



PATIENT CARE

The Ion Flexision biopsy needle is flexible, able to pass through the catheter even when positioned in tortuous airways, and can deploy into the target location on a straight path.

Judicious evolution

2021 saw our patients benefit greatly from surgeons on the technology forefront. From mastering new systems in the operating room to undertaking advocacy efforts on the ground, Emory surgeons continued to work tirelessly to ensure world-class patient care.

EARLIER TO DIAGNOSE, EARLIER TO TREAT

Manu Sancheti and his colleagues at Emory Saint Joseph's Hospital were the first in the state to use Intuitive's Ion robot. With its ultra-thin and maneuverable catheter, the robot can reach deep into the peripheral areas of the lung so doctors can biopsy suspicious tissue.

"Early stages of lung cancer can be challenging to diagnose since we need to take samples from deep within the lung," says Sancheti, chief of general thoracic surgery at Emory Saint Joseph's Hospital and director of robotic thoracic surgery for Emory Healthcare. "With this robot, we can access those areas of the lung more easily and biopsy suspicious nodules with precision and in a minimally-invasive way."

In addition to diagnosing lung cancers earlier, Emory Saint Joseph's Hospital is one of the first hospitals in the Southeast to use this technology to get real-time information about whether the tissue is cancerous and potentially proceed immediately to surgical treatment.

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Onkar Khullar and Manu Sancheti.
Both did their cardiothoracic surgery
residencies on a general thoracic track
at Emory.



“When we use the Ion in our hybrid operating room alongside the da Vinci surgical robots, we can diagnose early-stage lung cancers and treat them all in the same surgical session,” Sancheti says. “This revolutionizes the treatment process, allowing us in some cases to shave weeks off the treatment regimen, which typically involves multiple appointments. Patients are relieved, and excited about our use of novel and advanced technology.”

During the robotic-assisted bronchoscopy, the surgeon uses a controller with a heads-up display to navigate the camera-equipped catheter along a pre-planned path through the lung airways. With its 3.5-millimeter size and ability to articulate 180 degrees in any direction, the Ion can reach all 18 segments of the lung. Once the surgeon approaches the targeted area, they can then biopsy the suspect tissue.

“When performing bronchoscopies for lung nodule biopsy, we now have an unprecedented level of precision due to the advanced features of this robotic navigation,” says Alejandro Sardi, an interventional pulmonologist at Emory Saint Joseph’s Hospital. “This is just the latest step in our efforts to diagnose earlier and provide better outcomes for patients at Emory Saint Joseph’s Hospital.”

ANOTHER FIRST

In August 2021, Manu Sancheti and Onkar Khullar successfully performed Georgia’s first robotic-assisted tracheobronchoplasty to treat tracheobronchomalacia (TBM) at Emory University Hospital Midtown. The team reports that the patient responded well to the surgery, and has a much-improved quality of life.

While uncommon, TBM is progressive and debilitating and occurs when tracheal tissue becomes soft, weak, and redundant. The consequence is frequent collapsing of the airway. As a result, patients experience severe coughing, wheezing, recurrent pneumonia, and difficulty breathing.

“Doing a tracheobronchoplasty for TBM involves placing mesh stenting on the back of the trachea to reinforce the airway and ease symptoms, and has traditionally been performed with an open approach,” says Khullar, whose faculty responsibilities include serving as associate program director for the thoracic surgery program of the cardiothoracic surgery residency. “Doing the procedure robotically offers a minimally invasive option, and gives surgeons more bandwidth to make the complex technical maneuvers necessary to complete the surgery.”

Robotic-assisted tracheobronchoplasty allows surgeons to reconstruct the airway walls with precise control of tiny instruments on four thin robotic arms, resulting in smaller incisions, less pain, and quicker recovery.

“The robot works well in the limited space of the chest cavity because of the articulated wrist-action of the instruments,” says Sancheti. “Even with the small skin incisions, the improved dexterity allows us to sew the mesh in a small area more efficiently and effectively. The 3D camera also provides excellent visualization of the surgical area.”

