Urology in Singapore
An Interview with Prof Kesavan Esuvaranathan

From its beginnings in the early 1970s, the field of Urology in Singapore has undergone monumental transformation in the last four decades. We had the opportunity to talk to Prof Kesavan Esuvaranathan, Senior Consultant Urologist at the National University Health System (NUHS), about the past and future of Urology in Singapore.

**MG:** Can you tell us a bit about NUH's Urology department?
**Prof Kesavan:** The Division of Urology, within the Department of Surgery, was established in 1989. This grew into a Department of Urology, which officially opened in May 2001. The department has grown rapidly, averaging almost 10% annual growth in outpatient volume. The department now has 6 full-time, experienced consultants and senior consultants, subspecializing in uro- oncology, stone disease and endourology, renal transplantation, andrology and infertility, neurourology and voiding disorders. The department’s distinguishing characteristic is its strong academic focus and research programs which straddle basic science and clinical research. This focus has resulted in numerous competitive research grants, awards for research and international recognition for innovations in clinical care.

**MG:** You edited "A Decade of Urology in Singapore" in 1996. From then til now, another decade has come and gone. Can you tell us briefly about these 2 decades of evolution for Urology in Singapore?
**Prof Kesavan:** “A Decade of Urology in Singapore” chronicled progress made in the first 10 years of the Singapore Urological Association. I have since served as the Association’s president and am now Chairman of the Chapter of Urology, College of Medicine Singapore and thus, have been privileged to participate and witness the startling burst of development which has occurred in Urology in Singapore. We are a bantam-weight professional group in the heavy-weight league. Many of the senior urologists in Singapore are internationally very well known and have served at board level in Asian and international urological societies. We have achieved much of what we set out to do 10 years ago, largely because the urological community and the various hospital departments of urology have been united. The next logical step for Urology in Singapore will be the development of a national centre, which can compete with the high volume centres in the USA. Whether this should be a physical or virtual entity needs to be carefully considered.

**MG:** What plans do you have for your department in the next 5 years?
**Prof Kesavan:** The department’s primary goal is to deliver superior value to patients, whilst performing the NUHS tripartite mission of clinical service, education and research. We believe this can be achieved by maintaining our focus on quality. Good quality is actually less costly because of more accurate diagnoses, fewer treatment errors, lower complication rates, faster recovery and avoidance of unnecessary investigations and treatment.

The department faces three positive challenges: an increasing workload, new structured medical training programmes and the national biomedical research initiative. Our first response was to restructure our clinical processes and create dedicated teams and facilities targeted at specific disease management. This will achieve better efficiency, quicker learning and deepen our acquired experience. We are now crafting measures of clinical outcome and patient satisfaction to validate and fine-tune these new programs in uro- oncology, men’s health, renal transplantation and voiding dysfunction to name a few.

We have also prioritized upgrading of nursing skills by initiating urology specialist nursing training, which hopefully will grow into a national specialist nursing course. We have formalized our research program with regular meetings, brainstorming sessions and timelines for deliverables such as grant applications and publications. We are also in the process of recruiting more staff to support this infrastructure.

In 2013, we will be moving into a custom-designed Urology Centre within the new NUHS Medical Centre block, to be built above the MRT station. The new centre will optimize interactions for clinical care, teaching and research. It will deliver enhanced value to our patients and stakeholders.

**MG:** Where do you foresee Urology will advance towards in the next few years?
**Prof Kesavan:** I’m very excited about the future. Urology has been a star amongst surgical disciplines because it has been an early beneficiary of many advances in medical technology and drug discovery. Natural orifice surgery, non-invasive surgery (for kidney stones) and robot-assisted surgery first became standards of care within Urology. Simultaneously significant advances have occurred in the medical therapy of very common, distressing diseases such as erectile dysfunction and voiding disorders. Cure rates for urological cancers are better than for most other cancers.

So what will the future bring? I think we will see significant advances in prevention and treatment of kidney, bladder and prostate cancer, perhaps even non-invasive therapies involving targeted (tailored) therapies, gene and stem cell therapies and nanotechnology. We will also see a migration of most urologic operations to the day surgery setting because refinements in technique and technology will allow faster recovery. Research into urological diseases, especially cancer, will also create insight for the treatment of diseases in other fields.

My hope is that with a maturing understanding of the molecular basis and pathophysiology of urologic diseases, we will avoid overtreatment (prostate cancer is a prime example), improve real value and create access to optimal care in more communities. An example of the last is a program I am developing to bring timely diagnosis of bladder cancer to less developed communities in Asia where this common cancer is often diagnosed late.
MG: Tell us a bit about your concept of NUH’s Urology Department working with foreign Specialists such as Prof Studer from Switzerland. How do you hope for their knowledge and expertise in Urology to positively impact our local Urology departments?

