News & Information from the Department of Cardiothoracic Surgery

check up

SUMMER 2009 | NewYork-Presbyterian Hospital/Weill Cornell Medical Center

SPECIAL ISSUE: ADVANCES IN TREATING LUNG CANCER

New Era in Lung Cancer Treatment Begins

Center offers integrated care, supports promising research

"These new initiatives make it possible for us to assemble a group of research scientists and oncologists to advance innovations that are meaningful for our patients," says Dr. Altorki

The Lung Cancer Research Institute at Weill Cornell Medical Center has opened new offices to treat more patients with an integrated approach to lung cancer, the leading cancer killer in both men and women. New laboratories, funded by a generous gift from the Lehman Brother's Foundation, are dedicated to the efficient translation of laboratory discoveries into new, more effective treatments for lung cancer patients. This 1,900-square-foot cancer research laboratory is staffed by world-class experts in the genetics and molecular abnormalities specific to lung cancer. (See page 3 for profiles of two of our scientists.) The department's participation in a lung cancer vaccine study holds the promise of a new frontier of treatment options. Dr. Nasser Altorki, an expert in lung cancer and Chief of the Division of Thoracic Surgery at Weill Cornell, leads these exciting new efforts in research and clinical care.

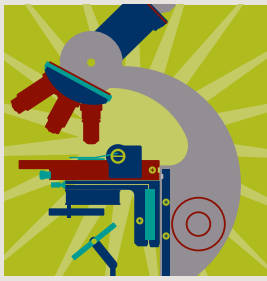
"These new initiatives make it possible for us to assemble a group of research scientists and oncologists to advance innovations that are meaningful for our patients," says Dr. Altorki.

"We offer comprehensive care that creates a true atmosphere of trust for our patients and their families. We're committed to surgical options that minimize risk and a robust rehabilitation program that improves quality of life. Our approach results in better outcomes because of the exemplary surgical skills of the team and new treatment options that are beginning to offer hope for combating lung cancer." ■

Vaccine Study Leading the Way

As part of its clinical research mission, Weill Cornell Medical Center is conducting a new vaccine study in patients who have non-small-cell lung cancer. About 400 clinical research sites around the world are participating in the study, which expects to enroll some 2,270 participants. Called the MAGRIT study, this collaborative effort will examine whether the treatment can delay or prevent recurrence of lung cancer, as well as determine its safety.

This new treatment cannot be applied to all types of lung cancers. To be eligible to participate in this study, a patient's tumor must produce a substance called MAGE-A3, which is a protein that can only be detected by performing a biopsy on tissue from the existing lung cancer tumor. Some, but not all, people with lung cancer have tumors that produce MAGE-A3.



Immunization with MAGE-A3 is intended to cause the body's immune system to attack cancer cells that produce MAGE-A3 in the same way that it fights infection

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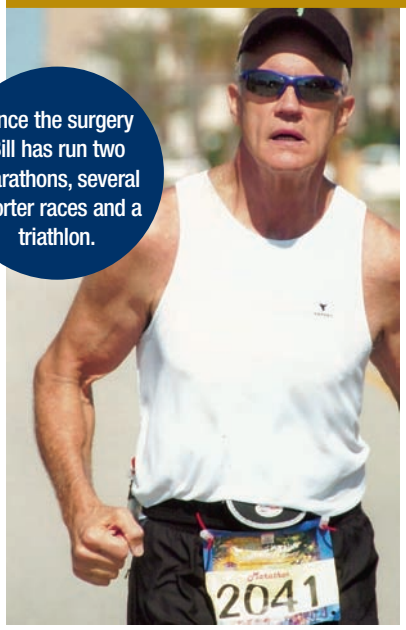
PATIENT PROFILE: Bill Schoff



Since the surgery Bill has run two marathons, several shorter races and a triathlon.

