

# KATZ PUBLISHES SLIDE LECTURE ON FACIAL RECONSTRUCTION



Dr. Arnold E. Katz

Sometimes patients with skin cancer are left with a very unsightly defect after the cancer is treated with surgery. With facial reconstructive techniques available today, it is possible to repair these defects so that within six months, most observers cannot realize what the patient has experienced.

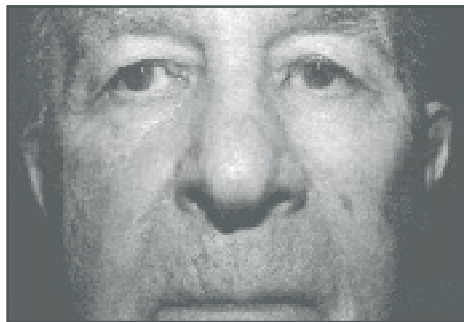
Arnold E. Katz, MD, professor of clinical surgery and chief of our otolaryngology-head and neck surgery (ENT) service, is a specialist in facial reconstruction; specifically, reconstruction of the cheek, lip, nose, and forehead. His outstanding skills and talents in this field have been recognized by the American Academy of Otolaryngology-Head and Neck Surgery, which in 1999 published his instructional slide lecture, *Local Flaps for Reconstruction of the Face after the Removal of Skin Cancer*.

Dr. Katz co-authored this work with Daniel M. Siegel, MD, associate professor of dermatology and chief of dermatologic surgery at Stony Brook, and Donald J. Grande, MD, professor of dermatology at Boston University and chief of dermatology at Lawrence Memorial Hospital in Medford, MA.

After skin cancer has been removed from the face, the cosmetic results will never be perfect. The facial plastic surgeon and the patient can always find the scars. Usually, however, most other people will not notice the scars six months after the reconstruction.

Sometimes additional operations can improve the final result, but in the large majority of patients, one reconstructive operation is all that is required. Indeed, it is truly amazing how well the body heals and how natural patients look even after large facial reconstructive operations.

*The remarkable success that Dr. Katz achieves in facial reconstruction can be seen in these before and after photos, which were prepared for his "slide lecture" publication:*



**Comment by Dr. Katz:** After the removal of skin cancers of the cheek, patients may be left with large defects. The cheek defect shown here is very close to the lower eye lid, the nose, and the upper lip. It is very important to close such a defect without pulling the eyelid down, the nose to the side, or the upper lip upward. By placing the scars in normal skin wrinkles, and rotating skin from in front of the ear, most people don't even notice what the patient has been through. (Notice the freckle that was near the ear is now near the nose.)

## Some Recent Publications\*

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\* The names of faculty authors appear in boldface.

# FIRST ENDOVASCULAR ANEURYSM REPAIRS PERFORMED WITH FDA-APPROVED DEVICE

## *Two High-Risk Patients Benefit From New Minimally Invasive Surgery*

On November 19, 1999, the first fully-approved endovascular aneurysm operations on Long Island were successfully performed on two high-risk patients at University Hospital and Medical Center. The new minimally invasive procedure requires use of an "internal bypass" device called a stent graft, the first of which received approval in September 1999 from the Food and Drug Administration.

The two patients were both men, aged 67 and 80, who had life-threatening aortic abdominal aneurysms (AAAs). They had been evaluated in the Stony Brook Vascular Center, whose physicians felt that standard open surgery for aneurysm repair posed unusual risks in their cases. As a consequence, the patients were referred for endovascular surgery.

The operations were performed by a multidisciplinary team of the Stony Brook Vascular Center, led by vascular surgeon Rishad M. Faruqi, MD, assistant professor of surgery, and interventional radiologist John A. Ferretti, MD, associate professor of clinical radiology and chief of special procedures and interventional radiology.

Dr. Faruqi, who joined our Division of Vascular Surgery in August 1999, was specially trained in endovascular surgery at the University of California at San Francisco, where he worked under the direction of Timothy Chuter, MD, one of the pioneers and world leaders in this field.

