

SURGICAL STRIDES

Pioneering two new operations on the esophagus

These groundbreaking procedures can mean a quicker recovery for patients

Recently, surgeons at Monmouth Medical Center have been among the first to perform two rare and demanding procedures, each related to the esophagus:

DOING ESOPHAGECTOMY THE LAPAROSCOPIC WAY

Surgical removal of the esophagus—esophagectomy—is the treatment of choice for many of the 11,000 Americans each year who are diagnosed with cancer of the esophagus. It's also sometimes used for Barrett's esophagus and high-grade dysplasia, conditions in which cells have been transformed into a precancerous condition by prolonged contact with stomach acids.

The conventional procedure, using large, open cuts, has had a complication rate as high as 35 percent to 40 percent. But thanks to today's minimally invasive laparoscopic surgery and surgeons like Frank J. Borao, M.D., of Monmouth Medical Center, the odds of coming through unscathed are much improved.

Laparoscopic esophagectomy employs a small scope and tiny tools inserted through several small incisions to allow access and visibility. For patients, this means less blood loss, decreased postoperative pain, fewer complications, faster healing and shorter hospital stays, averaging about a week, compared with the three weeks' stay usually required for open surgery. Dr. Borao did his first laparoscopic esophagectomy two years ago, and he's the only New Jersey surgeon to have performed it.

"This is an extremely difficult procedure," says Michael A. Goldfarb, M.D., chairman of the department of surgery at Monmouth. "Dr. Borao can do it because of his extensive background in other laparoscopic operations. You can't just decide to do this. It's a progression after a surgeon masters the variations of gastric surgery."

In laparoscopic esophagectomy, the diseased portion of the foodpipe is removed through small holes in the neck, chest and belly. Then the surgeon pulls the healthy tissue of the stomach higher up into the esophagus or neck and reconnects it.

The complex operation can take from four to eight hours. The difficulty comes in part from operating in up to three different body sections, increasing the possibility of running into problems, Dr. Borao explains.

"There are only a handful of people in the country doing this totally laparoscopically," says Dr. Goldfarb, "and Dr. Borao's rate of complications is much lower than the national average."

Another key measure of success with this procedure is conversion rate, or how often an operation begins laparoscopically but then must be converted to open surgery with cuts. Dr. Borao's is very low. "We are successful more than 90 percent of the time in performing the operation using a minimally invasive approach," he says.

There's also the human element, of course. When patients have a high level of anxiety, Dr. Borao offers to put them in touch with other people who have undergone the procedure. "This support really puts them at ease and gives them a new perspective about what they should expect," he says.

