

By Russell Rian

**Back in 1966**, a Hollywood science-fiction film offered something new to viewers – a “Fantastic Voyage” through the inner workings of the human body with a team of shrunken doctors.

These days, fantasy is becoming closer to reality.

There is no shrunken medical team, but Dr. Charles Ulrich has taken the trip through the inner workings of his patients some 50 times now via the PillCam. The camera is an inch-long capsule that snaps thousands of images as it makes its way down the throat and into the stomach and bowels.

The special effects are dramatic: The inner workings of the digestive system can reveal inflammation, ulcers, abnormal blood vessels, polyps, tumors and other problems.

“It is very cool technology, and it’s very patient-friendly,” said Dr. Ulrich, associate professor of internal medicine at UT Southwestern Medical Center. “The patients love it, and it’s painless.”

The traditional route is far less appealing for many – a long, thin tube called an endoscope goes into the mouth and down the throat. It requires patients to take a day off work, refrain from eating, be sedated during the procedure and have someone drive them home – none of which is required for the PillCam.

“The PillCam has the potential to get a lot more people to come in for a screening examination of the esophagus because they get to swallow a pill instead of a scope,” Dr. Ulrich noted. Not all patients are willing to have the endoscope.

“But I haven’t had anybody say no to the pill,” Dr. Ulrich said.

There are now two versions of the PillCam – one that reveals problems in the esophagus, and another that travels deep into the small bowel to areas only poorly visualized by barium X-rays and computed tomography.

The esophageal PillCam has cameras at both ends and takes about 14 shots per second as it travels downward. The battery life is about 20 minutes, and a transmitter worn on the patient’s belt tells the doctor when it’s finished. It has proved useful in detecting Barrett esophagus and dilated veins, known as varices. Barrett esophagus is a precancerous condition generally attributed to long-standing acid reflux. Esophageal varices are typically due to cirrhosis or other conditions that increase pressure in the veins draining into the liver.

## Smile, you’re on PillCam

The small-bowel PillCam has a camera on only one end taking shots at four frames per second, but working about eight hours, enough time to travel through the small bowel and into the colon. Its images can help doctors

detect inflammation, including ulcers, sources of gastrointestinal bleeding, polyps, tumors, blockages and conditions in which the immune system attacks the lining of the small intestine, causing an inability to absorb nutrients. Such findings cannot be seen in most cases by other noninvasive methods.

While the PillCam doesn’t allow doctors to steer it or stop it at a specific place, it does provide a useful look around, and the resulting images are of high quality.

“If you considered endoscopy the 100 percent gold standard, this test is about 95 percent, so it’s very, very good,” Dr. Ulrich said.

The PillCam, however, doesn’t signal the end of endoscopes.

For one thing, it is not appropriate for those who have difficulty swallowing or have suspected stomach ailments.

Also, endoscopes allow physicians to cleanse and expand the stomach and colon with air, so they can see areas that might otherwise be hidden during a PillCam study.

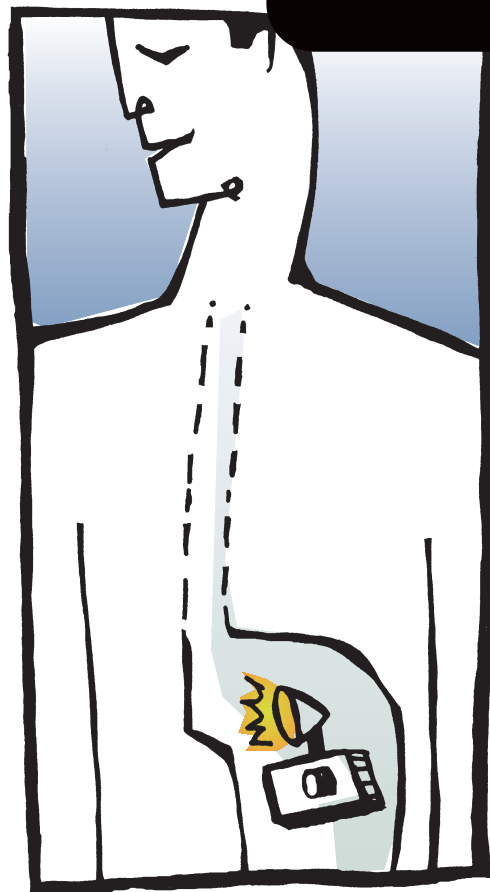
“With a scope you can always take another look, blow things up. With this you get what you get,” Dr. Ulrich said. “While you can’t see everything, the view is generally excellent, and even in areas where retained food obscures a complete view, it’s a whole lot better than nothing.

