Urology
Parth Modi, MD, MS, is a fellowship-trained urologic oncologist with expertise in the management of genitourinary cancers, including bladder, prostate and kidney cancer. Dr. Modi also specializes in intricate open and robotic surgery to treat patients with urologic cancers.

The stars align
After rotating through the various specialties in his third year of medical school, Dr. Modi chose urological surgery, because, like many of our surgeons, he liked being able to use his hands to fix a problem and see a real-time benefit from an intervention. “When I got into urology, I experienced just that,” he said. “I really enjoyed the spectrum of diseases that urologists deal with.”

Urologists perform a wide variety of procedures, everything from minimally invasive and high-tech procedures to low-tech, large-scale, open surgical procedures. These urological surgeries are used to combat an elaborate gamut of issues, from cancer and other life-threatening conditions to quality of life and lifestyle-related problems.

Dr. Modi was drawn to the variation in surgical procedures along with the ability to establish long-standing relationships with patients. “All of those things really appealed to me, and I also got along well with the people in the field,” he said. “I think a lot of times we don’t see how much that plays a role in how we decide things.”

Needless to say, the stars have aligned impeccably for Dr. Modi and urological surgery. He and his team communally generate and practice novel techniques that accommodate the needs of our patients.

Cancer detection and innovative technologies
Prostate cancer is one of the most common cancers in men, and, unfortunately, there are no known modifiable risk factors. For other cancers, like bladder cancer for example, urologists can point to smoking as a major risk factor. “The real key for us has been early detection,” said Dr. Modi. “Finding the cancer early on allows us to address it right away. In addition, because we know that there are genetic risk factors, we encourage genetic screening.” To that end, the mainstay to better outcomes is vigilant screening and detection.

Since joining the University of Chicago’s Department of Surgery, Dr. Modi and his team have been shifting to more minimally invasive options whenever possible. His team is actively studying and eagerly trying out new technologies as they refine techniques and improve protocols. The transperineal biopsy is a prime example.

In order to diagnose someone with cancer, a biopsy is required. For prostate cancer, urologists need to have a sampling of the prostate tissue to send to a pathologist, who then will formally make the diagnosis. Historically, urologists have done prostate biopsies through a transrectal approach. The prostate sits just next to the rectum, and putting an ultrasound probe in the rectum allows urologists to see the prostate very well.

The method of insertion (for ages) has been to put a needle through the rectum into the prostate, to sample it. While this has been the standard method and considered safe, it is not without risk of complications.

Historically, almost 5 percent of patients who receive transrectal biopsies develop an infection after the procedure. “When I was a medical student, and into the beginning of my residency, there were some advances in terms of what antibiotics to give or ways to try to figure out what bacteria the patient had in their rectum to try to minimize the risk of infection after those procedures,” said Dr. Modi. “In more recent times, newer techniques aim to avoid putting a needle through the rectum at all. The transperineal approach has proven to be a much better option. “It’s a win-win deal in terms of lower risk for the patient and better stewardship of these powerful antibiotics.”

The transperineal method involves putting the needle through the skin of the perineum instead of through the rectum. The technology has evolved to a point where urologists can provide better localized anesthesia, which makes putting needles through the skin is not as painful as it would be otherwise. “By entering the body through the perineum, we can not only avoid the risk of infections, but even avoid giving some heavy-duty antibiotics, which we used to have to give for transrectal biopsies,” said Dr. Modi.

For many years, urologists had been under fire for overusing or inappropriately using antibiotics and potentially contributing to antibiotic resistance, so this groundbreaking technology is helping to eliminate that. The transperineal method has minimized the risk of serious infections, and some studies suggest, although still being examined, it may even improve the detection of prostate cancer in some ways.

Novel diagnostics for bladder cancer
Bladder cancer is quite different from prostate cancer, but still a common, very aggressive and (potentially) deadly cancer. Cystoscopy is a common procedure for urologists to see inside the bladder using a small camera. The traditional methodology is called white light cystoscopy and, as the name implies, utilizes white or natural light.

Blue light cystoscopy differs in two ways. First, urologists inject the patient’s bladder with medication—a chemical that binds preferentially to bladder tumors—an hour prior to the cystoscopy. Then, they use a camera with a blue light to locate tumors with the aid of the binding agent.

“We do the normal cystoscopy that we’ve always done, and, in addition, we can then use a different wavelength of light to specifically cause fluorescence in bladder tumors that have taken up this medication that we have instilled beforehand,” continued on next page.

