

Oncology Fellowship

The oncology fellowship training course at Yonsei University Health System (Severance Hospital), comprising a 6-month and 1-year format, provides good quality and wide experience in various types of urologic cancer. Our program offers fellows practical knowledge about the leading methods in diagnosis and management of urologic cancers. We aim to prepare urologic oncologists for a career characterized by excellence and innovation while providing a multidisciplinary and disease-based focus and understanding of urologic oncology. This fellowship includes exposure to all aspects of uro-oncologic surgery including open, laparoscopic, and robotic methods. Additionally, it includes clinical and research experience with options in basic science, clinical trial design, and research in clinical outcomes. Furthermore, the state-of-the-art cancer center established at Severance Hospital in 2014 allows physicians to perform specialized cancer treatment.

Clinical Training Program:

1. 6-month course

The 6-month course of the program is mainly dedicated to clinical experience (research time is also provided).

Clinical training includes:

Surgery

Open surgery: Fellows will actively participate in all aspects of open surgery for urologic cancers including radical prostatectomy, radical nephrectomy, partial nephrectomy, radical nephroureterectomy, partial cystectomy, radical cystectomy with ileal conduit urinary diversion or orthotopic neobladder, radical orchiectomy, and retroperitoneal surgery in both sexes regardless of age.

Minimally Invasive Surgery (MIS): Fellows will gain experience in transurethral endoscopic, laparoscopic, robotic surgery and video-assisted minilaparotomy surgery (VAMS), including diagnostic and therapeutic surgery in kidney, ureter, bladder, and prostate cancers. Especially, our center specializes in robotic surgery. Severance Hospital was the pioneer in the application of the da Vinci Surgical System in South Korea in 2005. Till date, we have performed 5000 urologic robotic surgeries and are proud to declare that we are the first single center in Asia to achieve this. Currently, we stand second in the number of urologic robotic surgeries performed around the world. The proportion of oncologic surgeries among all robotic surgeries is 99.6%.

Chemotherapy and radiotherapy

The fellowship is organized in an integrated, multidisciplinary fashion offering pathology, medical oncology, and radiation oncology training. A weekly urologic oncology multidisciplinary conference is held to discuss and review related topics.

2. 1-year course

The one-year program is mainly dedicated to research (clinical training time is also provided). On satisfactorily completing the one-year fellowship, the fellow will be awarded a certificate by the director of the fellowship program.

Research Training:

For the 6–12 months the fellow is enrolled in the program, time is also devoted to basic science or clinical research in laboratories/clinical programs, with the choice to concentrate on either field. Those interested in basic science and laboratory research have access to our biomedical research facility to undertake comprehensive animal studies. Additionally, due to the large volume of cases at our tertiary care center, we can maintain a large prospective database of information for research, which facilitates presentation of research articles to peer review journals and international academic conferences.

Endourology Fellowship

The Endourology training program at Yonsei University Health System (Severance Hospital) offers an integrated clinical and research experience for trainees in a 6-month and 1-year format. Training is focused on advanced endourologic procedures including RIRS (retrograde intrarenal surgery), PCNL (percutaneous nephrolithotomy), VAMS (video assisted minilaparotomy surgery), Laparoscopy and Robotic Surgery. Our training program (<http://www.endourology.org/positions/yonsei-university-college-of-medicine-department-of-urology/>) is certified by the Endourology Society. The fellow is exposed to a wide variety of endourologic procedures for stones, obstruction, carcinoma, and donor nephrectomies. Fellows have opportunities for research into how best to improve clinical outcomes. Moreover, fellows participate in regular weekly conferences discussing optimal management for cases, with direct involvement and interaction across different specialties.

Clinical Training Program:

1. 6-month course

SWL: The fellow will receive training in non-invasive management of < 2 cm lithiases. During SWL, they will learn preoperative preparation protocols and stone location techniques during lithotripsy, thereby familiarizing themselves with gaining renal orientation through combined fluoroscopy and ultrasound.

PCNL: Fellows will learn about percutaneous treatment of stones with both ultrasound and fluoroscopy-guided access, as well as intraoperative, perioperative, and postoperative management of different circumstances arising during PCNL.

URETEROSCOPY: Both rigid and flexible ureteroscopy teaches our fellows the techniques in management of stones, tumors, and obstruction. Fellows will learn skills in proper handling of instruments and endoscopic wires for different cases in a standardized manner.

VIDEO-ASSISTED MINILAPAROTOMY SURGERY: This form of combined laparoscopic and open surgery allows fellows to gain knowledge and learn skills to access the kidney through a mini incision along with the technique of muscle splitting. This procedure is associated with faster recovery and lesser postoperative pain compared to the open technique.

ROBOTIC SURGERY: With the large number of robotic surgeries we perform, our trainees are exposed to a wide array of knowledge and skills in the application of the robotic platform to urologic surgery, which they learn from senior mentors in our program. This enormous experience will help them gain critical intraoperative skills in the use of different techniques. Simulation and dual console training also forms part of our training program.

