

JOHNS HOPKINS Surgery

WINTER 2019



NEWS FROM THE JOHNS HOPKINS
DEPARTMENT OF SURGERY

Multicenter Trial Aims to **Reduce Positive Margins for Breast Tumors**

An estimated 23 percent of patients who have breast conserving surgery (BCS) need additional surgery because post-operative pathology identifies positive margins. Each additional surgery costs more than \$16,000 and poses a significant burden to patients. To help combat this issue, Johns Hopkins breast surgeons are leading a large multicenter trial to test a promising device that assesses margins at the time of surgery.

“Reoperation after lumpectomy is a big problem,” says **David Euhus**, director of breast surgery. “The gold standard to assess margins is pathology, but we hope an intraoperative device can make that final assessment negative most of the time and reduce the number of reoperations.”



The Johns Hopkins breast surgery team, from left to right: Pamela Wright, Maureen O'Donnell, Julie Lange, David Euhus, Melissa Camp, Bonnie Sun, Colette Magnant, Mehran Habibi and Lisa Jacobs.

A Comparison of Results

Since 2013, the team of breast surgeons, led by **Lisa Jacobs**, has developed and tested a handheld device to assess the margins of excised tissue at the time of surgery. What makes the device unique is that it uses optical coherence tomography (OCT) with interferometric synthetic aperture microscopy (ISAM).

OCT is commonly used in ophthalmology and generates images that look similar to ultrasound but have higher resolution and more shallow imaging depth. In real time, it uses near-infrared light to provide high-resolution, cross-sectional optical images of microscopic tissue.

To test the feasibility of the device and to determine its potential impact on patient outcomes, Jacobs and her colleagues conducted a pilot study with specimens from 46 patients with early stage breast cancer. The results of analyses of images from the device were compared with post-operative pathology results. The pathology showed eight patients had at least one positive margin. The device identified positive margins in five of these, meaning reoperation could potentially have been avoided for those five.

In the same study, which was published in 2015 in *Annals of Surgical Oncology*, pathology showed 35 patients had all negative margins. Of those, 63 percent had at least one false-positive margin identified by the device. In these cases, each patient would potentially have had additional shave excisions during surgery to remove approximately 1 percent of overall average breast volume.

“The challenge with any margin technology is similar,” says Euhus. “If the technology is too sensitive, it will call everything cancer and surgeons will

“This work could change the patient experience by reducing the burden of care on the patient.”

—CHRISTOPHER WOLFGANG

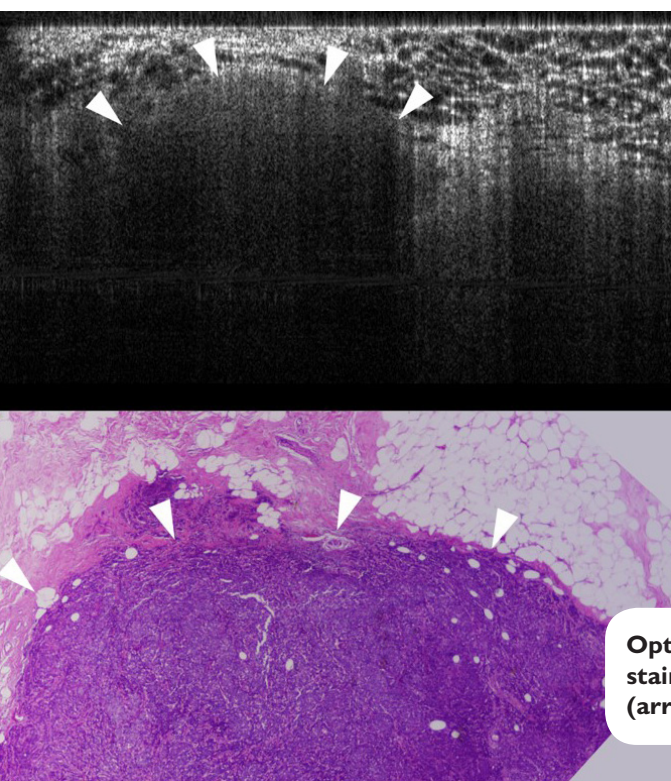
excise too much tissue. If the sensitivity is too low, patients will leave the OR with positive margins.”

