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in robotic colorectal surgery

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surgical, interventional,
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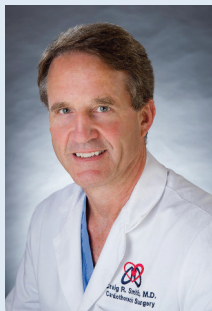
winter 2012 healthpoints

ALL THE POSSIBILITIES OF MODERN MEDICINE



COLUMBIA UNIVERSITY
MEDICAL CENTER

Department of Surgery
In affiliation with
NewYork-Presbyterian Hospital



Greetings

Message from the Chairman

As the new year unfolds, I want to thank the faculty and staff who have given so much during 2012. Many of our cardiothoracic surgeons played key roles in the American Heart Association conference and the Transcatheter Cardiovascular Therapeutics conference, demonstrating their continued leadership in conventional, hybrid, and interventional procedures. Numerous divisions have established new programs, including the Vein Center in the Division of Vascular Surgery and the new Price Family Center for Comprehensive Chest Care in Thoracic Surgery. Meanwhile, the Medical ECMO program continues to expand rapidly. In this issue of healthpoints, readers will

meet **Drs. Steven Lee-Kong** and **Isaac George**, who are among this year's new faculty. Welcome to all our new faculty, and I wish all readers a happy, healthy year ahead. ■

Craig R. Smith, MD
Chairman, Department of Surgery



New Faculty Profile: Steven Lee-Kong, MD

Division of Colorectal Surgery welcomes talented new surgeon.

In response to a continuous increase in patient volume, the Division of Colorectal Surgery embarked on a quest to find the right surgeon to join its team. Acting Chief, **Daniel Feingold, MD**, would be

highly selective during the process, seeking a special candidate who would bring both surgical expertise as well as the right personal qualities to help expand the division and to offer patients the level of compassion that is expected at NYP/Columbia. It is with great pleasure that the division announces the selection of **Steven Lee-Kong, MD** for this position.

Dr. Lee-Kong has received extensive and advanced training, having completed special fellowships at NYP/Weill Cornell Medical Center and Memorial Sloan-Kettering Cancer Center. One area of expertise is in robotic colorectal surgery, an emerging technology which is currently unavailable in most centers. Upon his official credentialing (expected in

February 2013), Dr. Lee-Kong will be the only surgeon trained to perform robotic colorectal surgery at NYP/Columbia.

Robotic assistance gives colorectal surgeons important technical advantages. According to Dr. Lee-Kong, "The procedure allows a very stable view of the pelvis, which is better than with hand-held cameras which shake. It also gives us binocular vision—meaning magnified, 3-dimensional views. Third, the instrumentation is 'wristed,' which allows for more flexible range-of-motion during surgery."

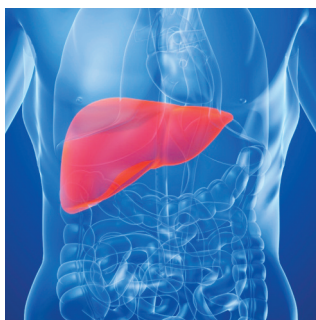
While these features are helpful to the surgeons, more importantly, Dr. Lee-Kong believes that they translate to better surgical outcomes for patients. "There are nerves in the pelvis that control sexual and bladder function. This technology allows us to more carefully identify and preserve those nerves in the mesorectal plane," he explains. Benefits to patients undergoing colorectal surgery are under study in clinical trials, including a multi-center trial comparing the outcomes of robotic and conventional techniques. Because

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- *Over 3 million people in the U.S. have chronic hepatitis C.*
- *Chronic infection can lead to cirrhosis, liver cancer, and liver failure.*
- *Hepatitis C is the leading cause of liver transplantation.*
- *Standard therapy has a cure rate of about 40% in genotype 1, the most common form of hepatitis C.*

Hepatitis C

New classes of medications signify a sea change in therapeutic options.