BILL SCHOFF has always taken good care of himself, following a sensible diet and getting regular exercise. An avid runner, he never failed to pack his gym shoes when frequent business trips took him out of town. Returning from the road at the end of 1996, he found himself having difficulty swallowing some Christmas turkey. Thinking he was just eating too fast, he vowed to be more careful and slow down. But when it kept happening over the course of the next few months, he went to his regular physician in Jacksonville, Florida, for a checkup. A series of tests revealed a cancerous tumor on his esophagus.

Bill and his family were in shock. "We were told it was incurable and that the outlook was quite bleak."

Surgery was recommended and Bill's GP suggested that he travel to Weill Cornell Medical Center for the procedure. "My doctor had done his residency at the hospital and thought very highly of Dr. Altorki," Bill says. "So my wife and I went to New York City for a consultation and decided to have the surgery there right away.

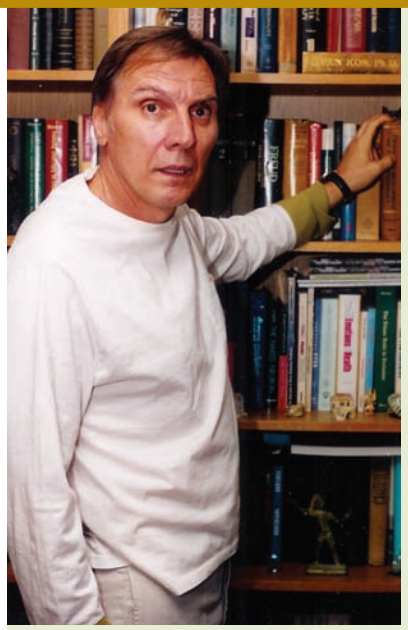
The surgery to remove his esophagus went very smoothly and he was out of the hospital a few days early. Bill knew he had months of chemotherapy ahead of him, but "Dr. Altorki gave us hope. He told my wife right after the surgery, when I was in post-op, 'we got the cancer,' so we were encouraged."

After recovering from surgery, Bill underwent chemotherapy treatment and, remaining patient throughout the ordeal, recovered his health. Today Bill is cancer-free and since the surgery has run two full marathons as well as several shorter races and a triathlon. He also rows competitively.

Over the last decade, Dr. Altorki and his office staff have kept in contact with Bill, checking in periodically to see how he's feeling.

"I'm very touched when they call me," Bill says. "It shows once again that the dedication and caring that they demonstrated to me and my family years ago is still part of how they practice medicine. It means a great deal to us." ■

PATIENT PROFILE: Ivan Kos



IVAN KOS'S ordeal with cancer began with a dry cough that he initially dismissed as the flu, but it was confirmed as a symptom of lung cancer, and surgery was recommended. After consultation with Dr. Altorki, he opted for removal of most of his right lung with the hopes of stopping the cancer in its tracks.

Though the operation was a success, six months after treatment he noticed a lump under his right armpit which turned out to be a cancerous tumor that needed to be removed. For this operation, Ivan turned to Dr. Jeffry Port, Dr. Altorki's colleague in the department. Chemotherapy and radiation followed, and nearly ten years after his surgery Ivan is doing great.

"I've really been flourishing in the last ten years."

In the decade since his surgery, Ivan has spent time reflecting on the experience of being a patient with a life-threatening disease, and he applauds Drs. Altorki and Port's approach to patient care:

"The first thing to say is that they treat every patient with the utmost dignity. They establish a tremendous sense of trust. You know at once that they are highly professional, serious doctors who will do everything for you and also that they are very caring and sensitive. The whole team at Weill Cornell was like that."

Ivan continues, "I never lost my identity during my time with them. I never became just another person with cancer. That made a huge difference for me."

Ten years after his treatment Ivan is doing the things that he loves—traveling the world, consulting and teaching, and also returning to martial arts including tae kwon do, for which he has a black belt, and tao yoga. ■

Lehman Brothers Lung Cancer Research Center to Integrate Basic and Clinical Lung Cancer Research

Funding from the Lehman Brothers Foundation has made possible the appointments of two outstanding scientists who are using novel approaches to investigate lung cancer.