An Atlas to Help Analyze Images

To help distinguish between features in OCT images, Jacobs and colleagues recently performed a histology-correlated study of specimens from 26 patients. Images from the OCT device and the corresponding histology were used to create guidelines to help surgeons analyze the OCT images. The study was accepted in late 2018 for publication in *Surgical Innovation*.

“This work could change the patient experience by reducing the burden of care on the patient,” says **Christopher Wolfgang**, division chief of surgical oncology. “This is very important for patients and hospitals alike.” ■

To discuss a patient case or to make a referral for breast surgery, call 443-997-1508.



Optical coherence tomography (top) and hematoxylin-eosin-stained (bottom) images show foci of ductal carcinoma in situ (arrows), nuclear grade 3, surrounded by normal fibrofatty tissue.

Kidney Transplant Team Researching How to Reduce National Waitlist

To help decrease national wait times for kidney transplantation, Johns Hopkins transplant surgeons have increased their use of so-called extended criteria kidneys from older or hepatitis-infected donors and donors after cardiac death—organs that some centers would define as “suboptimal.” Transplant surgeon **Jacqueline Garonzik Wang** hopes to increase other surgeons’ comfort in accepting these organs, which could result in the removal of thousands of people each year from the national kidney transplant waitlist.

Despite the positive outcomes of transplanting suboptimal kidneys, utilization rates vary widely among transplant centers nationwide. From 2000 to 2013, about 31,000 procured kidneys were discarded, says Garonzik Wang. This could be because regional centers were uncomfortable with the organs and passed on them, at which point it was too late to ship them to another center, she says.

Award Granted to Develop Report Cards for Transplant Centers

With a K23 grant from the National Institute of Diabetes and Digestive and Kidney Diseases, Garonzik Wang and research mentor **Dorry Segev** are developing report cards for each transplant center showing their aggressiveness in using suboptimal

kidneys. The idea is that when surgeons are offered a suboptimal kidney from their local organ procurement organization, information about the organ would be paired with data from the Scientific Registry of Transplant Recipients. The data would show outcomes associated with transplants utilizing organs of similar quality in hopes that the information could help change organ selection behavior and increase the use of suboptimal kidneys.

“I would love to inspire people and get these organs utilized across the country equally,” says Garonzik Wang, “But if we can’t, then these organs should be preferentially allocated to surgeons willing to use them.”

Previous Research Revealed Limited Use of Suboptimal Kidneys

The work builds upon an earlier study of transplant center assertiveness led by Garonzik Wang published in the *American Journal of Transplantation* in 2012. She found only a small number of centers were aggressive in using suboptimal livers and kidneys. About 30 centers were not aggressive at all, and others were aggressive only with certain subtypes of organs. The centers more likely to use suboptimal organs tended to be located in densely populated areas with significant



Jacqueline Garonzik Wang and Dorry Segev

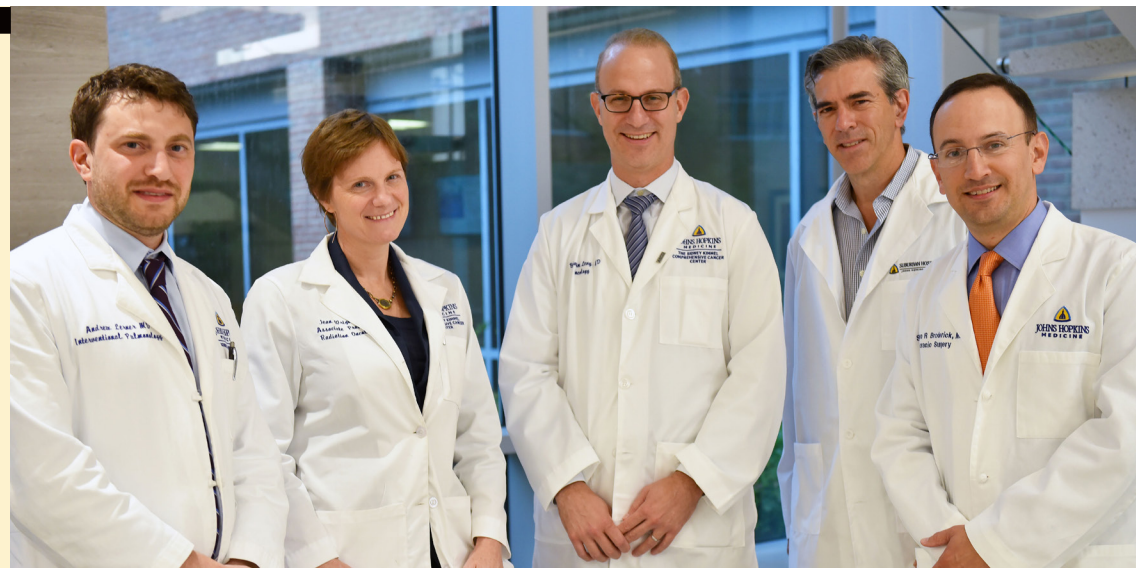
competition from other centers.

