Pushing the Limits

After surpassing the learning curve and getting comfortable with robotic surgery, we are doing more advanced procedures that bring the benefits of minimally invasive surgery to more patients. In this issue, we present three advanced robotic procedures: secondary debulking, esophageal resection and colon resection.

Ovarian cancer is the leading killer of women with gynecologic cancers. The majority of these patients have multiple recurrences and require multiple surgeries and chemotherapy. In the past, multiple laparotomies were difficult and lengthy. Getting through the adhesions took more time than performing the surgery. Many patients were never offered second or third surgeries for their recurrences.

With advanced planning, robotic secondary debulkings are possible and allow multiple interventions, leading to quicker recovery and quicker return to chemotherapy as adjuvant treatment. The perfect way to deal with recurrent ovarian, fallopian tube or peritoneal cancer is through minimally invasive surgery with good ability to debulk early recurrence and return patients to chemotherapy sooner. We have the tools and expertise necessary, and our success shows that it’s possible. We will soon be publishing our case successes.

Esophageal cancer is usually a difficult surgical experience for patients because abdominal and rib-splitting thoracic surgery is required. Our thoracic surgery team has developed techniques for doing these complex procedures robotically, from the resection to the gastric pull-ups, with excellent results. This is a true example of pushing the limits for the patient’s benefit. The goal is to get equivalent surgical removal of the tumor. In most cases, the result is not only equivalent but also extraordinary due to the magnification and wide margins achievable with robotic surgery.

Finally, our colorectal surgeons discuss robotic treatment of colon maladies. Again, this is a place where advanced planning can lead to quick surgery with adequate resection and, if necessary, easier reversals of colostomies. Treatment of diverticulitis and cancer seemed standard with laparoscopic surgery, but the increased maneuverability and margins achievable with robotic surgery are improving the results of colon and rectal surgery. Working in tight and deep spaces of the pelvis is difficult even in open cases, but robotic surgery has vastly improved access and movement into these tight spaces to allow for better surgery.

We hope these looks at advanced techniques continue to demonstrate that you can push yourself. Our experienced team can teach you or help your patients achieve a healthier life.

Ricardo Estape, M.D.
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Esophageal carcinoma is a rare condition, accounting for only 17,000 new cancer cases diagnosed in the U.S. each year.

Because the condition has few symptoms, by the time most patients with esophageal cancer see a physician, they have locally advanced carcinoma—a tumor that has spread beyond the margin of the esophagus. The mainstay of treatment for this stage of esophageal cancer involves surgery in combination with chemotherapy and radiation. Traditionally, this surgery involved an eight- to 10-hour open procedure with two or three large incisions in the chest and abdomen.

For select patients with early-stage esophageal cancer, conventional minimally invasive surgery remains an alternative to open surgical treatment. And now, using the latest robotic surgical techniques, surgeons at South Miami Hospital’s Center for Robotic Surgery can offer a less invasive approach to patients with more advanced cases of esophageal cancer.

“The robotic technique minimizes operative trauma, resulting in a shorter length of stay, less pain, less pneumonia and, ultimately, a quicker recovery for the patient,” says Mark Dylewski, M.D., thoracic surgeon.

NEW HOPE FOR COMPLEX CASES

Surgeons have been using a minimally invasive approach to esophagectomy—surgery to remove all or the diseased portion of the esophagus—for almost a decade. However, the rudimentary chopstick-like instruments used during laparoscopy make complex surgeries a significant challenge. In contrast, the robot’s microinstruments move in real time with the surgeon’s hands, making this procedure unproblematic. “In patients who are properly selected, the overall risk of complications ranges from 5 to 8 percent,” Dr. Dylewski says.

The results achieved by surgeons at South Miami Hospital’s Center for Robotic Surgery in surgically treated esophageal cancer patients compare favorably to large published studies. These studies show patients tend to do best having their operation at a facility that performs more than 10 esophageal cases per year, Dr. Dylewski says. Surgeons at South Miami Hospital perform an average of 25 to 40 major esophageal surgeries annually, with a mortality rate close to zero.

COMPLETE CARE

The multidisciplinary cancer team at South Miami Hospital has extensive experience combining preoperative chemotherapy and radiation treatment with robotic esophagectomy. The goal of this multimodality therapy is to “shrink” or “downstage” the cancer to improve the surgeon’s ability to remove all of the cancer and improve the patient’s long-term survival, Dr. Dylewski says.
IMPROVING QUALITY OF LIFE FOR PATIENTS WITH COLORECTAL CANCER

Over a lifetime, about one in 20 Americans will develop colorectal cancer. Fortunately, the death rate from this disease is decreasing, in part because of earlier detection and better surgical treatments.