Endovascular aortic stent grafting involves actually doing a bypass from within the abdominal aorta, which is the main artery that supplies blood to the internal organs and legs. Stent grafting for AAA repair may be particularly beneficial for patients too ill and infirm to tolerate the conventional open repair.

While this minimally invasive method of AAA repair allows high-risk patients to undergo lifesaving surgery they could not otherwise have, the FDA has approved its use in "normal-risk" patients with AAA, as well.

AAA—an enlargement or bulge in the aorta caused by a weakened arterial wall—is the 13th leading cause of death in the United States, claiming over 15,000 lives annually. In this country alone, more than 190,000 AAAs are diagnosed each year and 45,000 patients undergo surgery.

Aneurysms are most disturbing because of the risk of rupture, which increases with size, but remains unpredictable. If aneurysm rupture occurs, the mortality rate of surgery is increased 10-fold. Such rupture is often instantly fatal.

Aortic stent grafting promises to offer a simpler and safer alternative to open abdominal surgery in the treatment of AAA. It may prove to be one of the most dramatic advances made in the field of vascular surgery, as it has the potential to save many lives.

On September 28, 1999, the FDA approved the stent graft used in the AAA repairs performed by Dr. Faruqi. While there are several different types of stent grafts currently being tested, the stent graft that Dr. Faruqi implanted was the AneuRx device, one of the two stent grafts that received FDA approval.

Results from a prospective, non-randomized, multicenter trial in the U.S. with 440 patients showed the AneuRx stent graft to be as effective as standard

open surgery in the treatment of AAA and that its use can cut major complications associated with surgery by half.

Other benefits of the AneuRx stent graft included improved patient quality of life due to reduced hospital stay (from 9.3 days to 3.4 days) and faster time to ambulation (from 3.6 days to 1.4 days).

Although stent grafts like AneuRx may offer many patients an easier option, they are not risk-free, the FDA warned. Moreover, long-term data on these devices is incomplete, and there are factors, such as the shape and location of the aneurysm, which may contraindicate their use in certain cases. Thus, not all patients with AAAs are candidates for endovascular repair.

The FDA also emphasized that doctors must be specially trained to use the complex endovascular devices. To this end, Stony Brook's endovascular specialists were trained in accredited fellowship programs.

## **ABOUT ENDOVASCULAR AAA REPAIR**

The traditional approach to AAA repair involves operating on the abdomen, opening the aorta, and inserting a graft—a slender fabric tube—through the middle of the aneurysm, which is then sewn in place. While the graft is sewn in place, the blood flow in the artery must be temporarily stopped. This maneuver puts much strain on the heart—too much strain for infirm patients with compromising medical conditions.

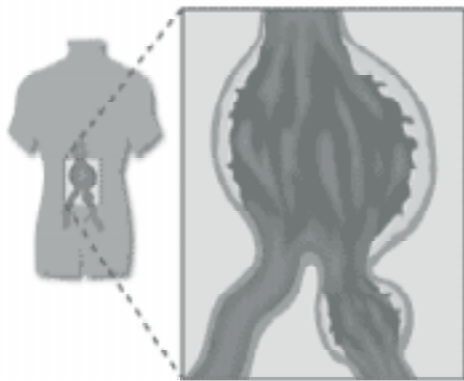
Because the conventional operation generally involves a long abdominal incision, a 24-hour stay in the intensive care unit, and a total hospital stay of seven to ten days, the new endovascular procedure may offer significant advantages. This minimally invasive surgery, which can be performed using regional or even local anesthesia, enables doctors to accomplish the repair without resorting to open abdominal surgery.

The AneuRx stent graft is similar to the traditional Dacron graft but has self-expanding, diamond-shaped stent

rings designed for self-anchoring to the vessel wall by “friction fit.”

