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Robotic Technology in General Surgery Procedures – Including Innovative Single-Incision Cholecystectomy

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Overview



Charles J. Yeo, MD, FACS

Samuel D. Gross Professor and Chair, Department of Surgery

Honor Roll!

Congratulations to the faculty, staff, residents and fellows here at Jefferson. We have achieved a distinction obtained by less than 0.5% of all American hospitals – this July we were notified that we have joined the *U.S. News & World Report Best Hospitals Honor Roll*. This represents a major accomplishment, led and enabled by Thomas Jefferson University Hospitals President David McQuaid, FACHE, and Jefferson Medical College Dean Mark Tykocinski, MD, and brought to reality by the many Jeffersonians who contribute to patient care at Jefferson. This is a big deal. Enjoy it!

We in the Department of Surgery touch many of the 12 specialty areas ranked as the nation's best such as Orthopedics (#7), Pulmonology (#14), Cancer (#17), Diabetes and Endocrinology (#18), Gastroenterology (#21), Gynecology (#28), and Neurology/Neurosurgery (#32). Our Acute Care Surgery Division cares for surgical patients in all these specialty areas, and our thoracic and transplant surgeons, general surgeons, colorectal surgeons, and minimally-invasive surgeons serve patients with cancer, chest diseases and alimentary tract diseases. So, although "Surgery" per se has never been a specific and defined component for the 24 years of rankings, we should all be proud of this recognition.

The Jefferson medical community will persist in our efforts to achieve superior patient care, focused innovative research and exceptional educational opportunities for our student and resident learners.

The Honor Roll. This is a big deal! Now, the bar is set high – and we must redouble our attention to quality initiatives, patient safety, compassionate care at the highest level, and innovation in the clinics and the labs. We want to become a fixture of the **Honor Roll**.



Robotic Technology in General Surgery Procedures – Including Innovative Single-Incision Cholecystectomy

Since their introduction some 30 years ago, laparoscopic techniques have become the standard for a number of general surgery procedures – enabling patients to enjoy less scarring, shorter hospital stays and faster recoveries. Today, Jefferson surgeons are using the latest robotic technology to perform many laparoscopic procedures, including adrenalectomy, cholecystectomy (gallbladder removal), Heller myotomy, liver resection, thymectomy, repair of hiatal hernia, and distal pancreatectomy for tumors in the tail of pancreas.

At this time, six surgeons in the Department of Surgery are using the robot, which is manufactured by da Vinci®. They include **Karen Chojnacki, MD, FACS**, Associate Professor and Residency Program Director; **Cataldo Doria, MD, PhD, FACS**, Nicoletti Family Professor of Transplant Surgery and Director, Division of Transplantation Surgery; **Nathaniel R. Evans, MD, FACS, FCCP**, Assistant Professor, and Director, Minimally Invasive Thoracic Surgery Program; **Francesco Palazzo, MD, FACS**, Assistant Professor and interim Vice Chair, Department of Surgery; **Michael J. Pucci, MD**, Assistant Professor; and **Ernest (Gary) Rosato, MD, FACS**, Professor and Director, Division of General Surgery. At Jefferson, the robot was first used for general surgery procedures in 2007 – to date over 115 robotic general surgery procedures have been performed. In early September 2013, Dr. Palazzo completed the first general surgery robotic procedure – a cholecystectomy – at Methodist Hospital where he is the interim Chief of Surgery.

SingleSite® Surgery

Jefferson is among the first hospitals in Philadelphia to use da Vinci® SingleSite® Surgery – which allows surgeons to perform a cholecystectomy with a single, two-centimeter incision in the patient's belly button. As Dr. Chojnacki explains, the da Vinci system delivers a magnified, three-dimensional and high-definition view and includes instruments suitable for single-site surgery.