Since 1998, patients with hepatitis C have had essentially one treatment option: the standard combination of pegylated interferon with ribavirin. While this combination offered a cure rate of about 80% for certain patients, those with genotypes 2 and 3, its cure rate among the most common group, patients with genotype 1, hovered at about 40%. And many patients including those who couldn't tolerate that regimen were essentially out of luck, with no other therapy available.

According to **Robert S. Brown Jr., MD, MPH**, *Director of the Center for Liver Disease and Transplantation*, the therapeutic landscape is shifting significantly due to the advent of several new classes of medications that act directly on the virus (Direct-Acting Antivirals or DAA). One class, which includes the FDA-approved protease inhibitors telaprevir and boceprevir, has proven effective enough that the currently recommended standard of care therapy now incorporates one or the other agent in combination with interferon and ribavirin. "The new medications are very potent and effective in clearing the hepatitis C virus," says Dr. Brown. In combination with the older drugs, the addition of either protease inhibitor increases the cure rate to about 80%, in only six months of therapy, in the majority of patients.

This represents a very important advance, according to Dr. Brown. Nevertheless, there is considerable room for improvement. Protease inhibitors have a high rate of resistance, which means that they require the addition of other drugs such as interferon for them to work. They also interact with many other drugs, including the medications required after liver transplantation. Thus, patients who must take these medications, often the sickest, cannot. Furthermore, the medications fail to help many patients who previously failed to respond to standard therapy, and, since they currently require interferon and ribavirin, the new drugs do nothing to help the large number of patients who cannot take these drugs due to their side effects.

Despite these limitations, Dr. Brown is very optimistic about the way that these and other emerging DAA therapies are providing new options, especially to the sickest patients. In addition to the protease inhibitors, other classes of drugs

that inhibit the growth or replication of the hepatitis C virus are in development and under active study, both at NewYork-Presbyterian Hospital and elsewhere. These include nucleotides, potent drugs that have little resistance and few drug-to-drug reactions with a low profile of side effects; non-nucleotides, which are less potent and do develop resistance; a class called NS5A inhibitors, which develop resistance but can be a useful component in a multidrug regimen; and others.

"The new direct-acting antiviral drugs are not just less toxic and more potent than older drugs," says Dr. Brown. "The issue is resistance. Interferon and ribavirin weren't working directly against the virus, whereas the newer ones are. Moreover, some of the new drugs are 'pangenotypic': they work on all six types of the virus."

Proof of Principle: A Cure without Interferon

Telaprevir and boceprevir have not only boosted cure rates when added to interferon and ribavirin, but other DAA combinations have been proven to cure a certain segment of patients without interferon. Although the percentage is relatively low, about 30% in certain patients, newer studies have shown rates approaching 100% with multi-drug, all-oral, interferon free regimens. Though the data remains preliminary and the drugs are not yet FDA approved, Dr. Brown explains that the ability to cure patients without interferon represents a very important advance that holds great promise. He believes that it is only a matter of time before effective interferon-free therapy will be available in wider groups of patients. This will be very important, given interferon's substantial side effects: flu-like symptoms, decreased blood counts, worsening of depression, and in patients with advanced liver disease, an association with liver failure.

Trials of interferon-free regimens are currently underway at the Center for Liver Disease and Transplantation. In addition to their potential to yield new therapies for patients with hepatitis C, they may also improve the options available for patients with the virus who undergo liver transplantation for liver cancer. In the past, it has been shown that 12 weeks of interferon-based therapy followed by liver transplantation would cure up to 80% of patients of hepatitis C. The

problem was that most patients could not tolerate the pre-transplant interferon therapy. At this time, preliminary data suggest that most people can tolerate one of the new drugs, GS7977, and that it can suppress hepatitis C to undetectable levels in most patients. Studies at the Center will see whether the drug is effective in maintaining viral clearance after the transplant.