Prof Kesavan: Professor Urs Studer from the University Hospital of Bern, Switzerland is the Visiting Yeoh Ghim Seng Professor to the National University of Singapore. He will be working on a regular basis at the National University Hospital. He is a renowned senior academic surgeon and creator of the most popular bladder substitute, the Studer neo-bladder. His centre is well recognized for its work in advanced bladder cancer whilst we are recognized for our work in superficial bladder cancer. In combining our expertise, we hope to develop a preferred, regional tertiary care centre for the management of bladder and other urological cancers. We also hope to develop close clinical and research collaborations with the University of Berne.

Professor Studer is also a positive role model for academic surgery. Giving young urologists in Singapore access to him will have a beneficial effect on our community. He will teach and demonstrate surgery at our upcoming Advanced Course in Surgery and Singapore’s annual regional urology conference, Urofair 2011. He also gives lectures and provides advice on specific cases for the local urologic community during his regular visits.

The Department of Urology intends to pursue a policy of developing bilateral ties with global centres of excellence and link these to developing institutes in Asia, for the benefit of our patients.

Bringing Urology to the Next Level

Neobladder Construction Expert Prof Urs Studer Visits NUHS

Internationally renowned bladder cancer specialist and neobladder pioneer Prof Dr Urs E. Studer is currently in Singapore to conduct lectures and surgical training courses on radical cystectomy and neobladder reconstruction.

Bladder cancer refers to any of several types of malignant growths of the urinary bladder, a hollow, muscular organ in the pelvis that stores urine. In the US, it is estimated that about 70,000 new cases are diagnosed each year, and while the prevalence is comparatively much lower in Asia and South America, it is ranked as the 9th most common cancer among males in Singapore.

Although there are a number of factors associated with an increased risk, smoking is regarded to be the single greatest risk factor for bladder cancer. It is more than two to three times more prevalent in men, and the incidence rates increase with age. Tumours are categorized as either low-stage, referring to bladder tumours that are non-invasive and can be easily removed with an endoscope, or high-stage, referring to 25-30% of bladder tumour cases that manifest invasive, destructive growth with high tendency to metastasise. In these cases, the best option for certain patients is to remove the entire bladder (cystectomy) and to construct a new bladder using tissues from the small intestine. Prof Dr Studer, an internationally renowned bladder and prostate cancer expert from the University Hospital of Bern in Switzerland, is a pioneer in this surgical procedure. He has performed more than a thousand cases of bladder cystectomies himself and about 600 bladder substitutes.

“When you take out the bladder, then the urine must go somewhere and usually, people have a bag attached through the skin. But 25 years ago, I discovered that we can make a reservoir out of the small bowel (see illustrations) and get this hooked up to the sphincter. Compared to the usual “bag” procedure, this is more convenient, less costly, less prone to infection, and allows the patients to live a close-to-normal life,” says Prof Studer.

“The urologists here in Singapore are already very proficient in urological surgery. I am here to teach refinement, not to teach something new. There are certain things one must pay special attention to, like how to manage the nerves which go to the sphincter muscle, which manages the outlet, or to know potential metabolic complications that may arise and other tricks that contribute to the success of a bladder institute.”

To construct the reservoir, the two medial borders of the opened U-shaped distal part of the ileal segment are oversewn with a single seromuscular layer.

The bottom of the U is folded over between the ends of the U, resulting in a spherical reservoir consisting of four cross-folded ileal segments.

In combining our expertise, we hope to pursue a policy of developing bilateral ties with global centres of excellence and link these to developing institutes in Asia, for the benefit of our patients.

Prof Kesavan Esuvaranathan is the Head of the Department of Urology and the Director of Research, Department of Surgery, NUHS. He is the Chairman of the Chapter of Urology, College of Surgeons, Academy of Medicine Singapore and the immediate past president of the Singapore Urological Association.

Prof Dr Urs E Studer is from the University Hospital of Bern, Switzerland and specializes in invasive bladder cancer, nerve-sparing pelvic surgery, ileal orthotopic bladder substitution and the timing of androgen deprivation treatment of prostate cancer. He is a honorary member of the AUA and EAU, as well as of the Swiss, German and Canadian Urological Associations, the EORTC GU group and the Asian Surgical Association. He is currently visiting at the Department of Urology of the National University Health System (NUHMS).