2. 1-year course

We provide not only clinical training but also training in research during the 1-year course.

Research Training:

Due to the large volume of cases at our tertiary care center, we maintain a large prospective database of information for research. Fellows have access to our biomedical research facility for comprehensive animal studies. Significant time is also allotted for clinical research in endourology to be able to present research papers to peer review journals, international, and local meetings. This part of our training prepares them to lead their own research team in the future.

Neuro-urology, Functional Urology, Female Urology and Reconstructive Urology Fellowship

The Department of Functional Urology, Yonsei University Health System (Severance Hospital), manages a variety of diseases associated with voiding dysfunction, viz., neurogenic bladder dysfunction, male incontinence, male bladder outlet obstruction, female incontinence, female pelvic organ prolapse, adult genital area disorder, and various diseases accompanying voiding dysfunction (e.g., interstitial cystitis, chronic pelvic pain syndrome).

The Functional Urology fellow training is focused on understanding neuro-anatomical and neurofunctional concepts, evidence-based decision making prior to invasive surgery, and performing various surgeries in the domain of functional urology. Furthermore, participation in academic seminars, daily ward rounds and outpatient clinic duties, and performing a variety of local procedures provides fellows plenty of clinical and academic training opportunity.

Clinical Training Program:

1. 6-month course

Fellows have the opportunity to observe and participate in the following procedures:

Urodynamic Study: The urodynamic study is a primary diagnostic tool in neuro-urology. With the application of basic anatomical and functional knowledge, the fellow will be trained to integrate various types of study findings and corresponding patient symptoms to arrive at a correct diagnosis and broaden his concepts of neuro-urology.

Endoscopic surgery

Botulinum toxin injection: This procedure is mainly performed for treatment of medication refractory overactive bladder. Under local anesthesia, the botulinum toxin is injected into the detrusor muscle, inhibiting muscle contraction by paralyzing the cholinergic nerves. In patients with functional bladder outlet obstruction, the botulinum toxin injected into the urethral muscle inhibits unnecessary sphincter contraction.

Holmium Laser Enucleation of Prostatic adenoma (HoLEP): For men with benign prostatic hyperplasia, or prostatic adenoma, the lesions may be enucleated with Holmium laser. This technique is one of the most advanced compared to other endoscopic approaches in benign prostatic hyperplasia.

Bladder Hydrodistension, transurethral mucosal fulguration: These procedures are performed for pain management in patients with interstitial cystitis. Although the exact pathophysiology is not clearly known, the pain noted in interstitial cystitis is associated with neural hypersensitivity. Thus, pain relief can be achieved by inflating the bladder and fulgurating the mucosa.

Sling operations

Mid-urethral female sling operation: The mid-urethral vaginal tape sling operation is an option for the treatment of traditional stress urinary incontinence.

Readjustable female sling operation: Patients with an underactive bladder, intrinsic sphincter deficiency, and those with previous history of sling failure are recommended to undergo a readjustable sling operation.

Readjustable male sling operation: A readjustable sling operation is performed for patients complaining of mild urinary incontinence after radical prostatectomy and for those with neurogenic stress urinary incontinence.

Artificial Urinary Sphincter implantation

Artificial urinary sphincter implantation is the treatment of choice for post prostatectomy urinary incontinence. Continence and voluntary voiding is achieved by placing a mechanical device in the body (cuff in bulbous urethra, pressure-regulating balloon in the preperitoneal space and pump into the subdartos fascia).

Reconstructive Surgery

Augmentation cystoplasty: This surgery is performed for patients with interstitial cystitis with severe bladder pain refractory to conservative treatment. Those with neurogenic bladder dysfunction and very low bladder compliance and a small bladder capacity are also candidates for this surgery.

Repair of pelvic organ prolapse: For women with pelvic organ prolapse (cystocele, rectocele), various surgical techniques may be used based on the severity, past history, and position of prolapse.

Repair of pelvic organ fistulas: Such repair is usually required for women presenting with fistulas after hysterectomy or radiation therapy. A transvaginal or transabdominal approach is used.

2. 1-year course (research training)

We provide not only clinical training but also research training during the 1-year course.

Animal models are used for studies on functional and neuro-urology. Using animal models for interstitial cystitis or neurogenic bladder dysfunction, newly introduced agents are studied for developing future medicines. Additionally, clinical prospective studies are conducted to verify the efficacy of medication or surgical procedures, and fellows are actively involved in all the above activities.

Pediatric Urology Fellowship

Severance Children's Hospital is located on the same campus as the Yonsei University College of Medicine, with outpatient clinics, hospital treatment, therapeutic procedures, and examination facilities. The fellowship program in Pediatric Urology was established about 30 years ago by our former director, Dr. Sang Won Han. Distinguished alumni of our fellowship program are today playing important roles in the Korean Society of Pediatric Urology.

