The Edge

Surgical Excellence through Advanced Robotics

Edition 1 | April 2014

Paving the Way for Excellent Clinical Outcomes

Surgeons now have access to state-of-the-art systems that replace open procedures with minimally invasive laparoscopic alternatives.

Read more

K. Subrahmaniam

From the CEO's Desk

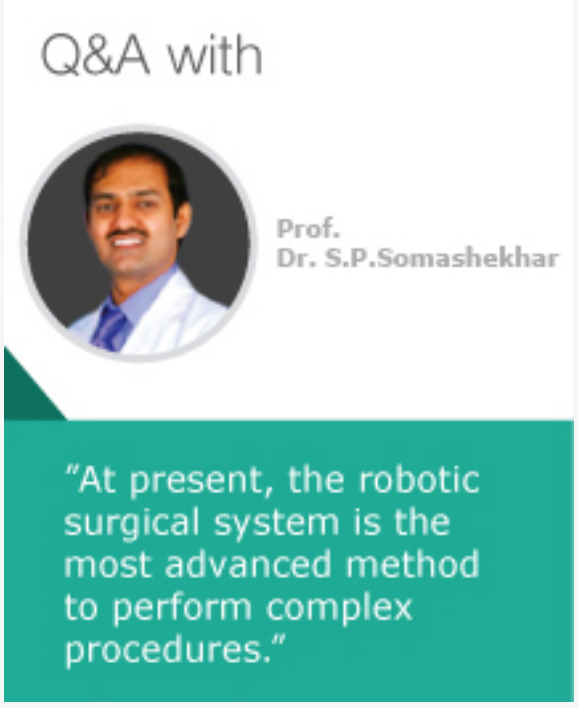
It gives me great pleasure to inform you that this is the premier issue of The Edge, the Vattikuti Technologies newsletter. This will carry news and events of interest for surgeons interested in robotic surgery.

Read more

Vattikuti Technologies Hosts Dr. Robert Cerfolio

A renowned professor of cardiovascular/thoracic surgery at the University of Alabama at Birmingham, Dr.Cerfolio was specially invited by the Vattikuti Foundation to participate in the Robotic Surgeons Council of India meeting on the 8th and 9th of February 2014.

Read more



Read more

Doctor's Corner

Dr. Rooma Sinha, Dr. Ananthakrishnan Sivaraman, and Dr. Santosh Shetty give us their views on the da Vinci® surgical system. This edition also features an article on robotic surgery by Dr. Mahesh Desai, Medical Director and Managing Trustee of the Muljibhai Patel Urological Hospital in Gujarat.

Read more

Case Study: Aster Medcity

Aster Medcity is equipped with first-of-its-kind advanced technologies and will take healthcare in India to international standards. Aster Medcity is bringing robotic and endoscopic surgeries to Kerala.

Read more

da Vinci® in the News

Independent study reveals robot-assisted hysterectomy delivers better results

Read more

Find out how the da Vinci® surgical system can be used to perform single-site, virtually scarless intra-abdominal hysterectomy

Learn more

European Urology releases VUI Robotic Kidney Transplant Video

Watch video

Vattikuti Technologies provides complete high technology solutions in healthcare and other industries. Vattikuti Technologies are the distributors in India for the da Vinci® surgical systems

manufactured by Intuitive Surgical, USA.

Paving the Way for Excellent Clinical Outcomes through High-Precision Robotic Surgeries

Surgeons the world over now have access to state-of-the-art systems that allow them to replace open procedures with minimally invasive laparoscopic alternatives.

However, critical to the success of any medical practice is the minimization of error. In an age of constant technological development, surgeons are constantly finding ways to enhance clinical outcomes and deliver the highest quality of patient care. At the forefront of this progress in the medical field is robotic surgery or, more precisely, computer-assisted surgical systems. These essentially are medical devices that enable surgeons to use advanced technology to manipulate surgical instruments through tiny incisions in the patient's body across a wide range of surgical procedures. Studies across the globe evidence the incremental success rate that robotic surgeries have enjoyed in procedures including prostatectomies, thyroidectomies and even partial nephrectomy.

A strategic investment in da Vinci® surgical systems will help you:

- Set new standards in patient satisfaction
- Ensure better clinical outcomes
- Achieve an increased economic return

With several installations already underway, Vattikuti Technologies is helping hospitals in India harness the precision of the state-of-the-art da Vinci® surgical system — the most well-known robotic surgical system, globally.