A formidable surgical team, Khullar and Sancheti have considerable robotic surgery experience. Khullar initiated a robot-assisted general thoracic surgery program at Grady Memorial Hospital in 2018 that has grown to approximately 50–75 cases annually. Sancheti developed a robotic thoracic surgery curriculum for cardiothoracic surgery residents. He trains thoracic surgeons from all over the world in robotic surgery, and assumed direction of Emory Healthcare’s robotic thoracic surgery program in 2017. Additionally, he shaped the robotic thoracic surgery program at Emory Saint Joseph’s Hospital into one of the busiest programs in Georgia and the entire Southeast. To date, the program has performed over 650 robotic procedures, including robotic bronchoscopy.

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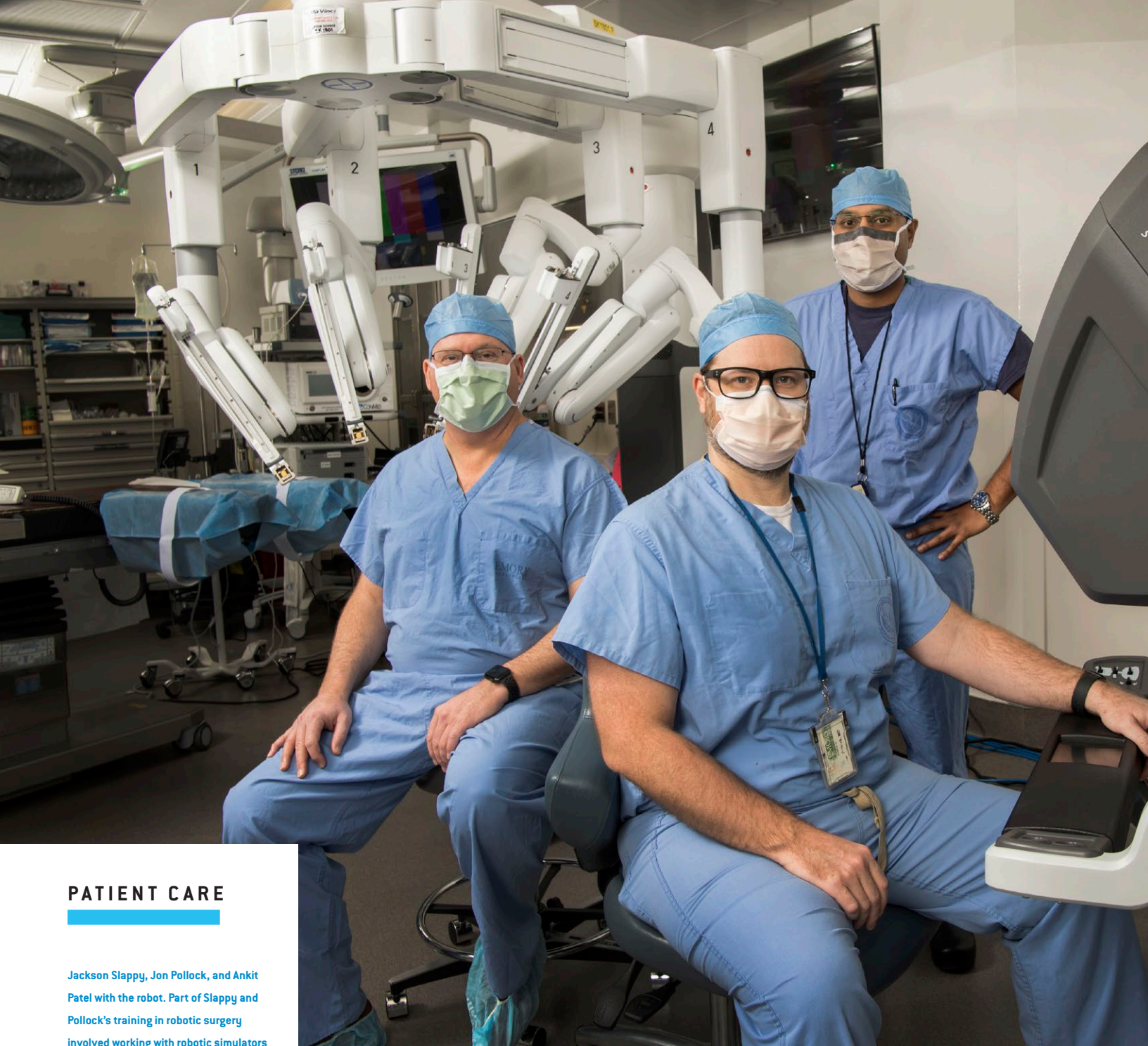
—ONKAR KHULLAR