“It’s certainly technology worth using.”

For more information on the PillCam, please call 214-648-5400.

“It is very cool technology, and it’s very patient-friendly.”

– Dr. Charles Ulrich



By Toni Heinzl

Catherine Padilla

will never forget the phone call from her physician the day she arrived in Dallas for her 2003 Christmas vacation. He said he

had concerns about her recent mammogram and wanted her to schedule a biopsy.

Ms. Padilla felt her heart sink.

Cervical cancer had taken her mother from her; stomach cancer had killed her grandfather. She was only 46 years old. The accountant, who lives on a golf course in Maui, Hawaii, did not want to become another statistic in the grim annual reports of breast cancer deaths,

which total about 40,000 in the United States each year.

Ms. Padilla decided not to wait for her return to Hawaii to schedule the biopsy, so she contacted the UT Southwestern Center for Breast Care after a friend told her about the state-of-the-art screening technology and the team approach involving top-notch radiologists, cancer specialists and surgeons there.

Her biopsy was performed by the center's director, Dr. Phil Evans, holder of the George and Carol Poston Professorship in Breast Cancer Research. The results came back two days later: It was a benign growth.

The quality of care and the professionalism of the staff she witnessed at UT Southwestern Medical Center persuaded her to return a year later for her annual mammogram. This time she was found to have early-stage breast cancer. It was three days after Christmas. Instead of returning home, Ms. Padilla chose to continue her cancer treatment in Dallas.

The day after her diagnosis, she met with her surgeon, Dr. David Euhus, associate director of clinical care for the Harold C. Simmons Comprehensive Cancer Center,

Targeted Therapy

co-director of the Mary L. Brown Breast Cancer Genetics and Risk Assessment Program, and holder of the Marilyn R. Corrigan Distinguished Chair in Breast Cancer Surgery.

After removing the small, localized tumor and two lymph nodes, Dr. Euhus had good news for Ms. Padilla.

"I didn't have to undergo chemotherapy," she recalled. "And he said I'd be a good candidate for this brand-new radiation therapy called MammoSite."

MammoSite is a revolutionary type of internal breast irradiation focused on a small area of tissue. The procedure is significantly shorter than conventional radiation, in which patients have the entire breast treated five days a week for up to seven weeks. MammoSite takes only five days, with two short treatments a day.

In the MammoSite procedure, a balloon catheter is inserted into the cavity where the tumor was, and the catheter is inflated. A radiation oncologist delivers the treatment using a seed of the radioisotope iridium-192. Actual treatment time is about six to nine minutes.

"We use it for tumors of less than 2 centimeters, which are less aggressive and have sufficient healthy tissue around them," Dr. Euhus said.

Launched in August 2004, the MammoSite procedure was used on a dozen patients in its first 12 months. Patients typically have to be older than 45 because younger patients tend to have more aggressive types of cancer.

"MammoSite has been a major development in the past year," said Dr. Marilyn Leitch, professor of surgical oncology and medical director of the Center for Breast Care.

And the success rate is comparable to conventional whole-breast radiation, with a recurrence rate in less than 4 percent of patients, said Dr. Leitch, holder of the S.T. Harris Family Distinguished Chair in Breast Surgery.