Soon after presenting her data at a 2013 transplant conference, “I got numerous emails from people asking me to send them a map showing transplant center aggressiveness so they could see where they were,” Garonzik Wang says. “There was this immediate interest for knowing exactly where their transplant centers stood.”

Despite interest in knowing the status of these centers, research indicates overall aggressiveness hasn’t increased since 2009. “I think it echoes that we need to do more to get this information out in a fashion that is digestible and applicable to transplant surgeons,” says Garonzik Wang. ■

To discuss a patient case or to make a referral to the Johns Hopkins transplant surgery team, please call 410-502-6152 or download the Johns Hopkins Transplant Center app for health care providers at bit.ly/transplantapp.

Thoracic Oncology Services, Including Surgery, Available Throughout Mid-Atlantic



The Johns Hopkins thoracic oncology team, from left to right: Andrew Lerner, Jean Wright, Benjamin Levy, Stephen Greco and Stephen Broderick.

In addition to receiving comprehensive thoracic oncology care at Johns Hopkins Bayview Medical Center and The Johns Hopkins Hospital in Baltimore, patients diagnosed with lung cancer can now receive the same quality treatment and care at Sibley Memorial Hospital.

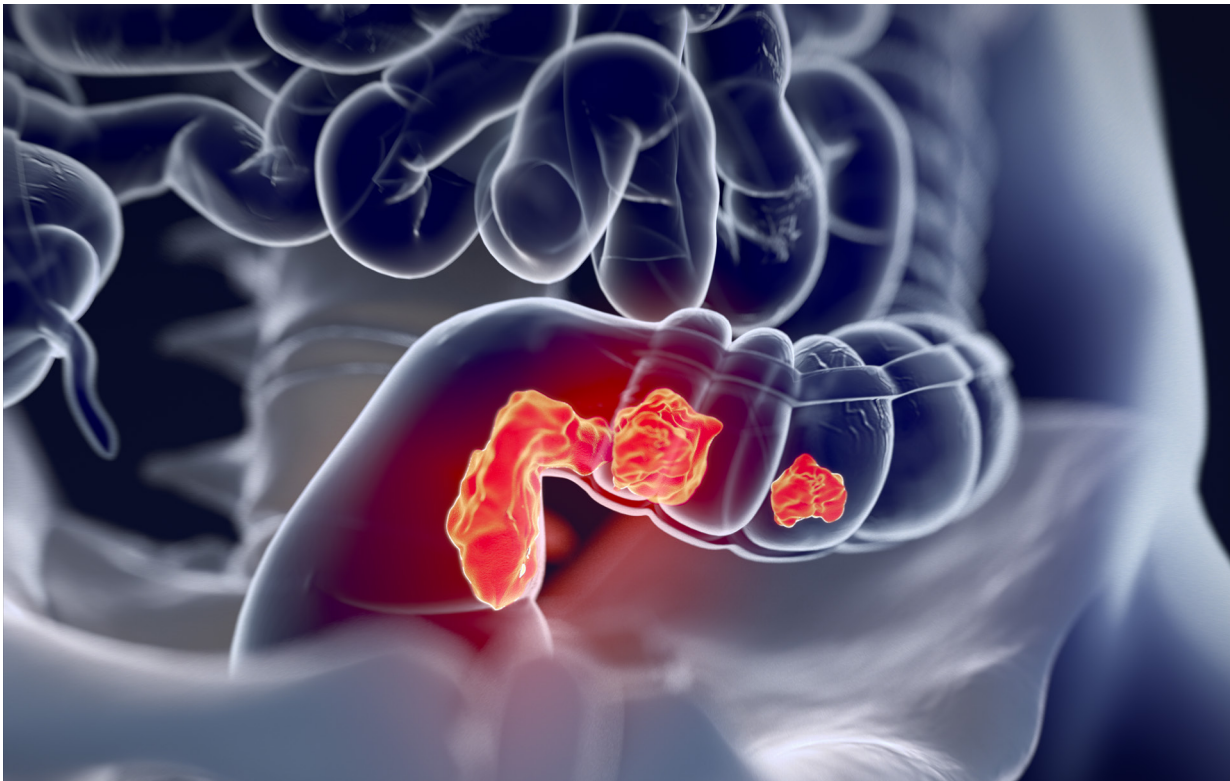
Opened in 2016, the Johns Hopkins Kimmel Cancer Center in the greater Washington region offers patients and their providers access to a team of thoracic specialists in diagnostic radiology, medical oncology, radiation oncology, surgical oncology and interventional pulmonology. The