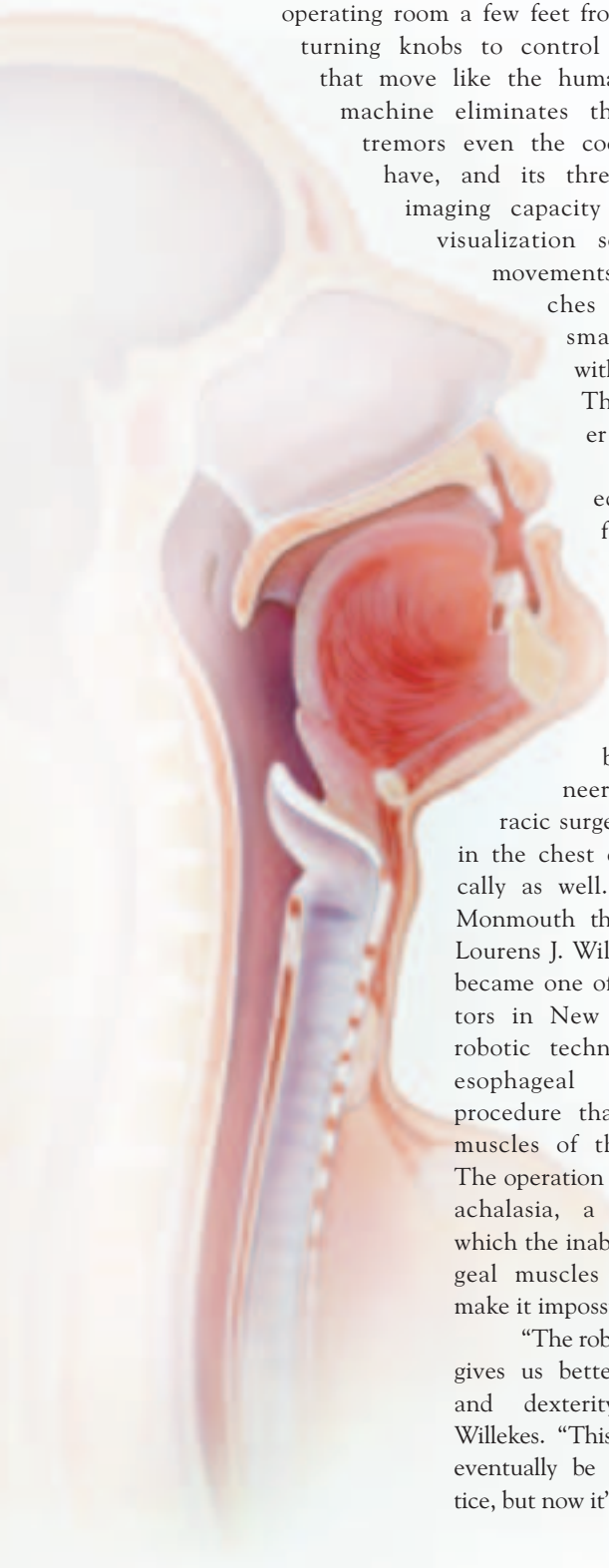
HOW ROBOTS PROVIDE A RISK-FREE ADVANCE

By now, most of us understand that robotic surgery doesn't mean an operation controlled by an independent, manlike machine. Instead, robotic technology is a sophisticated tool that extends the surgeon's reach and precision—and depends on the surgeon's own skill and savvy.

Doctors at Monmouth Medical Center employ the new da Vinci S Surgical System to perform a growing array of oper-



Frank J. Borao, M.D.



ations. The surgeon sits at a console in the operating room a few feet from the patient, turning knobs to control robotic arms that move like the human wrist. The machine eliminates the tiny hand tremors even the coolest surgeons have, and its three-dimensional imaging capacity can magnify visualization so that hand movements of several inches control much smaller motions within the patient. The result: greater precision.

While the equipment was first used for operations like prostatectomy and hysterectomy, the hospital has recently become a pioneer in doing thoracic surgery (operations in the chest cavity) robotically as well. Last August, Monmouth thoracic surgeon Lourens J. Willekes II, M.D., became one of the first doctors in New Jersey to use robotic technology for an esophageal myotomy—a procedure that divides the muscles of the esophagus. The operation is used to treat achalasia, a condition in which the inability of esophageal muscles to relax can make it impossible to swallow.

“The robotic technology gives us better visualization and dexterity,” says Dr. Willekes. “This approach will eventually be common practice, but now it’s cutting-edge.”

As he explains, esophageal myotomy is one of three kinds of thoracic surgery that can be done robotically. The others are lobectomy with lymph node dissection, in which a portion of the lung is removed to treat lung cancer, and mediastinal surgery, used to extract tumors in the central chest area. Dr. Willekes did Monmouth’s first robotic lobectomy last December. At presstime he was awaiting an appropriate patient for the first robotic mediastinal procedure.

Robotic thoracic surgery is an improvement on an improvement. A few years ago, the advent of a minimally invasive technique known as video-assisted thoracic surgery (VATS) worked a small revolution in these chest-cavity operations. Where the “open” procedure known as thoracotomy required a major incision in the chest and spreading ribs apart, VATS achieved the same results by introducing small, video-guided equipment through half-inch ports in the chest—reducing recovery times from about four weeks to five to seven days. But VATS still required direct manipulation by the surgeon.

Now, because robotic technology increases dexterity, it extends the range of procedures that can be done in a minimally invasive fashion, making this dramatically shorter recovery available to more patients. “With VATS you’re basically limited by operating with straight instruments of restricted dexterity,” says Dr. Willekes. “The robotic arm is much more similar to the human wrist, so it lets us do some of the larger procedures that once required open surgery.”

Robotics also has the potential to let a surgeon operate from miles away, if—and it’s a big “if”—someone at the bedside can position the robotic arms correctly. (While it wasn’t a thoracic procedure, the first transatlantic robotic “telesurgery” took place in 2001, when a surgeon sitting at a console in New York removed the gallbladder of a patient in France.)

But the real beauty of applying robotics to thoracic surgery, says Dr. Willekes, is that it’s an innovation that doesn’t add risk. The decision to “go robotic” can always be reversed if necessary. “If I have to convert to VATS or a thoracotomy, it doesn’t involve any extra incision,” says the surgeon. “We haven’t burned any bridges. We’re just reverting to a procedure that is still the standard of care.” ■



Lourens J. Willekes II, M.D.