Ms. Padilla today enjoys jogging and long walks on the shores of Hawaii more than ever.

"I'm so grateful," she said about her treatment. "I had no side effects, and I can run for half an hour on the beach." ❧

For more information on MammoSite treatment, please call 214-645-8525.



"I'm so grateful ...

I had no side effects, and I can run for half an hour on the beach."

—Catherine Padilla

By Toni Heinzl

It was by word

of mouth from two Fort Worth doctors that John Rutherford first heard about a young surgeon at UT Southwestern Medical Center who uses an innovative approach to removing cancerous prostate glands.

Mr. Rutherford, a retired maintenance supervisor for an oil-field pump manufacturer, was relieved that he found Dr. Jeffrey Cadeddu, associate professor of urology and an expert on minimally invasive urologic cancer treatment.

Dr. Cadeddu, holder of the Ralph C. Smith, M.D. Distinguished Chair in Urological Surgery, is one of only two Dallas-area doctors who use laparoscopic surgery for radical prostatectomy. His patients come from across North Texas and as far as Louisiana, New Mexico, Oklahoma and Arkansas. He also uses laparoscopic surgery to remove kidney tumors.

"The doctor did his work Friday night, and I came home Sunday morning," Mr. Rutherford said, pleased about his quick recovery. "I was up walking three blocks Sunday afternoon."

Dr. Cadeddu, who has performed about 250 prostatectomies using laparoscopic surgery, said the procedure takes about three to four hours – longer than the conventional, open surgery (which takes about 2 1/2 hours). But there are significant benefits for the patients.

Compared with conventional surgery, hospitalization is reduced by a day or two, and patients recuperate twice as fast.

"They are back to normal in two to three weeks after laparoscopic surgery, compared with four to six weeks after open surgery," Dr. Cadeddu said.

In laparoscopic surgery, a tiny video camera is inserted through a small incision. The camera provides up-close images on a video monitor of the area targeted for surgery. While one doctor guides the camera, the surgeon uses special instruments inserted through other small incisions. Guided by the video images, the surgeon removes the prostate through additional small incisions.

Thanks to advances in screening and treatment, prostate cancer – which affects as many as one in six men older than 40 – has become a disease that can often be cured.

Cutting recovery time

However, it still was expected to kill an estimated 30,000 men in the United States in 2005, accounting for almost 10 percent of all cancer deaths among men, and it is the second deadliest cancer for men

after lung cancer.

Early detection through screening for prostate-specific antigen, or PSA, is the key to curbing these statistics, said Dr. Claus Roehrborn, chairman of urology and holder of the E.E. Fogelson and Greer Garson Fogelson Distinguished Chair in Urology.

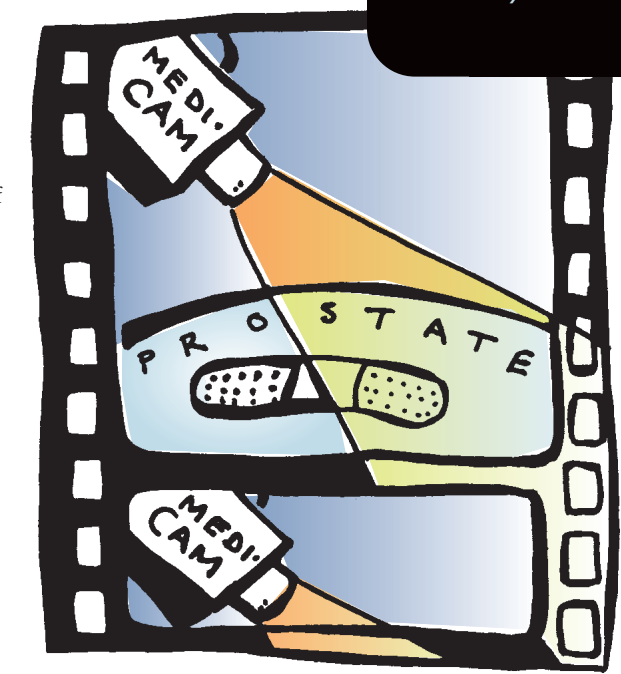
"We aim for a cure with surgery," Dr. Roehrborn said. "But one out of five patients will need other therapies as well. These patients will require radiation and hormone therapy to stop the cancer from growing and chemotherapy if everything else fails."