experts review each patient case to develop a comprehensive treatment plan focused on the patient’s specific needs and patients have access to the same clinical trials and research available at Johns Hopkins Hospital. The lung cancer program at Sibley also provides lung cancer screenings, palliative care and semi-annual post-operative check-ups.

“We can provide the exact same level of oncologic and perioperative care at Sibley as we can at The Johns Hopkins Hospital,” says **Stephen Broderick**, a thoracic surgeon at Sibley.

Patients will also have access to the latest in thoracic cancer treatment options with the opening of the Johns Hopkins National Proton Therapy Center at Sibley in 2019. Additionally, all clinical trials open for patient recruitment at the Baltimore locations will shortly be available to patients receiving care at Sibley.

“We are pleased to provide the high level of care expected of Johns Hopkins to patients who live in the Washington, D.C., region,” says **Richard Battafarano**, regional director of thoracic surgery at Johns Hopkins. ■



“One doctor might provide limited options, but a whole team that evaluates the patient can provide more options and potentially better outcomes.”

— SANDY FANG

Innovative Approaches to **Colorectal Surgery** Benefit Patients

The field of minimally invasive surgery as it relates to colon and rectal disease has seen many advances since it was first introduced in the 1980s. To that end, experts within the Johns Hopkins Division of Colon and Rectal Surgery have become some of the first to adopt several new minimally invasive approaches to treat benign and malignant colorectal conditions.

These complex techniques, which require extensive surgical training and skill, offer patients significant benefits including less pain, less blood loss, better cosmetic outcomes and quicker recoveries. “We are committed to doing what’s best for our patients,” says **Bashar Safar**, the new division chief of colorectal surgery in the Johns Hopkins Department of Surgery, “whether it’s at The Johns Hopkins Hospital in downtown Baltimore or in Washington, D.C., at Sibley Memorial Hospital or Suburban Hospital.”

Combined ESD and TAMIS Among the First in the U.S.

In 2017, Johns Hopkins physicians were among

the first in the U.S. to perform a combined endoscopic submucosal dissection (ESD) and transanal minimally invasive surgery (TAMIS) to remove a large rectal polyp.

The first combined ESD-TAMIS procedure at The Johns Hopkins Hospital was performed by gastroenterologist **Saowanee Ngamruengphong** and colorectal surgeon **Sandy Fang**. A month post-surgery, the patient was eating and having regular bowel movements. Since then, the duo has completed three more ESD-TAMIS surgeries on patients who otherwise would have had their rectum removed.

