

**St. Luke's
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SURGEONS



SURGICAL

QUARTERLY

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**MINIMALLY INVASIVE
SURGERY UPDATE**



GI SURGERY



DR. GOTTESMAN



THE TILSON LAB

Continuum
Health Partners

MINIMALLY INVASIVE

Surgeons performing minimally invasive procedures at St. Luke's - Roosevelt Hospital have garnered regional, national and even worldwide recognition over the past two years. The world's first robotic-assisted thymectomy and robotic-assisted esophageal tumor resection were both performed here at this institution.

This spirit of innovation continues in the laboratory, where our surgeons and residents are busy at work developing new techniques. With over 90% of SLR surgeons offering minimally invasive procedures, our institution has truly embraced this exciting technology.

Dr. Jerald Wishner recently completed the world's first totally laparoscopic omental harvest for use as a free flap in reconstructive surgery. By using laparoscopic technology, Dr. Wishner removed a portion of this well-perfused, fatty protective layer of the bowel by making only a few small incisions in the patient's abdomen.

Dr. Cliff Connery, Chief of the Division of Thoracic Surgery, reports a dramatic increase in the number of video-assisted thoracoscopic procedures for both diagnosis and therapeutic resection of pulmonary disease over the past three years. In addition, SLR thoracic surgeons now use minimally invasive techniques to perform larger lung resections through much smaller incisions than would have been possible otherwise. Overall, 75% of all thoracic operations performed at St. Luke's-Roosevelt Hospital employ thoracoscopic techniques, either as a primary modality or as a supplementary one, such that larger resections may be performed without requiring traditional thoracotomies.

Dr. Richard Marks, Vice-Chairman of the Department of Surgery, continues to perform the largest number of adult laparoscopic hernia repairs yearly in the State of New York. He has held this distinction for the last three years and as of now has performed almost two-thousand repairs. His low recurrence rate is equally impressive. While other centers report 2-3% hernia recurrence, less than 0.5% of Dr. Marks' patients suffer recurrent hernias after his laparoscopic repair.



ABOVE: DR. RICHARD MARKS CONCENTRATES ON POSITIONING A PIECE OF MESH PRECISELY OVER A HERNIAL DEFECT.

BACKGROUND: A PIECE OF MARLEX MESH IS TIGHTLY ROLLED OVER A LAPAROSCOPIC INSTRUMENT TO PREPARE IT FOR INTRACORPOREAL INSERTION.



ABOVE: DRs. JOSEPH DEROSE (LEFT) AND ROBERT ASHTON (RIGHT) PERFORM ROBOTICALLY-ASSISTED CARDIAC SURGERY.



RIGHT: DR. JERALD WISHNER PERFORMS LAPAROSCOPIC NISSEN FUNDOPPLICATION FOR TREATMENT OF GASTROESOPHAGEAL REFLUX DISEASE.

SURGERY UPDATE



THE PATIENT WHOSE ANGIOGRAM AND X-RAY ARE PICTURED ABOVE HAD HIS AORTIC ANEURYSM AND LUNG CANCER CURED AND SPENT ONLY 5 DAYS IN THE HOSPITAL.

The benefit of minimally invasive surgical therapy for a variety of disorders was recently illustrated in the case of a 60 year old gentleman who came to SLR to have his abdominal aortic aneurysm repaired. As part of his routine pre-operative screening, he had a chest x-ray, which revealed an isolated lung nodule consistent with cancer. He underwent minimally invasive endovascular repair of his aortic aneurysm and was discharged on the second post-operative day. Two weeks later, he was re-admitted and underwent removal of the lung tumor using minimally invasive video assisted thoracoscopic technology. He was discharged on the third day after this operation.

Today the patient enjoys his active lifestyle, following minimally invasive correction of his potentially deadly aortic aneurysm and early detection and minimally invasive removal of what proved to be a small, localized lung cancer. What would previously have required several large, painful, and debilitating incisions across the abdomen and chest, a long hospital stay and a lengthy recovery at home, has been replaced by a few small incisions and a total of five days in the hospital.