Detecting and curing aggressive cancer that cannot be held in check by prostatectomy is a major challenge. Researchers at UT Southwestern are trying to identify a biomarker that will discern this aggressive type of prostate cancer earlier, Dr. Roehrborn said. In high amounts in the blood serum, biomarkers indicate tumor activity.

Dr. Yair Lotan, assistant professor of urology, is working to build a large serum bank to help identify such biomarkers. The effort, however, will require a significant amount of time to initiate, first by enrolling patients who are at high risk for aggressive prostate cancer and then by collecting and evaluating multiple samples. ❧

For more information on laparoscopic surgery for radical prostatectomy, please call 214-645-8765.

"They are back to normal in two to three weeks after laparoscopic surgery, compared with four to six weeks after open surgery."  
—Dr. Jeffrey Cadeddu



By Kara Lindsley

**Fifty million** Americans live with chronic pain. Clifton Bise was one of them. An inoperable tumor in his spine, along with bull-riding injuries from his college days, had left him with chronic pain in his back.

"I was in so much pain that I had no life. I would just lie on the couch all day. I didn't have any motivation to get better because so many doctors had told me that they couldn't do anything for me. I was really pessimistic," he said.

A referral to the Eugene McDermott Center for Pain Management at UT Southwestern Medical Center eventually brought him relief. Dr. Joysree Subramanian, assistant professor of anesthesiology and pain management, performed a minimally invasive procedure called caudal lysis of adhesion.

"We removed scar tissue from his back to alleviate the pain," Dr. Subramanian said.

Two days after the procedure, Mr. Bise said he felt good for the first time in four years. But his treatment didn't end there.

## Pain, pain go away

"Living with pain for a long period of time is physically debilitating and emotionally stressful. Our program addresses all of the effects that chronic pain can have on a person's life –

physical discomfort, reduction in activity and emotional symptoms," said Dr. Leland Lou, associate professor of anesthesiology and pain management.

The McDermott Center employs a team of pain specialists who combine state-of-the-art medical, psychological and rehabilitative therapy with the latest advances in laboratory science. The mission is to reduce patients' suffering and disability, eliminate excessive reliance on medication and return them to a normal life.

With a referral from a primary-care physician, the pain management specialists, behavioral medicine specialists and physical therapists evaluate the patient and design a treatment plan based on the patient's specific needs.

"All of our doctors and professionals work under one roof as a team. This makes a difference to patients because they don't have to travel from doctor to doctor to continue their treatment," Dr. Lou said.

Behavioral medicine and physical therapy are vital components of the plan.

"Pain can cause significant changes in relationships with family, friends and co-workers. Patients can develop depression, anxiety and trouble sleeping. Our behavioral medicine experts teach stress management and relaxation techniques," Dr. Lou said.

Mr. Bise said he didn't realize how much his personality had changed because of his chronic pain. "Counseling really showed me what I needed to do to get back to normal."

Physical therapy provides patients with the tools to increase their range of motion, muscle strength, endurance and coordination and teaches them how to reduce tension.

Mr. Bise said physical therapy stretched him to his limits, but he's a better person for it.

He no longer needs medication for his back. He's back at work, enjoys riding his motorcycle, and goes hunting and fishing.

"I'm tickled to death with the McDermott Center. Can't thank my doctors enough," he said.☞

For more information on treatments for chronic pain, please call 214-645-8450.



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—Dr. Leland Lou