The stent graft is collapsed and loaded into a tube-like delivery system. The arteries in the groin are exposed by the surgeon using two small incisions. A wire is then threaded up from within the blood vessel to a point beyond the diseased part of the blood vessel. This wire acts like a monorail on which the delivery system and other catheters (thin tubes) and stents can move up and down the blood vessel.

The delivery system carrying the stent graft within it is threaded up the artery over the wire lying within the blood vessel, and is guided by fluoroscopy (x-ray imaging) through the aneurysm. Once in place, the sheath of the delivery system is gradually withdrawn, allowing the stent graft to re-expand to its original size and anchor itself onto the inside of the arterial wall.



*An abdominal aortic aneurysm is a bulge or balloon that forms in the wall of the blood vessel.*

The AneuRx stent graft is designed to adapt to individual patient anatomies. Extender cuffs may be used to modify the length of the implanted graft, providing surgeons with a means to create an “exact fit” for each patient. Additionally, the stent graft’s fully supported exterior is designed to prevent kinks or twisting and device migration over time, which can lead to the need for further intervention.

Accurate placement of the stent graft is essential because the arteries to

the kidneys are close by and should not be covered. Since the procedure is minimally invasive, the patient is usually able to eat the same day, walk the next day, and go home in two or three days.

The purpose of the aortic stent graft in AAA repair is not to brace the artery open (as stents used with angioplasty do), but to create a new passageway for blood, allowing it to bypass the weakened/diseased area. In this way, the stent graft prevents blood from impacting this weak segment of the artery, and thereby prevents aneurysm rupture.

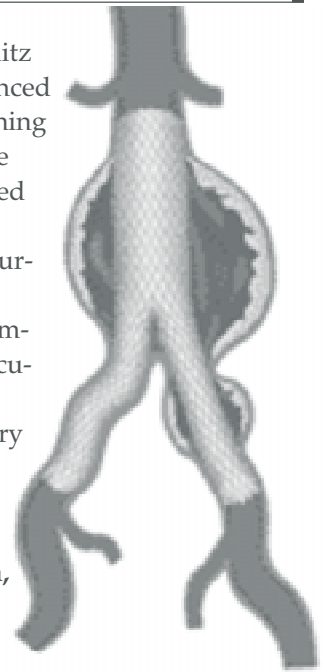
### **OUR PROGRAM IN ENDOVASCULAR SURGERY**

Stony Brook’s Department of Surgery and Department of Radiology have recently collaborated to form the Stony Brook Vascular Center. One of the main goals of this center is to provide new therapeutic options, such as the program in endovascular surgery.

Dr. Faruqi and his endovascular colleague, David Gitlitz, MD, assistant professor of surgery, who also recently joined the Division of Vascular Surgery, were both recruited to join Dr. Ferretti as the leaders of the endovascular program. Both Drs.

Faruqi and Gitlitz have had advanced fellowship training in the use of the newly developed techniques of endovascular surgery.

Other members of the Vascular Center’s multidisciplinary team include vascular surgeons **Paul S. van Bemmelen, MD, PhD**, assistant professor of surgery, **Fabio Giron, MD, PhD**, professor of surgery and chief of vascular surgery, and **John J. Ricotta, MD**, professor and chairman of surgery; and interventional radiologists **Jeanne Choi, MD**, clinical assistant professor of radiology; **James V. Manzione, MD**, associate professor of clinical radiology and chief of interventional and therapeutic neuroradiology, and **Matthew D. Rifkin, MD**, professor and vice chairman of radiology and



*Placement of the AneuRx stent graft.*

*(Continued on Page 14)*

### **FREE VASCULAR SCREENINGS TO BE PROVIDED**

*Risk of Stroke/Peripheral Vascular Disease, Presence of Abdominal Aortic Aneurysms*

This spring, the Stony Brook Vascular Center will provide free-of-charge vascular screenings to evaluate members of the community for risk factors associated with stroke disease and peripheral vascular disease, as well as for the possible presence of aortic abdominal aneurysms.