Even when successful, surgery for cancers of the gastrointestinal tract is often life-altering. The procedures may leave patients with sexual difficulties and the need for bags or colostomies to remove waste. However, surgeons at South Miami Hospital’s Center for Robotic Surgery are using the latest technology to reduce these effects while effectively controlling cancer.

SPEEDING THE HEALING PROCESS

Though they’re often discussed as one disease, colon cancer and rectal cancer have differing treatments. Robotic surgery offers advantages for both, according to Henry Lujan, M.D., and Gustavo Plasencia, M.D., colon and rectal surgeons.

Colon cancer is usually treated with colectomy, or removal of the diseased part of the intestine. Depending on where the tumors are located, surgeons may resect either the right side (right colectomy) or the left side (sigmoid colectomy).

In either case, the healthy portions of the colon are reattached, a process made much easier with the wristed microinstruments of the robot.

“Suturing laparoscopically is very difficult and takes a long time to master. With a robot, it’s just like doing it with your hand,” says Dr. Lujan. This simplicity allows for easier healing and a faster return to normal bowel function.

MAINTAINING SEXUAL FUNCTION

Treatment for rectal cancer also depends on where the disease is located. For tumors near the upper portion of the rectum, surgeons perform a lower anterior resection, taking out the cancer, lymph nodes and some surrounding fibrous tissue while sparing the anus. Cancers that are lower are treated with abdominoperineal (AP) resection, removing the anus as well.

“The rectum is deep within the bony pelvis; it’s a space that is not very accessible for surgery,” Dr. Plasencia says. “The high-definition, three-dimensional visualization of the robot helps us preserve nerves, reducing the rate of impotence and other sexual effects.”

THE BENEFIT OF EXPERIENCE

“Robotic surgery carries all the benefits of minimally invasive surgery, including a shorter hospital stay, less pain and smaller incisions, which leads to less blood loss and fewer wound complications,” Dr. Lujan says.

Dr. Lujan and Dr. Plasencia have performed more than 175 of these procedures, making them experts in minimally invasive, robotic approaches to treating colorectal cancer. And as robotic technology improves, they expect ongoing tremendous advances in these treatments—with the goal of improving survival rates even more in the long run.
Robotic treatment of recurring ovarian cancer is not yet widely used, but surgeons at South Miami Hospital’s Center for Robotic Surgery offer this innovative option. Its advantages include a quicker recovery time, enabling patients to receive subsequent chemotherapy more rapidly.

The Center is the first to publish on the use of robotic technology to perform secondary debulking (or removal of cancerous tumors) in ovarian cancer patients. The manuscript was accepted for publication in the journal Gynecologic Oncology, and Ricardo Estape, M.D., medical director of South Miami Hospital’s Center for Robotic Surgery, presented its abstract at the Society of Gynecologic Oncology’s Annual Meeting on Women’s Cancer this year.

“The most common treatment for ovarian cancer is surgery and then chemotherapy,” says Gynecologic Oncologist Nicholas Lambrou, M.D. Despite the initial success of these treatments, the cancer returns in six months to four years later in about 50 percent of patients, adds Dr. Estape. In these cases, surgeons at South Miami Hospital can use robotic technology to treat the recurring cancer.

“We often look at ovarian cancer as a chronic disease versus something you’ll die from quickly,” says Dr. Lambrou. To treat the recurring cancer, Dr. Estape explains, patients usually have a laparotomy and tumor debulking performed multiple times, followed by more chemotherapy. Postsurgical recovery can take four to six weeks before patients can undergo chemotherapy. With each surgery, more adhesions and scar tissue are created.

Although secondary debulking via robotic surgery does not appear to change survival rates, it offers patients postsurgical advantages that traditional surgery cannot. The precise robotic technology uses smaller incisions and decreases scar tissue. Recovery takes only two weeks, according to Dr. Lambrou. Patients can more quickly begin chemotherapy and return to their normal routine.

The three-dimensional image delivered through robotic technology “provides a very accurate view of the tumor or tumors,” says Dr. Lambrou. This allows surgeons to evaluate the potential success for chemotherapy, adds Dr. Estape.

Patients must meet a few selection criteria for the robotic procedure. For example, the treatment is best for those with isolated lesions smaller than 8 cm and those without bowel obstruction. It also works most effectively in patients who were initially treated robotically or with adhesion barriers, says Dr. Estape.