The da Vinci® system is the most advanced platform for minimally invasive surgery available in the world today. The system comprises three components—an ergonomic surgeon console, a patient side cart with interactive robotic arms and a video tower that houses dedicated system processors and a high definition 3D vision system. Its wristed, articulated instruments scale the movements of your hand to the micrometers, while eliminating tremors and facilitating a range of motion that helps you exceed the limitations of the

human hand. The enhanced 3D HD visualization gives you unsurpassed clarity for complex procedures. But that's not all. The system comes with dual console capabilities, allowing two surgeons to work together simultaneously.

We know you're committed to providing your patients with the best surgical care. And now, with the da Vinci® surgical system, you can take your efforts to the next level by adopting a proven, cutting edge approach to a wide range of complex surgical procedures.

The future of surgery is here. Are you ready?

Go back

From the CEO's desk

Dear Doctors

It give me great pleasure in informing you that this is the premier issue of the Vattikuti Technologies News Letter. This will carry news about the various events of interest for the surgeons interested in robotic surgery. We invite you to send in your articles, quotes and programs that will help add value to like-minded doctors. This newsletter will be sent to a host of surgeons and doctors who will be enthralled to know the happenings and developments in the robotic surgery space.

If you wish to participate in this newsletter and need to share any suggestions or news of interest in this regard, kindly email the same to vtnewsroom@vattikutitechnologies.com.

We look forward to hearing from you and would appreciate your feedback to further improve the quality and pertinence of this newsletter.

With regards
K Subrahmaniam
ks@vattikutitechnologies.com

Vattikuti Technologies honored to host Dr. Robert Cerfolio

Vattikuti Technologies recently had the pleasure of welcoming Dr. Robert Cerfolio to India. A renowned professor of cardiovascular/thoracic surgery at the University of Alabama At Birmingham, Dr. Cerfolio was specially invited by the Vattikuti Foundation to participate in the Robotic Surgeons Council of India meeting on the 8th and 9th of February. Dr. Mahendra Bhandari, CEO of Vattikuti Foundation, was present and helped organize the two-day meeting in Delhi during this time.

In addition to delivering a speech at the council, covering several aspects of his life, his career and his surgical accomplishments, Dr. Cerfolio also participated in three well-attended CMEs, demonstrating a number of procedures at three leading hospitals in New Delhi— two lobectomies at Apollo Hospital (coordinated by Dr. Arun Prasad), three lobectomies and a mediastinal lymph node sampling at Sir Ganga Ram Hospital (coordinated by Dr. Arvind Kumar) and one lobectomy at Medanta Medicity (coordinated by Dr. Ali Zameer Khan).

The CMEs were very successful and all the participants were excited to learn new techniques, not to mention the advantage of discussing robotic surgery with the visiting surgeon. Here, Dr. Cerfolio answers some of the participants' questions on robotic surgery.

What conditions would you recommend robotic surgery for?
Lung cancer, esophageal cancer, mediastinal tumors and thymic cancer.

Has the number of patients seeking robotic surgery increased over time?
Yes—by around 15-20 patients every year.

How many procedures have you completed with the robotic surgery system?

I have personally completed over 940 robotic operations. Include those completed with my two partners, and the count stands at over 1050 surgeries.

What is your advice to fellow surgeons interested in adopting robotic surgery?
Fellow surgeons need to follow the very precise robotic surgery adoption pathways that we have written and published.

Is there anything else about robotic surgery that you'd like to share with us?
Robotic surgery is a team event—a "team sport" even—with great victories if we all work together and great defeats if we do not. It requires a surgical team that has vast experience in general thoracic surgery and who are really dedicated to just this kind of surgery, not cardiac or general surgeries but who are extremely committed to only general thoracic surgery, if they are to do very well with lung cancer surgeries.

Dr. Robert James Cerfolio

Go back

Q&A with Prof. Dr. S.P.Somashekhar

Prof. Dr. S.P. Somashekhar
Chairman, Manipal Comprehensive Cancer Centre, Manipal Health Enterprises
HOD Department of Surgical Oncology
Adjunct Professor, KMC, Manipal University
Consultant, Surgical & Gynec. Oncologist & Robotic surgeon

How did you come across the use of robotic surgery system?
At present, the robotic surgical system is the most advanced method to perform complex procedures. It is a boon for both patients and surgeons. I came across it through Vattikuti Technologies and the Vattikuti foundation, when I visited the US for robotic training.