JOURNEY TO UPGRADE

Surgeons take on disease, injury, and catastrophe daily for their patients. Some go even further, doggedly navigating bureaucracies to help thousands of people, most of whom they’ll never meet. General and GI surgeons Jackson Slappy, Ankit Patel, and Jon Pollock worked together to do just that, and now patients can choose robotic surgery as an option at the Atlanta Veterans Administration Healthcare System.

“Robotic surgery offers incredible benefits for our veterans, the most significant being equal or better results compared to older surgical methods. It’s extremely gratifying to be able to make this technology available to them,” says Slappy, chief of general surgery at the Atlanta VA at the time; he departed from Emory in January 2022 to become chief of staff at the Columbia VA Healthcare System.

Slappy performed the facility’s first robotic procedure in mid-April 2021, effectively commemorating the hospital’s acquisition of a da Vinci robot-assisted surgical platform in culmination of a years-long



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Jackson Slappy, Jon Pollock, and Ankit Patel with the robot. Part of Slappy and Pollock's training in robotic surgery involved working with robotic simulators at Emory.

130

Number of robotic procedures performed in 2021 (estimated)

6

VA surgeons credentialed to use the new system

10-12

6 general | 2 urology
1 thoracic | 1 GYN

Number of surgeons to ultimately be credentialed



process to obtain approval for instituting robotic surgery there.

“With this double milestone, not only can Atlanta’s veterans have the advantages of robotic surgery, but the VA can serve as an additional source of robotics training for Emory residents. With the increase of surgical robotics in our profession, having this training asset available is imperative,” he says.

Patel and urologist Christopher Filson, both robotics practitioners and advocates, began campaigning to acquire a robot for the VA in 2013. Assembling a narrative and proposal for initiating a robotics program for prostate surgery at the hospital, they presented

the material to Atef Salam, the Atlanta VA’s chief of surgery at the time. Salam was impressed by the advantages robotics offered patients — increased precision and accuracy, less pain, shortened recovery time, and the option of having a minimally invasive procedure instead of traditional open surgery.

“Given the priorities of the Atlanta VA then, the effort stalled,” says Slappy. “Meanwhile, my colleagues and I were referring our patients who were interested in robotic options to other hospitals in the Emory system. Then Ann Brown arrived as the new director of the VA in 2019 and we were back in business.”

After Brown gave the go-ahead to revive the effort, Slappy dusted off Filson and Patel’s original business plan and updated it. Brown signed off on the proposal, and Slappy began moving the initiative through the VA’s National Surgery Office, Central Office, and purchasing and acquisition bureaucracy.

“One major disincentive for leaders was the cost of the robots, which can be as much as \$2.2 million,” he says. “Eventually, they realized the expense would be absorbed quickly by the volume of common cases that could be done robotically. People throughout the organization saw that the robotic versions of many procedures were becoming the best options.”

Working to leverage shifting attitudes, Slappy established a working group with Jon Pollock to determine what types of instruments, supplies, and additional adjustments would be needed to accommodate the technology.

“After managing the Emory general surgery residency rotation at Soddo Hospital in Ethiopia from 2011–2016, I had returned to Atlanta,” says Pollock. “I gradually came around to the benefits of having robotic surgery available at the VA, and by 2020 I was all in. Dr. Slappy’s tireless leadership as he worked the initiative through the VA approval process particularly inspired me.”

Patel, who had successfully integrated robotics training into Emory’s residency curriculum, helped train and advise Slappy and Pollock for their robotic surgery credentials and observed them perform their first robotic procedures.

As of late 2021, surgeons have performed 103 robotic surgery cases at the Atlanta VA, and it is estimated they will complete 130 by year’s end. Other physicians at the facility, particularly from the urology and thoracic surgery sections, are also working to obtain VA robot-assisted surgery privileges. ■

“The program is doing very well, and given usage and demand we expect to request a second robot in the next budget cycle.”

—JACKSON SLAPPY