These screenings are recommended for persons 50 years of age and older, depending on associated risk factors.

*For more information, please call (631) 444-3955.*

**FREE VASCULAR SCREENINGS**

# Research Focus

## First Clinical Trial Of Patient-Monitored Anticoagulation Therapy

Some 45,000 patients receive mechanical heart valves each year in the United States. All these patients require anticoagulation medication to prevent potentially lethal blood clots from forming on the prosthetic valves. Currently, most patients are monitored by having their blood drawn and then sent to a lab for analysis. Clinical findings on anticoagulation-related complications clearly point out the need for patient management as the key factor in these events.

The persistent problem, as studies show, is that only 30% to 50% of patients have anticoagulant drug levels within the proper therapeutic range at any given time.

To help improve this situation, Irvin B. Krukenkamp, MD, professor of surgery and chief of cardiothoracic surgery, is now directing a clinical trial of the INRange™ Monitored Heart Valve System. The study, initiated in September 1999, is designed to demonstrate that mechanical heart valve patients taking oral anticoagulants can stay within their prescribed therapeutic range by self-testing and telephone monitoring.

Stony Brook is currently the sole site in the United States at which this trial is being conducted.

*The INRange System will theoretically add an unprecedented level of safety to managing patients with mechanical heart valves.*

In patients receiving anticoagulation therapy following a mechanical prosthetic heart valve implant, the establishment of an appropriate anticoagulation state, and the monitoring over time of that anticoagulant, is subject to great variability depending on a variety of factors. Indeed, bleeding and/or clotting problems attendant to oral anticoagulants in patients with mechanical valves number as high as 10 per 100 in the United States today.

In conjunction with Sulzer Carbomedics (a major manufacturer of mechanical heart valves), Stony Brook has begun to use a monitored heart valve system with three components: the Carbomedics bileaflet mechanical heart valve with an excellent performance record; an FDA-approved, at-home, dry chemical, point-of-service handheld INRange test unit manufactured by Avocet; and a telephonic/Internet-based surveillance system by Raytel that is akin to telephonic pacemaker monitoring.

Every patient who has a mechanical prosthetic valve implantation receives a preoperative evaluation and training in the anticoagulation monitoring system and devices. A Carbomedics mechanical valve is implanted. Postoperative anticoagulation is initiated in the hospital with warfarin and both laboratory and finger-strip INRange monitoring.

Additional teaching, through videos, brochures and bedside nursing, is done prior to discharge. By the time of leaving the hospital, the patient knows how to do self-testing and how to report by telephone to the central data repository on a weekly basis.

Should the surveillance system detect anticoagulation to be "OUT of RANGE," the patient and the entire medical team—the internist, the cardiologist, and the implanting surgeon—are all immediately notified of the problem

by e-mail, fax and telephone. Dosages of oral anticoagulant are adjusted and re-testing initiated.

Commenting on the importance of the study, Dr. Krukenkamp says: "The INRange System should offer substantial advantages in patient management. This will theoretically add an unprecedented level of safety to managing patients with mechanical heart valves."

This system enables patients to take responsibility for, and participate actively in, the management of their anticoagulation therapy. Furthermore, a compulsive surveillance system and data collection mechanism render feasible reporting of the effects of oral anticoagulation by age, gender, valve position, valve size, or any other variable.

Whether the correct range is maintained, and for what duration, impact significantly upon anticoagulation-related complications. The goal of such rigorous analysis is, for the first time, to reduce anticoagulation-related morbidity by 50%. The beneficial outcome for the patient will be echoed by associated declines in healthcare expenditures.

## Recent Publications

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Horimoto H, **Saltman AE**, Gaudette GR, **Krukenkamp IB**. Nitric oxide-generating beta-adrenergic blocker nipradilol preserves postischemic cardiac function. *Ann Thorac Surg* 1999;68:844-9.

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