What made you take to the robotic surgeries?
I am a hard core Open oncosurgeon, and have been performing complex oncosurgeries over the last 12 years and unfortunately, in oncology, it is said bigger the surgeries and bigger the incisions : Treatment is more dangerous than the disease itself and laparoscopy was, technology-wise, inadequate to perform complex cancer surgeries.

Dr. Somashekhar

Thus I was in search of possible minimal invasive techniques for complex cancer surgeries when this robotic surgery was made available in our hospital, and it revolutionized our oncology surgeries. Robotic surgical technology represents the most significant advancement in minimally invasive surgery, thanks to a new breakthrough surgical technology. It allows surgeons to perform complex and delicate operations by manipulating the robotic arms. The benefit is more pronounced in elderly patients with multiple co-morbidities.

What are the various things you could not have done without the robot or was very difficult to do otherwise?
While performing pelvic surgeries, better safeguarding of nerves helps in maintaining normal bladder and erectile functions. For esophageal cancers, open surgery entails cutting the rib to perform the surgery. With robotic technology, cutting of rib is not required, so rehabilitation is better and faster. It also helps to overcome challenges associated with adhesions from previous operations.

What are the benefits of robotic surgery to the patient?
Patients typically experience significantly less pain than those undergoing conventional "open-incision" procedures. They enjoy shorter hospital stay, less risk of infection, less blood loss, fewer transfusions, less scarring, lesser chances of hernia, faster recovery and a quicker return to everyday normal daily activities. There is also the advantage of an increased chance of preserving the rectal sphincter in rectal cancers, alongside no ICU admission and, consequently, a speedy return to normalcy and work.

What are the indications to perform robotic surgery?
a. Gastrointestinal cancers, esophageal cancers, gastric cancers, colorectal cancers.
b. Urological cancers: Renal cancer, adrenal cancer, prostatic cancer and bladder cancer.
c. Head and Neck cancer: Scar-less Thyroid cancers and TORS – (Trans Oral Robotic Surgery) for Oral cancer, Laryngeal cancer & Oropharyngeal cancer
d. Thoracic cancer: Lung cancer and thymus cancer
e. Gynecological Cancers: Uterine cancers and cancer cervix
f. TORS and scar-less Robotic thyroidectomy is possible only through robot
g. Complex Sphincter preserving rectal cancer surgery and avoidance of permanent Stoma
h. Complex gynecological cancer surgeries and high Para-aortic lymphadenectomy is possible only with robotic technology

Has the number of patients seeking robotic surgery increased over the past two years?
The number of people preferring robotic surgery has almost doubled. Patients from all over India are interested in robotics. With the tremendous benefit to patients, very obvious with robotic systems, now we are noticing lot of interest from patients living abroad too. From all over India, patients are coming to our hospital for sphincter preserving rectal cancer robotic surgery and through our International Health tourism lot of patients come for scar-less robotic thyroidectomy too.

How many procedures have you done with the robotic surgical system?
At Manipal Comprehensive Cancer Center, the team of surgical oncologists and robotic Surgeons under my leadership have been trained in robotic surgery in USA. We have performed over 300 robotic oncological surgeries. Complex surgeries like radical hysterectomy with pelvic and para-aortic lymph node dissection, colorectal surgery, esophagectomy, gastrectomy and nephrectomy have been performed. Recently a trial comparing open surgery with robotic surgery in gynecological and rectal cancers conducted at Manipal Comprehensive cancer center has been published, which proved the superiority of robotic surgery. Individually I have performed around 200 Robotic complex surgeries

What will you recommend to a fellow surgeon interested in taking up robotic surgery?
The future of complex surgical procedures is robotic surgery. It is easy to learn the usage of robot, and therefore the transition to robotic surgery from open surgery is smooth, easy and within a short period. It has a short learning curve unlike advanced laparoscopy, which has a very steep long learning curve and where it is not possible to perform complex oncology procedures. The benefit to the surgeon is also many-fold – decreased physical and mental fatigue with a lower long term burnout syndrome which ultimately translates to better quality of surgery and therefore better outcome for the patients. Robotic surgery not

only benefits the patient but also benefits the surgeons, with less tiredness and less occupational hazards, like neck pain, joint stiffness, making it easier to preserve your body for a long surgical career, **unlike, getting burnt out as in laparoscopy surgery, where, "the patient benefits, but the surgeon suffers"**

Any other point you need to share?
The future of surgery is the robotic system and I strongly urge all my colleagues and juniors to invest time in learning robotic surgery and appreciate firsthand the tremendous benefits it offers. Don't, be left out, don't miss the train and don't repent later.