Dr. Chojnacki notes that the single-site instruments are not yet as sophisticated as those she and her colleagues use with the robot during traditional laparoscopic procedures: "When using the robot with multiple incisions, the wristed instruments

Clinical Integration



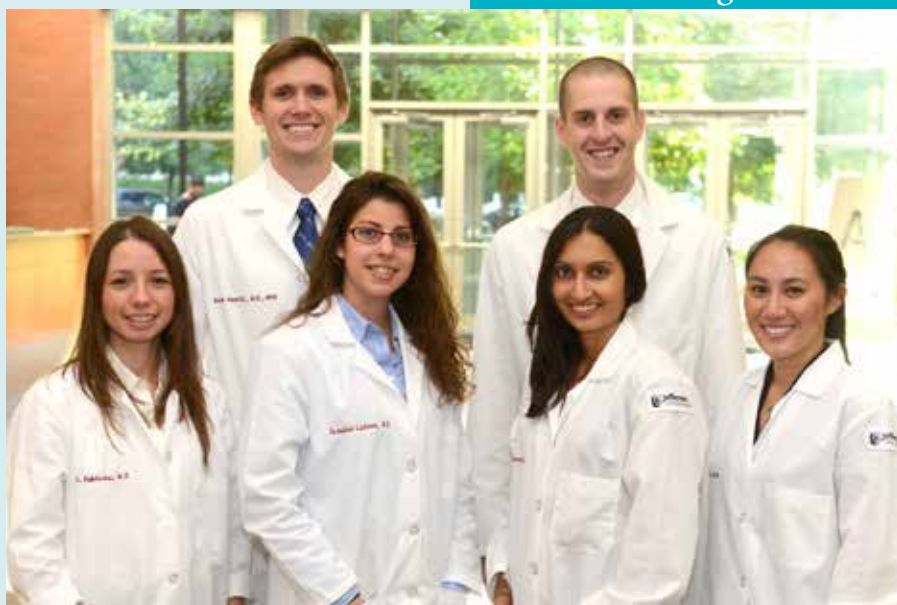
Surgeons Cataldo Doria, MD, PhD, Karen Chojnacki, MD, Harish Lavu, MD, Francesco Palazzo, MD and Michael Pucci, MD utilize the da Vinci® Surgical System (shown in the background) for a variety of general surgery procedures.

actually offer a higher degree of freedom than the human wrist. At present, the single-site instruments have only two degrees of freedom, but we expect the wristed instruments to be available in the future."

Results for single-incision cholecystectomy have been excellent. Among the potential benefits: a low rate of major complications and a low conversion rate to open surgery. While the small "keyhole" scars of multi-port laparoscopic surgery were once considered a breakthrough, single-incision surgery through the navel can virtually eliminate surgical scarring.

To date, the Food and Drug Administration (FDA) has approved da Vinci® SingleSite® Surgery only for gallbladder removal, benign hysterectomy, and removal of the fallopian tubes and ovaries (salpingo-oophorectomy). But Dr. Chojnacki believes there is tremendous potential for single-incision surgery: "As the technology improves, there will clearly be opportunities to use this technique for gastrectomies (stomach resection), liver resection, bile duct procedures and pancreatectomy," she says. "The possibilities are virtually limitless."

Meet Our Surgical Interns



The Department has welcomed an impressive new group of categorical interns, selected from over one thousand applicants to our program. These doctors, who recently matched with Jefferson, started on June 20, 2013. Just a few months into their Jefferson surgical residency, we have all noticed their dedication to patient care, their energy and their excitement in joining the Jefferson community.

Front row: **Katerina Dukleska, MD**, University of Medicine and Dentistry of New Jersey; **Jessica Latona, MD**, University of Medicine and Dentistry of New Jersey; **Anisha Kshetrapal, MD**, Florida International University, **Allison Aka, MD**, Loma Linda University.

Back row: **Brock Hewitt, MD**, Texas Tech University and **Andrew Brown, MD**, Jefferson Medical College.

We are also pleased to welcome back the following Jefferson Medical College 2013 graduates as preliminary interns in general surgery: **Harold Hsu, MD** and **Wei Phin Tan, MD**.