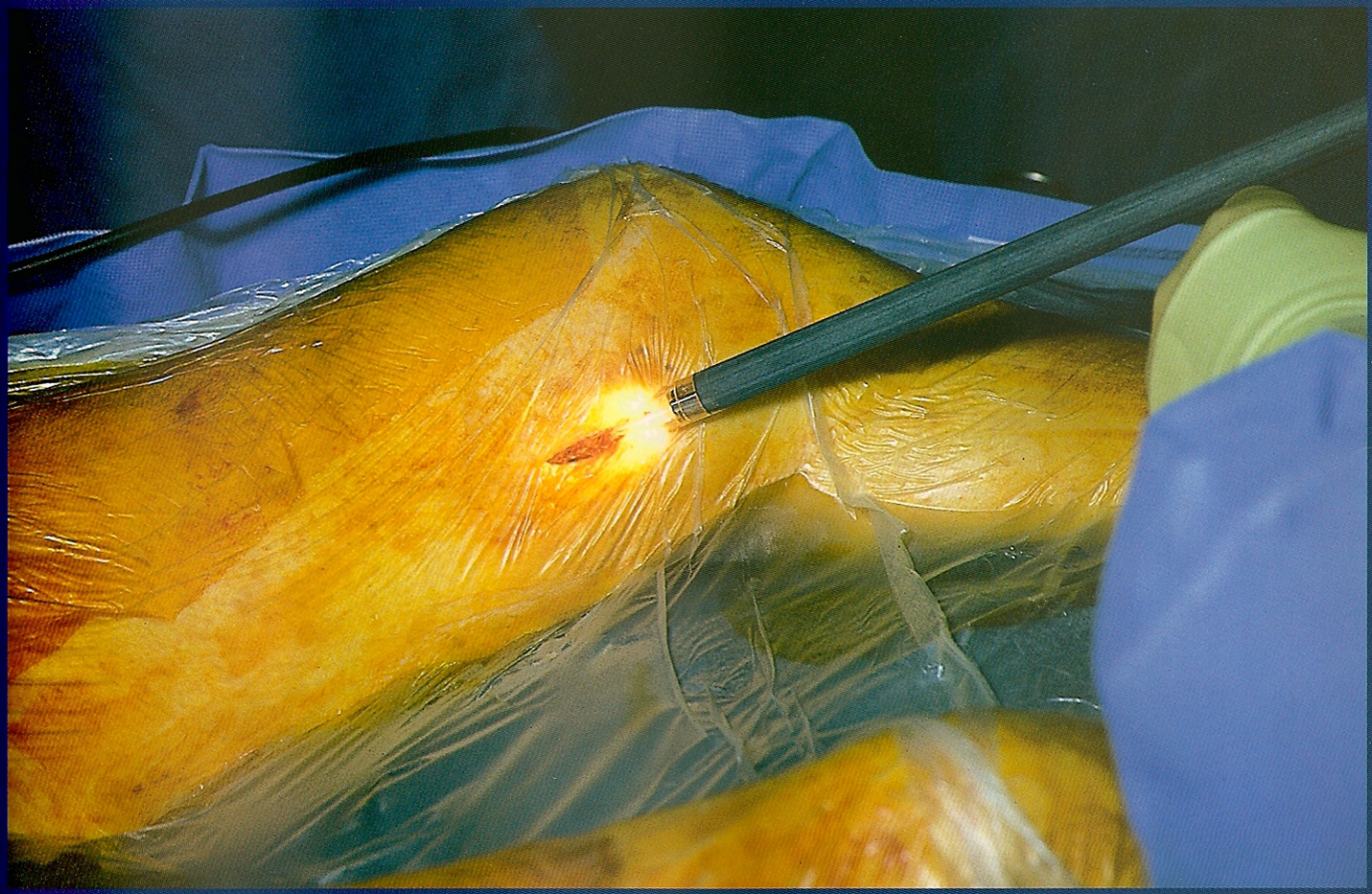
While at Jackson Memorial Medical Center, Dr. Herskowitz gained extensive experience and became a leading expert in many

types of aortic aneurysm procedures, including aortic valvular surgery, ascending aortic aneurysm surgery, thoracic aneurysm surgery, aortic dissection surgery, thoracoabdominal aneurysm surgery, and Marfan's Syndrome cases. In addition, Dr. Herskowitz organized an annual aortic surgery symposium, where the top surgeons from around the U.S. gathered to speak on a regular basis.

As director of Circulatory Support Programs, Dr. Herskowitz was a member of the heart/lung transplant team and transplanted the first Heartmate Left Ventricular Assist Device (LVAD). He also taught a course on Abiomed, an advanced cardiac assist system and helped develop some groundbreaking research projects regarding antirejection therapies for heart transplant recipients.