Go back

Doctor's Corner

Dr. Rooma Sinha
Senior Gynecologist, Laparoscopic & Robotic Surgeon, Uro-Gynecologist Apollo Health City, Jubilee Hills, Hyderabad

"I had been reading and analyzing scientific literature on robotic surgery for a few years and was alert to the papers published regarding its role in gynecological surgery. Once we had the system installed at our institution in July 2012 and I went for the initial training session, I fell in love with the 3D image. It felt like I had almost entered the pelvis to perform my surgery. The ease with which I could complete my surgical steps with the help of endowrist instruments was revolutionary. Having performed all types of laparoscopic surgeries during the last 15 years, I was certain that this was the next logical step in minimally invasive gynecological surgery. Then came the proctorship. Dr. Meenakshi Jain's enthusiasm and expertise encouraged us to perform our initial surgeries with ease. Her enthusiasm rubbed off onto me. I started doing cases where I

Dr. Rooma Sinha

felt robotic assistance could give additional benefit to my patient than my laparoscopic skills.

And the journey began…

I was convinced that this technology was here to stay. The two big challenges we face today is the bulk of the equipment and its cost. But were they not the two main concerns with laparoscopic surgery about 2 decades ago? Today, one cannot do gynecological surgery without offering laparoscopic techniques. I am sure with time we will be able to overcome these challenges as well. In the field of benign gynecology, the number one procedure that I recommend today is myomectomy, since this is a suture intensive surgery and suturing is the best part of robotic assistance. Thus, robotic assisted myomectomy ensures outcomes like open surgery with all the benefits of a minimally invasive approach. Moreover, robotic assistance helps me push my boundaries and perform minimally invasive gynecological surgeries, which I would have not taken up earlier. I have personally completed 40 robotic surgeries and I would encourage my fellow gynecologists to use this technology to convert their open procedures to minimally invasive procedures, which are the need of the hour. The learning curve is much less steep than laparoscopic surgery. My recent visit to Henry Ford Hospital and Providence hospital in Detroit also helped me understand that once the team is experienced, the docking and initial set up is no less than a laparoscopic surgical set up and cases can be done smoothly and in quick succession."

Dr. Ananthakrishnan Sivaraman
Consultant Urologist and Robotic Surgeon Apollo Hospitals – Chennai Urology Clinic

"I first sat on the da Vinci® system at a BAUS (British association of Urological surgeons) conference in 2007. At the time, I was working in London and was doing quite a bit of laparoscopic surgery. Within a few minutes of using the system, I felt that this was the next logical step in minimally invasive surgery.

I could see that it needed a lot of hands-on training to be good at this and a sufficiently high volume centre with good training opportunity which was not available at that point in the UK. So, I started looking at videos of robotic prostatectomy by various surgeons and the video that appealed to me most was the one

Dr.

by Dr. Vipul Patel from Florida. Then to get myself into the fellowship, I had to pass all three steps of USMLE. It was a major leap of faith, passing USMLE and getting into the fellowship, whilst facing skepticism from a lot of well-wishers who could not see the potential of the da Vinci® system. At that time India had only two robots. Luckily it all worked out and I got myself into one of the highest volume centres (Global Robotic Institute) in the world under an exceptional mentor in Dr. Vipul Patel.

Ananthakrishnan Sivaraman

Having trained as an open surgeon during MCh and laparoscopic surgery in England, I would be hard pressed to perform open or laparoscopic surgery if the robotic option was available. If cost was taken out of the equation, I am sure that all of us would agree that this is the way forward.

We perform the entire gamut of urological surgeries including robotic partial nephrectomy, prostatectomy, cystectomy and reconstructive procedures. Prostatectomy and partial nephrectomies are the predominant surgeries. Chennai Apollo has performed more than 420 robotic surgeries over the past year. I also operate in Delhi and Calcutta as proctor for surgical teams starting out in robotics.

There is overwhelming interest in robotics among the younger generation and I feel it is a crime if the youngsters are not exposed to it and the seniors do not support it. As the volumes increase the cost is bound to come down.

We have already done five live demonstrations for conferences in India and more to follow. I am more than happy for new entrants in the field to come and observe and learn techniques, tips and tricks so that they can breach the learning curve earlier. If India does not wholeheartedly embrace this technology now, we will be considered as laggards."