Vivek Mittal, PhD, Associate Professor of Cell and Developmental Biology in Cardiothoracic Surgery, and internationally recognized cancer researcher, is the Director of the Lehman Brothers Lung Cancer Laboratory. His laboratory is actively engaged in understanding how changes in the tumor microenvironment support its spread by a process called metastasis.

Dr. Mittal and his colleagues have published seminal papers describing the role of bone marrow cells in regulating the "angiogenic switch," which is critical in mediating progression of primary tumors, initiation of metastasis and development of micrometastasis to life-threatening macrometastases in the lung.

"Cancers hijack the bone marrow cells, which fuel the progression of the tumor and its spread in the body. We are interested in preventing this deadly spread by targeting a subset of these bone marrow cells," says Dr. Mittal.

A future goal is to design drugs that regulate the bone marrow response so that it is incapable of forming new blood vessels that feed the tumor.

Key to these new types of drugs is depriving the tumor of its blood supply, thus making it smaller and more manageable.

Dr. Mittal was drawn to working at the center because of the opportunity to work side-by-side with the clinical team. "I am pleased with how quickly reciprocal interactions between the basic researchers and the clinical staff have developed," says Dr. Mittal, now in his first year at Weill Cornell. His research group will address key clinical questions pertaining to lung cancer by using state-of-the-art technologies and relevant mouse models of cancer.

Zaher Nahlé, PhD, is an Assistant Professor in the Department of Cardiothoracic Surgery who specializes in the areas of cancer cell metabolism and tumor suppression. He has devoted his career to studying the molecular biology of cancer using a multifaceted approach, shuttling between cancer models and systems of metabolic diseases, such as obesity and diabetes.

He hopes to translate that research into powerful new ways to treat lung cancer. Because cancer is a metabolic disease, insights into its treatment and management can be obtained from understanding metabolic disorders.

"Our ultimate goal is to reprogram the tumor microenvironment, making it refractory for cancer cell growth and survival, while sparing healthy cells in the process." says Dr. Nahlé.

"Understanding the molecular 'hardwiring' of a cancer cell is invariably the key to developing effective therapies. That is why we spend most of our time deciphering the molecular and genetic alterations underlying disease progression as well as what constitutes the biochemical response to therapeutic manipulations."

Vivek Mittal

Zaher Nahlé

This basic understanding will guide the departure from a one-size-fits-all approach to treating cancer to more individualized, personalized and targeted strategies using well-established metrics from the world of metabolic disorders.

The Lehman Brothers funding will make it possible for Dr. Nahlé to develop an innovative, collaborative and exciting translational research program in lung cancer and inspire thinking outside the box about this devastating disease. ■

caused by germs or viruses. Because cancer is produced by the body, the immune system does not recognize cancer cells in the same way as it does germs or viruses: it needs to be "trained" to do so. This is done by injecting the MAGE-A3 protein, thus training the body to recognize it and destroy the cells with this protein. In this way, it is hoped that any recurrence of cancer will be delayed or prevented.

When entering the MAGRIT study, patients are distributed randomly to receive either the investigational treatment or a placebo. Neither the patients nor the doctors will know who is receiving the investigational treatment or the placebo injections. For every two patients who receive the investigational treatment, an additional patient receives a placebo. Therefore, two-thirds of the patients will receive treatment with MAGE-A3.

The study begins after patients have surgery to remove the cancerous tumor. A total of 13 vaccinations will be administered. Patients will be followed in the office every six months for five years from the first administration of the study treatment, then annually by phone for another five years in order to follow their progress and to check that the cancer has not returned. ■

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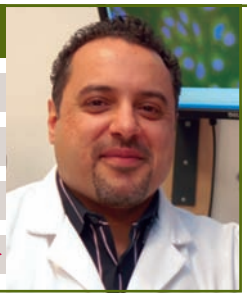

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