"These are preliminary studies, but I am very pleased that therapies are being offered to patients who have never before been offered earlier access to new drugs in clinical trials," says Dr. Brown. "In the past, drugs have typically been tested first in the healthiest patients, so it is good to see that patients in the greatest need have access to earlier therapy. So far it appears that the nucleotide class of drugs are well-tolerated, have fewer drug-to-drug interactions, and so if they can cure a substantial number of patients, this will meet an enormous medical need."

Preventing Relapse

Patients are considered cured if they remain free of the hepatitis C virus for six months after therapy is stopped. With triple therapy, the relapse rate is less than 10% within six months. After 6 months, a far smaller number of patients, less than 1%, will undergo a late relapse in the next 5 to 10 years. In patients who do not undergo transplantation, the new drugs clear the hepatitis virus in 80-90% of patients. It is unknown whether that response will be maintained if the liver is removed during transplantation, says Dr. Brown. Studies will need to determine whether patients remain cured of hepatitis long-term after transplant surgery.

In summary, Dr. Brown reiterates his optimism about the prospects for the future. "For many years, the question was 'can we' cure hepatitis in all patients. Now, the big question is not whether, but when will we achieve that goal. The addition of new classes of medications means that we are now working to match the right regimens for each class of patients, which includes consideration of cost, in order to cure everyone. Some patients may be able to be treated with simpler regimens while other, more difficult-to-treat patients, may require different regimens or longer treatment times." ■

To learn more, visit: www.livermd.org

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of his training in this specialty, Dr. Lee-Kong will be responsible for evaluating and adopting new technologies for the application of colorectal surgery in the division.

Dr. Lee-Kong is also highly trained in advanced surgery for inflammatory bowel disease, which includes ulcerative colitis and Crohn's disease. During his fellowship at Weill Cornell Medical College, he performed a high volume of surgeries in patients with Crohn's disease, many of whom require surgery of the colon, rectum, or anus. He also collaborated in the care of many patients with ulcerative colitis, which can be managed without surgery in many cases but which sometimes requires removal of the colon and rectum. "Dr. Lee-Kong's significant experience in treating complex IBD will bolster the division's ability to care for patients with this challenging condition," says Dr. Feingold.

In addition to his exceptional technical skills and excellent judgment, Dr. Lee-Kong is compassionate when he interacts with patients and their families, says Dr. Feingold. "It is very important to him that not only should his patients do well clinically, but that they should enjoy less stress as they are going through the care process. He is personable and goes out of his way to be kind to everybody he comes into contact with. ■

Learn more about colorectal surgery at www.columbiasurgery.org or by calling 212.342.1155



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Save the Dates

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Breast Cancer Management 2013 — February 1, 2013

Hypertrophic & Restrictive Cardiomyopathy:

Genetics, Imaging, and Emerging Treatments in Adult and Pediatric Patients — March 13, 2013

Pediatric and Adult Congenital Cardiac Critical Care — March 21, 2013

2nd Annual Peter D. Stevens Course on Innovations in Digestive Care — April 25-26, 2013

11th Annual Innovations & Controversies in Complex Vascular & Endovascular Interventions — May 9-11, 2013

CORRECTION: An article about pediatric heart surgery in the Fall 2012 issue of healthpoints incorrectly stated that the number of pediatric heart transplants between January 2008 and December 2011 at NewYork-Presbyterian Morgan Stanley Children's Hospital of New York (MSCHONY) was 18. The correct number is 87 transplants during that time period.

New Faculty Highlight: Isaac George, MD

Advancing heart and valve care with surgical, interventional, and hybrid options.

The Division of Cardiothoracic Surgery is pleased to welcome **Isaac George, MD** as its newest faculty member. His recruitment directly reflects the division's commitment to pushing the frontier of surgical care and providing the best that medicine has to offer.

Dr. George is already well-integrated in the division, having trained here for a decade. After receiving his medical degree in 2001 from Duke University School of Medicine, he completed his internship, general surgery and cardiothoracic residencies, post-doctoral clinical fellowship, and cardiothoracic fellowship at NYP/Columbia between 2001 and 2011. He capped these off with an interventional cardiology/hybrid cardiac surgery fellowship in 2012, under the guidance of his mentor, **Mathew R. Williams, MD**, co-director of the Valve Center, who was the first in the nation to achieve dual training in cardiac surgical and interventional (catheter-based) procedures.