Dr. Mahesh Desai
Medical Director & Managing Trustee Muljibhai Patel Urological Hospital (MPUH), Nadiad, Gujarat

Robot: A tool to enhance outcomes in urologic surgical arena

Dr. Mahesh Desai believes robotic surgery equals better clinical outcomes

"Every life deserves world class care". This is the policy statement of Muljibhai Patel Urological Hospital (MPUH) in Nadiad, Gujarat. The hospital strives in letter and spirit to follow this principle. A lot has been written and debated about the advantages of the robot as a surgical tool. The addition of da Vinci in the armamentarium of the hospital has helped us in providing world class care for our patients. We have been seeing experts across the globe operating using the robot since 2005 which included the team from University of Southern California, Los Angeles. In September 2010 we commissioned the robot at MPUH. This was the first installation in Gujarat. As a part of orientation and mentoring we attended the orientation course at Strasbourg, France. This was followed by serial visits by Dr. Inderbir Gill and Dr. Mihir Desai who graciously accepted to be our proctors and mentors.

As a part of continuing education we regularly arrange workshops and meetings at our facility, Jayramdas Patel Academic Centre, where we invite internationally renowned robotic surgeons who discuss, mentor and demonstrate the technique of robotic surgeries. The panelists invited included Dr. Craig Peters, Dr. Vipul Patel and Dr. Mani Menon. Robotic surgeons from MPUH also visited various centers in the United States to acquire skills in robotic surgeries.

We started performing robotic surgeries in December 2010. We have performed 430 surgeries till date. Robotic radical prostatectomy, robotic partial nephrectomy and robotic pyeloplasty form the bulk of our work. The accompanying table and graph show the trends at MPUH with the addition of the robot to our armamentarium.

As it is often said that "what you see better - you can do better". Along the same lines the robot offers unprecedented vision, dexterity and precision which translates into precise urethrovesical anastomosis and nerve preservation both being surrogate markers in this operation. Our series of over 120 cases of robotic radical prostatectomy shows improved continence as compared to contemporary series of laparoscopic radical prostatectomy.

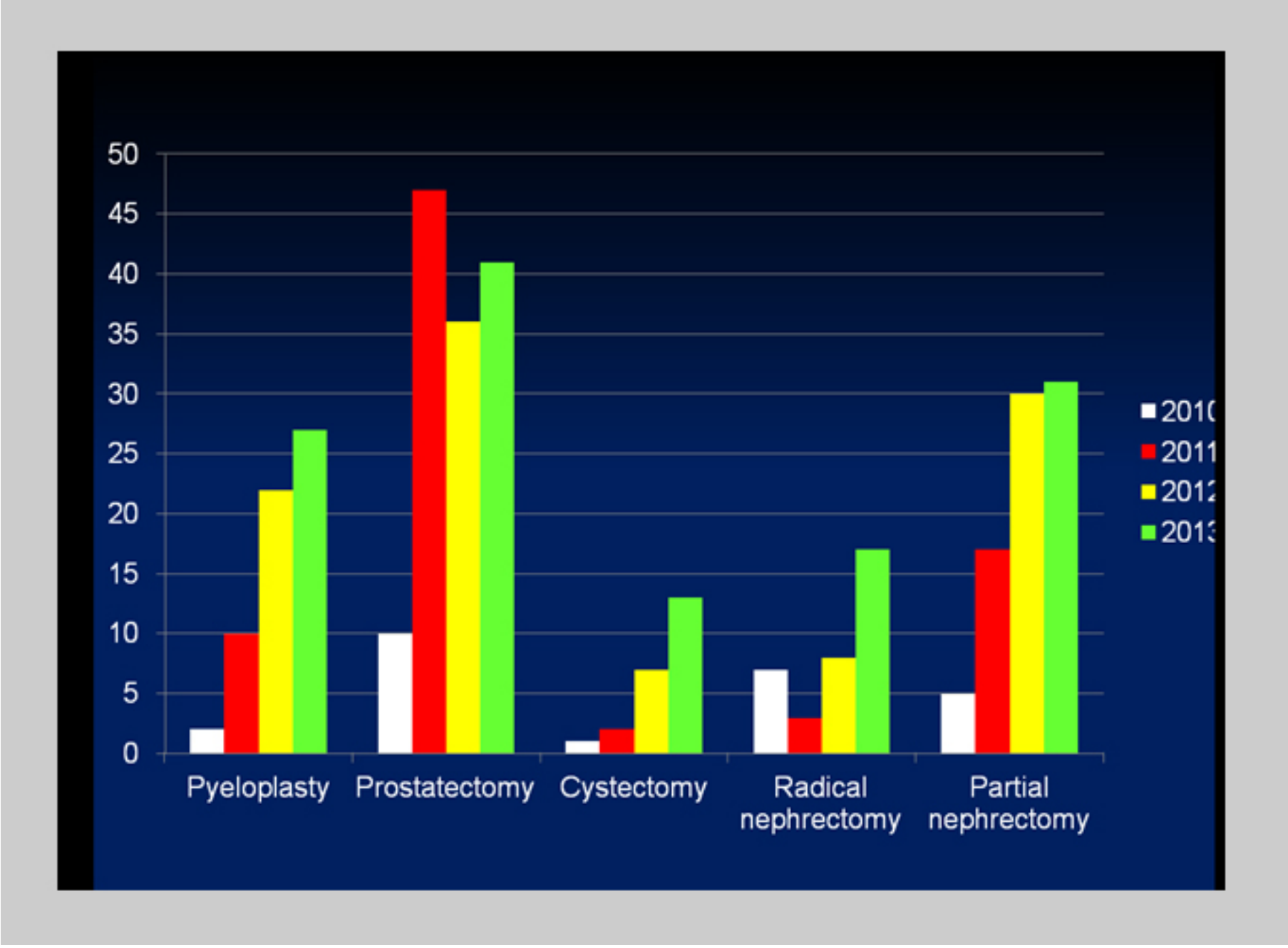
We have published our results comparing laparoscopic versus the robotic approach (JMAS 2013). The salient features in favor of the robotic approach included negative surgical margins in all patients, shorter clamp time (WIT) and ability to treat complex tumors (higher renal Nephrometry score more than 10). In addition, subjectively we feel that the robotic platform offers edge over laparoscopic surgery in upper polar and posterior tumors. In our series we have also done seven partial nephrectomies under zero ischemia thus avoiding the need of clamping the hilar vessels. This approach (zero ischemia) is employed at MPUH for hilar and medial renal tumors.