“Together with TAMIS, ESD can remove the entire lesion in one piece and the risk of recurrence becomes less than 1 percent,” says Ngamruengphong.

In addition to being minimally invasive and having good functional outcomes, the multidisciplinary team approach of ESD-TAMIS allows for an easier recovery and a shorter stay in the hospital. Fang and Ngamruengphong say the best candidates are patients with large noncancerous rectal polyps or those with early stage rectal cancers who are not healthy enough to undergo a large operation.

“Lesions in the rectum can be treated in many different ways,” says Fang. “One doctor might provide limited options, but a whole team that evaluates the patient can provide more options and potentially better outcomes.”

Additional Minimally Invasive Options for Benign and Malignant Colorectal Disease

Laparoscopy can be applied to nearly any disease treated by surgery, including diverticulitis, rectal cancer, Crohn’s disease and pelvic floor disorders

such as rectal prolapse, according to **Alodia Gabre-Kidan**, a colorectal surgeon at Howard County General Hospital, a member of Johns Hopkins Medicine.

For example, a total colectomy for patients with severe ulcerative colitis can be an intricate surgery because “we need to access everywhere that the colon lives in the abdomen,” says Gabre-Kidan. “You may think you need a big open incision because the disease process is so complicated, but many times, we can offer a minimally invasive approach. We’re committed to doing anything we can to help make postoperative outcomes better, and advanced laparoscopy is one of those things.”

Another option for minimally invasive surgery includes robotic colorectal surgery. Providing patients with new options when treating complex conditions, such as rectal cancer, is one of the most rewarding aspects of **Haniee Chung**’s job as a colorectal surgeon at Sibley Memorial Hospital and Suburban Hospital, both members of Johns Hopkins Medicine in the greater Washington, D.C., area. Chung also performs ESD-TAMIS at these hospitals.

“Cancer itself is a devastating diagnosis that changes a patient’s life, and on top of that, patients are often told that they’ll need a big operation that will alter their lifestyle and function,” she says. “We push the limits so we can offer patients quicker recoveries and better functional outcomes.” ■

To discuss a patient case or to make a referral for minimally invasive surgery, call 443-997-1508.

To view a case presentation of the first-ever ESD-TAMIS procedure performed by Ngamruengphong and Fang, visit bit.ly/comboprocedure



The Johns Hopkins Multidisciplinary Rectal Cancer Clinic sees and evaluates patients in one day at one location.

Introducing the Johns Hopkins Doctor Referral App

This new app provides a simple way for health care providers to connect with and refer patients to physicians across Johns Hopkins Medicine in the departments of surgery, neurosurgery, orthopaedics and urology. Registration is required.

Visit bit.ly/hopkinsapp.



Johns Hopkins Surgery Referral Line

Our schedulers are available to assist you Monday through Friday, 8 a.m. to 5 p.m. For after-hours or emergency transfers, please use the **Hopkins Access Line** at **410-955-9444**.

Call 443-997-1508 to refer a patient. Get easy access and quick appointments for your patients at multiple locations.

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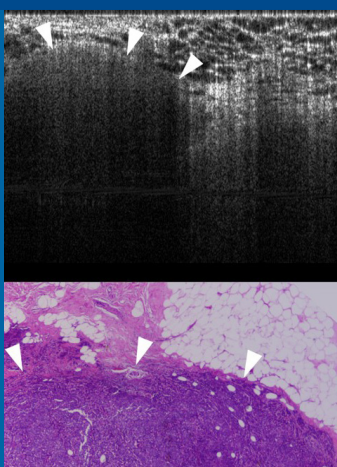
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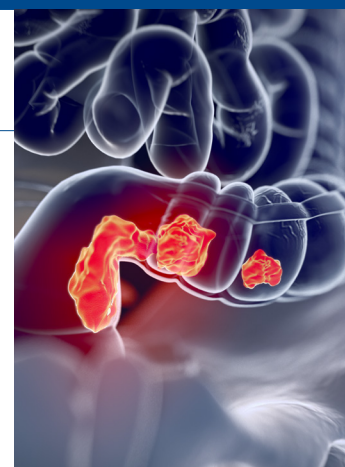
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