Beating Heart Surgery

Dr. Herskowitz also specializes in off-pump coronary bypass (OPCAB) surgery, having per-



Toward the goal of minimizing the invasive conditions of traditional coronary bypass surgery, Dr. Herskowitz utilizes an endoscopic saphenous vein harvesting (ESVH) system. An endoscopic light cable is inserted into the leg to locate the saphenous vein. A vessel loop is then placed around the isolated vein while a cannula, armed with CO₂ insufflation, dissects the surrounding subcutaneous tissue from the vein. Photographer: Jay Greenbaum/HydroEye.

Endovascular Stent Grafts

For over 40 years, abdominal aortic aneurysms (AAA) have been treated with conventional surgery, whereby the abdomen is opened with a large incision and the damaged portion of the artery is repaired with a graft sewn into place. Patients remain in the hospital for seven to 10 days and the recovery time is approximately six weeks. Complications from conventional surgery can include gastrointestinal bleeding, insufficient blood flow to the colon, and major wound infections.

During the 1990s, surgeons began developing minimally invasive procedures to treat AAA. The first stent graft was developed and used in 1991 by a physician in Argentina. In 1995, the first successful endovascular AAA repair in the U.S. was reported, and in September 1999 the FDA approved stent graft devices from two manufacturers.

Patients receiving an endovascular stent graft are given a local anesthetic, then the procedure is performed by making a small incision in each groin. The stent graft is inserted with a catheter into the femoral artery and guided through the aorta to the aneurysm. Once in place, the stent graft expands to fit within the diameter of the aorta and anchors itself to the artery wall.

Because the procedure is new, the long-term outcomes of stent grafts are unknown. Some of the immediate benefits include fewer serious complications than in conventional surgery, less time spent in the hospital and ICU, and faster recovery times. One of the most common complications is blood leakage around the site, which occurs in approximately 20 percent of cases; however, the leakage usually resolves on its own in a week or two. Minor complications most often involve swelling at the groin incisions and narrowing of the femoral artery.

Without major complications, patients are usually out of bed and eating just hours after surgery and walking within 24 to 36 hours. Most patients usually go home within two days of surgery and achieve full recovery after one week.

While early results are promising, endovascular grafts are not for everyone. Some patients are not candidates due to renal artery involvement, heavy calcification of the aorta, peripheral vascular disease, or vessels that are too small.

Additionally, aneurysms should be a certain size before being treated by surgical repair. Aneurysms of 5 cm or larger are at the greatest risk for rupture and should be treated immediately. Aneurysms that are around 4.5 cm in diameter and have been growing over time also should be repaired. Aneurysms of 4 cm or less generally do not require treatment but should be monitored for growth on a regular basis.

formed over 400 such surgeries in the last five years. Since 1995 when he performed the first OPCAB at the VA medical center, Dr. Herskowitz has helped refine and develop techniques in this new and exciting area. During OPCAB, the heart-lung bypass machine is not used. Instead, the heart continues to beat and is stabilized while the surgeon performs the bypass surgery.