This dual training is important, Dr. George explains, because it gives patients unprecedented access to hybrid and innovative solutions that simply did not exist even a decade ago. He explains, "If you talk with a surgeon, he will say you need operation X. If you talk with an interventionalist, he will say you need procedure Y. Because we do both surgery and catheterization procedures, and in some cases create hybrid operations that use the best of both approaches, we are not attached to either specialty. We can improve a patient's outcomes long-term, because we know the likely courses associated with both approaches."

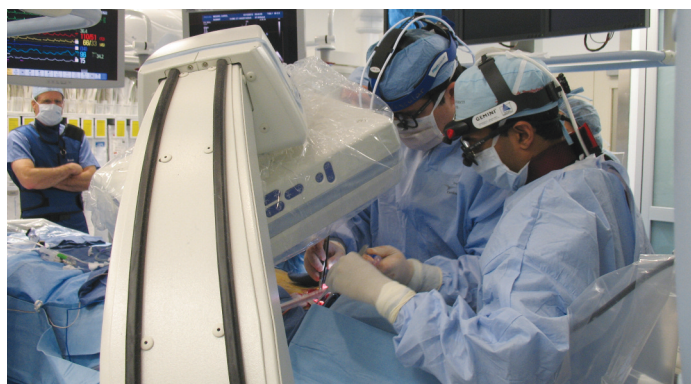
For patients with coronary disease or failing heart valves, access to specialists with Dr. Williams and Dr. George's unique training means that they will be sure to receive the optimal solution to their individual problems. More than half of Dr. George's time is devoted to caring for patients at the rapidly expanding Valve Center, where he and his colleagues treat patients with mitral valve disease, aortic valve disease, and occasionally, tricuspid valve problems. Outside the Valve Center, Dr. George sees a high volume of patients with heart failure and coronary disease. Many of these patients benefit from his ability to devise personalized hybrid procedures, which combine elements of traditional surgery with elements of catheter-based procedures. Dr. George also treats the full spectrum of cardiac patients, including those undergoing heart transplantation.

Many types of patients benefit from the team's ability to innovate and devise the best solution for that person's anatomy, history, and other factors. "We may combine conventional surgery with a stent, such as in patients who have already had heart surgery or certain valve surgeries," Dr. George explains. This surgery-stent combination can

lower the risk of surgery, and is appropriate for some patients who are older, at higher risk for various reasons, or who may not be good candidates for vein grafts.

In addition to his clinical practice, Dr. George maintains a full research schedule, albeit during many evenings and weekends so as to not interrupt his time with patients. As Associate Director of the Cardiac Surgery Research Laboratory, he performs both clinical and basic scientific research. He is studying outcomes of hybrid coronary and valve surgery and comparing them to conventional surgery.

He is also examining which patients derive the most benefit from transcatheter aortic valve replacement (TAVR), which is undergoing investigation at NYP/Columbia and other centers in the PARTNER trial. Another major focus of his research concerns certain biologic pathways (TGF-beta) that may contribute to both heart failure and aortic aneurysms. He has funding from a NYP/Columbia Dean's Grant to perform heart failure research this year, and will be seeking additional funding to continue this work further. On the horizon, he looks forward to participating in trials of the next generation of new ventricular assist devices for patients with heart failure, including smaller pumps that may be inserted through small incisions and catheter-based procedures.



Isaac George, MD and Mathew R. Williams, MD performing a hybrid heart procedure earlier this year.

He may be busy, but Dr. George is clearly thriving. He credits both NYP/Columbia's high patient volume and the strong support of his colleagues for the many unique opportunities in collaboration and innovation available here. "It is great to be able to be involved with the innovative things going on at Columbia. I am fortunate to have opportunities that most surgeons don't have anywhere else." ■

To learn more, visit: www.columbiaheart.org