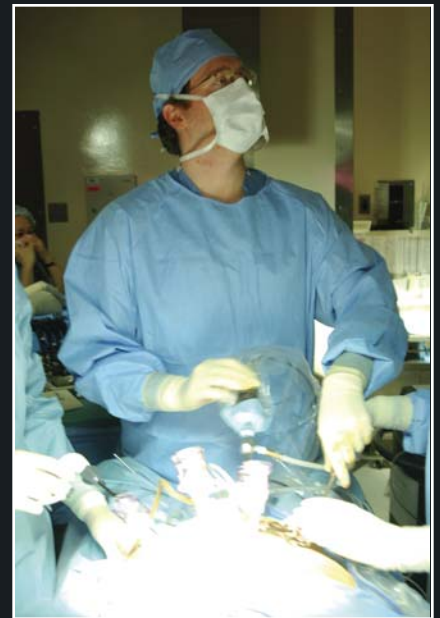
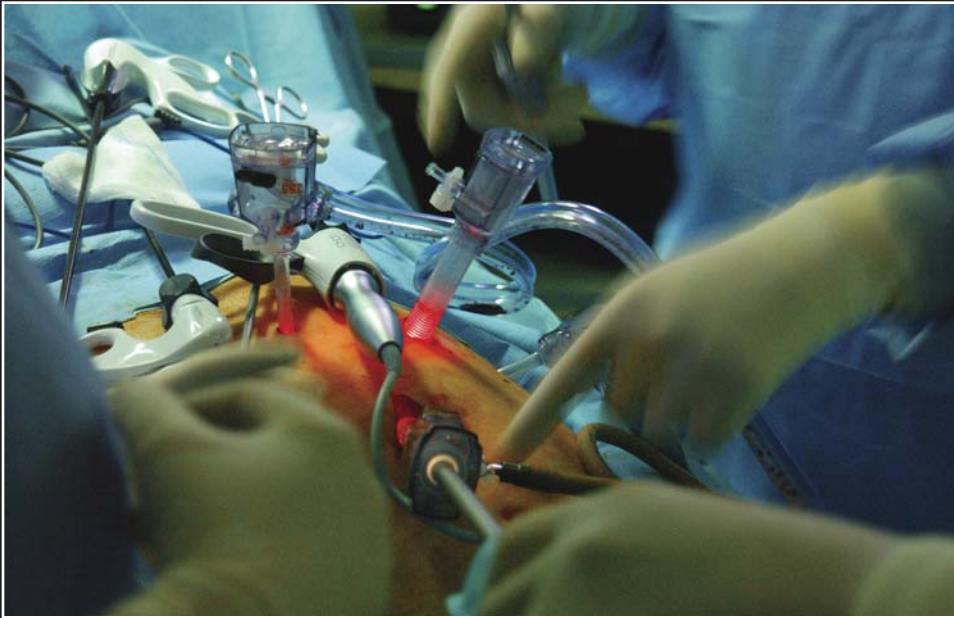


LAPAROSCOPIC SPLENECTOMY REQUIRES 4 SMALL INCISIONS (1/2" LENGTH) INSTEAD OF ONE LARGE INCISION ACROSS THE ABDOMEN.

The benefits of laparoscopic techniques are more than just physiologic. An improved post-operative cosmetic appearance relative to traditional methods is an undeniable advantage of this new technology. Scars are smaller and generally located in less obtrusive locations than before. Our surgeons have performed laparoscopic splenectomies on many young women with idiopathic thrombocytopenic purpura who have failed medical treatment, using four tiny incisions measuring a centimeter or two. While the traditional incision may have been disfiguring and painful, these individuals typically went home on the second day after surgery and quickly returned to all of their daily activities.