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so it improves the detection of bladder tumors,” said Dr. Modi.

In a recent trial, patients were given both white light and blue light cystoscopies. The results were telling. The white light cystoscopy failed to detect tumors in one in five patients. Whereas the blue light cystoscopy was able to locate smaller or more flat tumors. Had these patients only received the white light cystoscopy, 20 percent would not have had their bladder cancer detected. This is especially important as early detection can greatly improve the prognosis.

Once a cancerous tumor is detected, the primary treatment is a resection of the tumor. This involves going into the bladder to scrape out the tumor, which confirms the diagnosis and treats the cancer.

In order to perform the resection, Dr. Modi and his team must be able to pinpoint its location and see it clearly. The combined use of white light cystoscopy and blue light cystoscopy provides his team with a clear visual of the tumor. In addition, the blue light assists in finding smaller, hard-to-see tumors that are at an earlier stage of development.

Team effort

“There’s no way that we can provide adequate care for prostate or bladder cancer patients without other disciplines besides urology,” said Dr. Modi. “For many patients, we have treatment options that are thought to be equivalent; surgery and radiation for prostate cancer are both thought to be equally effective and they’re very different.” Having patients meet with both specialists to learn about treatments helps them make a decision that’s right for them. This requires active multidisciplinary collaboration.

Similarly, Dr. Modi works closely with his colleagues in medical oncology who provide hormonal therapy, chemotherapy, and immunotherapy for prostate and bladder cancer patients. Without question, teamwork is essential.

“We have regular multidisciplinary meetings weekly where we discuss cases and get the opinions of our colleagues in other fields; we know each other very well,” said Dr. Modi. This team model also includes working closely together with patients to provide optimal care. “It’s 100 percent essential. I wouldn’t want to practice without the opportunity to provide multidisciplinary care like that.”

The patient’s doctor: Sustaining quality of life

Receiving a cancer diagnosis, whether it’s prostate or bladder cancer, is a devastating experience for Dr. Modi’s patients. Whether older or younger, they want to understand all their options and how treatment will affect their lives going forward.

Whether they be sexual function, urinary function, the ability to continue playing sports or whatever the case may be, I think that’s a very common scenario for myself and my partners . . . discussing not just the cancer and the treatment options, but what are the implications for quality of life.”

Dr. Modi and his team diligently build the ingredients for the right treatment plan based on the needs of the individual and don’t pull from a prestocked inventory of generic operating procedures. This approach prioritizes a patient’s specific needs and also optimizes the elements that are indispensable to maintain quality of life.

“I see patients for years after their treatment, for surveillance and just to check in and see how things are going,” he said. “I always like to hear that they were able to go play golf at this event or they made it to their grandson’s wedding. Largely, they’re very happy with their quality of life and to be done with their treatment.”

The “CISTO” study: Making quality of life a priority

A play on words for cystoscopy, the CISTO study is one of Dr. Modi’s priority research projects at the moment. It’s a national, multicenter study whose main goal is to understand quality of life for patients battling bladder cancer. More specifically, the study is looking at bladder cancer patients who have a recurrent form of the disease and who have a choice between having surgery to remove the bladder or receiving medication treatments that are put into the bladder.

“There is a bit of an unknown here,” said Dr. Modi. “We really don’t know which one is better for which patients. This study is trying to understand which procedure is optimal, not just in terms of their cancer control and cancer cure, but in terms of their quality of life; we want to know how they feel about their health and lifestyle during and after the treatment.” Dr. Modi is excited about this novel study and eager to work with the study’s team of experts. Having a better understanding of the impact of individual treatment options on quality of life will be invaluable in providing informed counsel to his patients in future.

What advice would Dr. Modi, an accomplished surgeon and dedicated researcher, offer to those considering urology? “The biggest advice I’d give anybody who’s looking forward to practicing urology is to stay humble,” he said. “There’s a lot out there that we don’t know, and there’s a lot out there that we’re still learning, and no matter how much training you’ve been through (and we’ve all been through a lot), things are changing. There’s more to learn, and so the opportunity to keep learning and keep improving our understanding of some of these diseases and how to treat them is exciting and important for all of us.”

Dr. Modi is a dedicated surgeon and researcher who is a burgeoning master of his craft. Like many of our surgical leaders, his appetite for innovation and discovery is unrelenting. In an effort to findgentler and less disruptive ways of curing disease, he consistently seeks to understand the latest advancements in modern medicine that improve the quality of his patients’ lives.