Our fellowship program was opened to international urologists at the end of the year 2000, and many international urologists could complete their fellowship training successfully. They now hold important positions in the urologic societies of their respective countries.

Our department is now staffed with three pediatric urologists. The one-year program is focused on clinical training. We have a high volume of surgical cases, an extensive patient pool, and use advanced treatment techniques, thus fellows are trained in open, laparoscopic, robotic, and endoscopic procedures. The two-year program combines these with basic research.

We also have a pediatric neuro-urology clinic called the bladder-urethra rehabilitation clinic, which deals with the management of all pediatric neurologic or non-neurogenic voiding dysfunction (overactive bladder, urinary incontinence, dysfunctional voiding), including medical treatment, counseling for parents, and physical and emotional backup for children with neurogenic bladder dysfunction. Our clinic offers pediatric urodynamic study, biofeedback, and intravesical electrostimulation therapy.

The training curriculum can be adjusted to suit a fellow's training schedule. During the fellowship training, switching to the department of adult urology, viz., uro-oncology, endourology, adult neuro-urology (e.g., 6 months in pediatric urology, and 6 months in adult neuro-urology) is also possible, with the program director's consent.

Inpatient Clinical Volume:

- 1900 admissions per year.
- 1000 consultations per year.
- 1300 urodynamic study cases per year (including video-urodynamic study).
- 2000 surgical cases per year.
 - 380 VUR surgery cases (laparoscopic, open, and endoscopic injection).
 - 300 hypospadias surgeries.
 - 90 pyeloplasty cases (robotic, laparoscopic, and open).

- 20000 outpatients per year

Clinical Faculty:

Sang Won Han, MD, PHD

Yong Seung Lee, MD - Director

Sang Woon Kim, MD - Program Director of Pediatric Urology

Conferences:

- Kidney Conference (with Pediatric Nephrology); weekly
- Urodynamic Study Conference; weekly
- Severance Seminar of Urology (with Department of Urology); weekly
- Basic Science Research Meetings; weekly
- PURNO conference (with Pediatric Radiology, Pediatric Nephrology, Nuclear Medicine, and Obstetrics); monthly

Bladder-urethra rehabilitation clinic

- 800 intravesical electrostimulation cases per year.
- 250 biofeedback cases per year.



[Biofeedback]



[Intravesical electrostimulation therapy]

Clinical Training Program:

1. 1-year course

This course focuses on clinical training. Fellows will be exposed to open, minimally invasive surgery (robotic, laparoscopy, single port surgery), and endoscopic procedures. Surgical expertise and tips from our faculty members help enhance clinical competence.

Surgeries performed in the Department of Pediatric Urology:

Scrotal and simple penile surgery: These are fundamental surgeries in pediatric urology for: undescended testes, hydrocele, inguinal hernia, and penile surgeries.

- Hydrocelectomy and inguinal hernioplasty (open and laparoscopic)
- Orchiopexy (open and laparoscopic)
- Partial and radical orchiectomy
- Penoplasty

Hypospadias and disorders of sex organ development: We manage a high volume of hypospadias cases (over 300 cases a year). We have developed our own original technique for the treatment of severe hypospadias called the meatal island on-lay proximal transverse island flap (MIOPTI) and combined MIOPTI.

We also perform genital plastic surgery to treat children with disorders of sex organ development and have vast experience in this field.

- Hypospadias
- Vaginoplasty

Surgeries for stones: These include endourologic techniques including flexible ureteroscopy, percutaneous nephrolithotomy, and laparoscopy.

- Ureteroscopic ureterolithotomy and retrograde intrarenal surgery (RIRS)
- Percutaneous nephrolithotomy (mini-perc)

Bladder surgeries: These include surgeries for vesicoureteral reflux, duplicated system, and other structural bladder anomalies. Our robust surgical program offers diverse surgical experiences with open, endoscopic, and laparoscopic (transvesicoscopic) techniques.

- Ureteroneocystostomy (open and transvesicoscopic).
- Common sheath reimplantation (open and transvesicoscopic).

Kidney surgeries: Our surgical program includes varied surgical techniques; open, laparoscopic (conventional multiport, single port), and robotic surgery.

- Ureteropyelostomy (open, laparoscopic, and robotic).
- Pyeloplasty (open, laparoscopic, and robotic).
- Nephrectomy (open, laparoscopic, and single port).

Reconstructive surgeries: We also perform various reconstructive surgeries for treatment of pediatric neurogenic bladder.

- Fascial sling
- Artificial sphincter implantation.
- Augmentation cystoplasty (ileocystoplasty and seromuscular cystoplasty)

2. 2-year course

As part of our two-year training course, in the second year, those interested in basic science can participate in basic research. At present, our ongoing studies are conducted in renal physiology and neurogenic bladder function at the laboratory base level. Additionally, those interested in clinical study can participate in clinical research using our vast clinical database.