The surgeons at St. Luke's - Roosevelt Hospital hope to continue providing cutting-edge treatment to those that come under their care. Minimally invasive technology will certainly play an important and ever-expanding role in achieving that goal.

ROBOTIC AND LAPAROSCOPIC GI SURGERY



ALTHOUGH ALL OF THE ACTION IN A LAPAROSCOPIC NISSEN FUNDOPPLICATION APPEARS TO BE IN FULL VIEW ON TOP OF THE PATIENT'S ABDOMEN (LEFT), DR. WISHNER KEEPS A CAREFUL EYE ON THE TELEVISION MONITOR SHOWING THE ACTUAL OPERATION, WHICH OCCURS APPROXIMATELY 20 CM AWAY. (RIGHT)

Surgeons of the St. Luke's - Roosevelt Department of Surgery perform operations employing "minimally-invasive" technology to treat diseases of the entire gastro-intestinal tract. By using the newest techniques and equipment available, our surgeons decrease peri-operative morbidity, length of hospital stay and the time required for a full return to all activities.

Drs. Robert Ashton and Cliff Connery brought St. Luke's-Roosevelt Hospital Center to the forefront of minimally invasive techniques in thoracic surgery by advancing the use of robotic technology in the treatment of diseases involving the esophagus. Dr. Ashton was instrumental in designing the current worldwide standard

method of robotically-assisted esophagectomy for the treatment of esophageal cancer.

By employing the increased dexterity of robotic instruments, the surgeon mobilizes the esophagus using several small incisions, in lieu of the much larger thoracotomy incision used in many instances. This modification offers decreased morbidity, particularly from pulmonary complications, less post-operative pain, a reduced length of hospital stay, and a decrease in time needed for recuperation.

Other robotically-assisted thoracic procedures performed at our institution include the Heller myotomy for treatment of achalasia and excision of esophageal duplication cysts. This past Fall, Drs. Connery

and Ashton completed their first series of robotically-assisted Heller myotomies without any complications and now consider robotically-assisted esophageal duplication cyst excision to be technically easier and superior to thoracoscopic techniques.

Dr. Ashton and Dr. Jerald Wishner, Director of Laparoscopic Surgery, both offer minimally invasive Nissen fundoplication for treatment of gastroesophageal reflux disease. Dr. Wishner has performed laparoscopic Nissen fundoplication at SLR since 1995. Over the past three years, he has seen a ten-fold increase in the number of laparoscopic Nissen fundoplications as a result of the gastroesophageal reflux ulcer disease initiative started at St. Luke's-Roosevelt Hospital. In addition, Dr. Wishner

offers laparoscopic colectomy in selected patients, including those with malignant disease. Dr. Mitchell Bernstein of the Department of Colorectal Surgery uses laparoscopic techniques for colonic diversion in cancer patients prior to radiation treatments.

Because of the many improvements associated with applying minimally invasive technology to the treatment of gastro-intestinal tract disease, further extensions in the application of these techniques are surely imminent. We hope to continue in our position at the crest of this movement in the years to come.



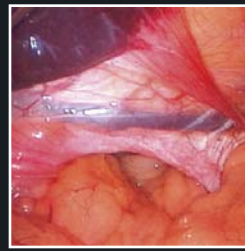
ATTENTION TO EXTERNAL LANDMARKS AND CAREFUL MEASURING INSURE EXACT PLACEMENT OF ROBOTIC AND LAPAROSCOPIC PORTS.



A SURGEON POSITIONS ONE OF THE ROBOTIC PORTS IN PREPARATION FOR AN ESOPHAGEAL MYOTOMY.

AUTHOR: DR. CHARLES RO

LAPAROSCOPIC NISSEN FUNDOPLICATION



1. THE CAUDATE LOBE OF LIVER WITH GASTRO-HEPATIC OMENTUM IS IDENTIFIED, 2. THE ESOPHAGUS IS DISSECTED AND STOMACH MOBILIZED. 3. THE FUNDUS OF THE STOMACH IS WRAPPED TO ITSELF AROUND THE BOTTOM OF THE ESOPHAGUS.