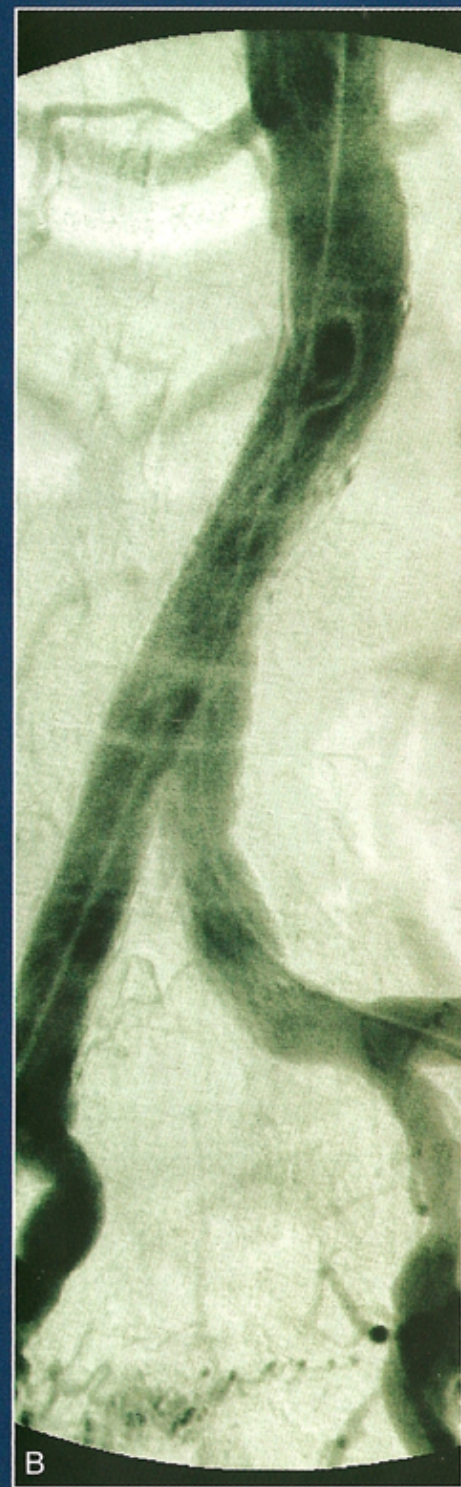
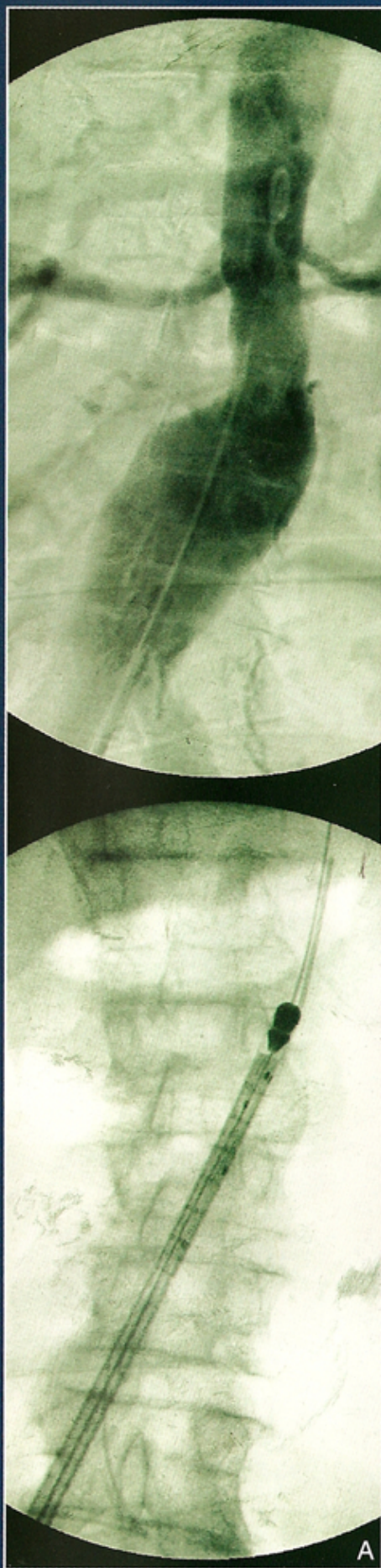
While the OPCAB can be utilized on most patients, it is the optimal procedure for those who are predisposed to experiencing problems on a bypass machine. For example, those patients with advanced pulmonary disease, renal failure, carotid disease, or extensive calcification of the aorta are all excellent candidates because they would otherwise be at high risk with conventional coronary artery bypass grafting (CABG). Patients have clearly benefited from the procedure with less perioperative complications (i.e., stroke, renal failure), fewer blood transfusions and decreased length of hospital stay.

If a patient can't be bypassed due to coronary disease, Dr. Herskowitz may instead perform transmyocardial revascularization (TMR). This new procedure provides direct blood flow to ischemic heart tissue through channels created by a laser beam. It was FDA approved in May 1999. Like OPCAB, TMR may be performed without using the bypass machine and can be used in combination with OPCAB.

According to Dr. Herskowitz, most arterial revascularizations are now performed with radial arteries and bilateral mammaries. The use of these vessels in cardiac procedures is a major advancement and improves the long-term patency of grafts and decreases the need for reoperation.

Endovascular Stent Grafts

Upon FDA approval of



The AneuRx stent graft is shown here being inserted into the femoral artery and guided through the aorta to the aneurysm (A). Once in place, the stent graft expands to fit within the diameter of the aorta and anchors itself to the artery wall (B). Photographer: Jay Greenbaum/HydroEye.



Dr. Herskowitz's free time is spent with his wife Elena, a practicing ophthalmologist, and three sons, Brian, Mathew and Billy. Photographer: Jay Greenbaum/HydroEye.

radiologists," says Dr. Herskowitz, "because both complement one another in terms of technique."

Future of Cardiovascular Surgery

Dr. Herskowitz has been practicing in the Fort Lauderdale area for 5 years. He has developed an extensive practice in Cardiac Vascular and Thoracic Surgery. He continues to be at the forefront of new technologies involving surgical treatment of arrhythmias, heart failure and endoluminal therapy of aortic disease.

His practice involves work at Northridge Medical Center, Broward General Hospital and Holy Cross.

The field of cardiovascular and thoracic surgery is changing rapidly. New developments geared toward less invasive and more definitive therapies, quality of life and quicker recoveries are now a primary goal. Dr. Herskowitz has remained at the forefront of his field developing his skills in both OPCAB and endovascular stent grafts. With a past record of excellence in both the academic and private practice settings, Dr. Herskowitz has built a formidable foundation as a cardiovascular surgeon.



endovascular stent grafts in 1999 (see sidebar), Dr. Herskowitz developed an interest in this procedure because it is less invasive and allows for much less morbidity, shorter hospital stays and better outcomes than extensive aneurysm resection. In performing the technique, he has been working with Dr. Mike Rush, M.D., an interventional radiologist at North Ridge Medical Center. "The procedure requires a multidisciplinary approach between surgeons and

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