Chronic heartburn is a common problem in the United States affecting millions of Americans. In many cases this is the result of Gastroesophageal Reflux Disease or "GERD." In patients with GERD, acid flows up into the esophagus from the stomach. This occurs when the "one-way valve" between the esophagus and the stomach fails. The presence of gastric acid in the esophagus causes the symptoms of heartburn, and may lead to bleeding, ulcers, stricture formation or cancer.

Dietary modification and medications may be used to reduce symptoms. Unfortunately most patients require continuous therapy and experience rapid recurrence of symptoms if even a few days are missed. The long term effects of these medications are unclear. Surgical repair or "fundoplication" currently offers the only way to fix the underlying problem. The "one-way valve" is restored, preventing acid reflux and allowing discontinuation of medication. Patients achieve the maximum benefit if surgery is performed prior to the development of complications such as stricture, Barrett's Esophagus or cancer.

While fundoplication has been a surgical option since the 1950's, advances in technology now allow surgeons to perform this procedure laparoscopically. Minimally invasive techniques now allow the same repair through four or five small incisions measuring approximately 0.5 to 1.0 cm in length. Most patients are discharged in one or two days and return to normal activity in two weeks.

Dr. Gottesman



DR. GOTTESMAN PERFORMS A COLORECTAL SURGICAL PROCEDURE.

Dr. Lester Gottesman is scheduled to sit on four panels as an expert on anal intra-epithelial neoplasia (AIN) in the next year, but he does not know what he is going to say. "People are looking to me for answers," he explains, "but the question I am working on is 'What are the right questions?'" Given his national reputation as an expert on sexually transmitted diseases of the colon, rectum and anus, it is not surprising that the medical community turns to Dr. Gottesman when faced with this complicated disease.

AIN has reached epidemic levels in the U.S. Like cervical intra-epithelial neoplasia, AIN is associated with sexually transmitted diseases and especially with the HPV and HIV viruses, which seem to "turn on oncogenes" and increase a patient's risk for a variety of malignancies.

Dr. Gottesman was one of the first to treat AIDS patients, even before their survival improved with the anti-retroviral medications. His numerous journal articles, textbook chapters, and his recent appointment

to the Editorial Board of the journal "Diseases of the Colon and Rectum" are indicative of the respect that he has earned from his peers. As he gained renown for treating the most difficult cases, Dr. Gottesman also developed a world-class laboratory to investigate some of the most physiologically complex aspects of anal disease.

Here at SLR, he researches the physiology of the anus with regard to intervention and the role of drugs altering immunosuppression in this delicate environment. The lab is actively investigating fecal incontinence, which is important to his AIN patients as well as to the increasing number of women suffering post-partum injuries. With increasing birth weights and neonatal head circumference, the mother's pelvis is subjected to higher stresses and risks of injury. Women may experience fecal inconti-

nence as an acute or a delayed result. Dr. Gottesman envisions a comprehensive incontinence center that combines colorectal, gynecological and rehabilitation services. The center is becoming a reality as doctors in these different disciplines work more closely together. Dr. Gottesman strives to give structure and consistency to these collaborations.

While Dr. Gottesman is pursuing all the right questions, he is also dedicated to teaching what he calls "surgical intuition." He commits time each week to discussing cases and management with the residents in general surgery. He is a central force in the colorectal surgery fellowship at Roosevelt Hospital and is fundamentally committed to an open, honest and challenging exchange of ideas, "making learning the ultimate priority."



DR. GOTTESMAN TAKES A BREAK BETWEEN CASES IN ONE OF THE COLONOSCOPY SUITES.

THE TILSON LAB

The St. Luke's - Roosevelt Department of Surgery takes great pride in counting amongst its members Dr. Martin David Tilson III, an internationally recognized pioneer and ongoing contributor to our understanding of aortic aneurysms. In his distinguished career, Dr. Tilson not only enriched the academic world's concept of this life-threatening disease, but also inspired many young surgeons as they worked with him in the research laboratory that he has overseen during his time at our institution.

Dr. Tilson's academic interests evolved from a B.A. in Philosophy at Rice University in 1963. He embarked upon his medical education at Yale, where he earned his M.D. in 1967. Dr. Tilson stayed in New Haven for his surgical training and ultimately rose to the ranks of Professor and Chief of the Vascular Service. His initial research interests involved the study of intestinal adaptation, cell kinetics and compensatory hypertrophy of the gut. After a brief hiatus as a Major in the Medical Corps in the USAF Hospital at Westover Air Force Base, he returned to academia with research interests focused on aneurysmal disease. He was elected to the Society of University Surgeons in 1976, appointed to the Board of Governors of the American College of Surgeons in 1980 and elected to the Society of Vascular Surgery in 1981. The St. Luke's - Roosevelt Department of Surgery recruited him in the late eighties and he was honored as the Ailsa Mellon Bruce Professor of Surgery at Columbia University in 1989. Recently, Dr. Tilson was selected for inclusion in the first editions of two publications honoring exceptional individuals, One Thousand Great Americans and Living Legends.

In the early 1980's, Dr. Tilson's research group was the first to report instances of familial clustering of abdominal aortic aneurysm (AAA). Today, as it is widely accepted that there is an inherited risk factor in this disease process, several laboratories around the world have joined the race to identify the AAA gene. In 1995, while Dr. Tilson chaired a symposium sponsored by the New York Academy of Sciences on the subject of AAA, his laboratory presented preliminary data implicating the gene HLA-DR-B1-15. This finding was confirmed by geneticists studying large populations in Japan and at the Mayo Clinic. Dr. Tilson's laboratory demonstrated this same HLA-DR haplotype in a gorilla (aneurysms are the second-leading cause of death in the Western Lowland Gorilla) who ruptured an aneurysm while at the San Diego Zoo.

His current projects are extensions of the discovery that tissue-specific aortic antigens may be "self" recognized proteins that are the subjects of an auto-immune attack in AAA disease. Present experiments suggest that AAA is an

auto-immune disease of maturity, with pathological features similar to that of rheumatoid arthritis and multiple sclerosis.

Dr. Tilson's recent work examined several thousand genes expressed by fibroblasts cultured from human aneurysmal aortas and discovered a new type of collagen. Collagen XI is a constituent of the normal human aorta and its expression may be upregulated in aneurysmal disease.

This research continues with yet another productive year and the laboratory is presently preparing several manuscripts for presentation at national and international scientific meetings. The information generated by Dr. Tilson's work, in turn, brings closer the day when there will be new alternatives to conventional or endovascular surgery as treatment of AAA disease.



DR. TILSON EXAMINES ELECTROPHORESIS RESULTS IMPLICATING A NEW PROTEIN IN ANEURYSM DEVELOPMENT.

St. Luke's Roosevelt

**St. Luke's - Roosevelt
Hospital Center**
*University Hospital of
Columbia University
College of Physicians and
Surgeons*

1000 Tenth Avenue
New York, NY 10019
(212) 523 - 7780
newsletter@slrsurgery.org

**George J. Todd,
M.D., F.A.C.S.**
*Chairman, Department
of Surgery
Faculty Sponsor*

Scott Belsley, M.D.
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Authors:



Minimally Invasive Surgical Update:
Frank Ciminello, M.D.



Robotic and Laparoscopic GI Surgery:
Charles Ro, M.D.



Dr. Gottesman:
Laura Withers, M.D.



Tilson Lab:
Scott Belsley, M.D.



A VIEW FROM MORNINGSIDE PARK SHOWS ST. LUKE'S HOSPITAL
AFTER A WINTER HOLIDAY SNOWSTORM.

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