Three-month old Kavya was presented to us with a pelviureteric junction obstruction (UPJO). We performed a robotic pyeloplasty on her with 5mm robotic instruments. A follow up renogram showed good drainage. Since then we have performed over 20 pyeloplasty in children weighing less than 15 kg with excellent results. On comparison with a similar age matched cohort done laparoscopically, we found that the operative time was significantly less potentially leading to faster and quicker recovery and convalescence. In addition, we have also performed robotic re-implantation with or without tapering robotic diverticulectomy in pediatric patients.

On the innovations front, we along with Dr. Menon's team innovated and revisited the technique of anatrophic nephrolithomy under hypothermia using the robotic platform .We used a indigenously made bag and syringes for attaining hypothermia. The success of this procedure may open new frontiers in application of robotics in managing stone disease.

The team from the University of Southern California (USC) led by Dr. Gill and Dr. Desai has mentored our team in the nuances of radical cystectomy and completely intracorporeal construction of neobladder. We have now performed up to 20 cases.

We at MPUH feel that the robot holds key to the future in the surgical arena. We feel that robotic surgery program needs a team effort. Towards this end we have developed a team which includes Dr. Arvind P Ganpule, Vice-Chairman of the Department of Urology. He is also the Chief of the Division of Robotic Surgery at MPUH. His area of special interest is upper tract robotic surgery, whilst Dr. Shashikant Mishra is the chief of uro-oncology services and his area of special interest is lower tract robotic surgery



ROBOTIC ASSISTED SURGERIES .25-09-2010 To. 04-02-2014

ROBOTIC SURGERY -- MPUH DATA

NO.	Procedure	NOS
1	ROBOT ASSISTED CYSTECTOMY	11
2	ROBOT ASSISTED CYSTECTOMY & NEO -BLADDER	10
3	ROBOT ASSISTED CYSTECTOMY & ILEAL CONDUIT	3
4	ROBOT ASSISTED PARTIAL CYSTECTOMY	3
5	ROBOT ASSISTED HYSTRECTOMY	1
6	ROBOTIC ASSISTED RADICAL NEPHRECTOMY	37
7	ROBOTIC ASSISTED PARTIAL NEPHRECTOMY	84
8	ROBOTIC ASSISTED PYELOPLASTY	64
9	ROBOTIC ASSISTED NEPHRO - URETERECTOMY	5
10	ROBOTIC ASSISTED PYELOLITHOTOMY	3
11	ROBOTIC ASSISTED HEMI NEPHRECTOMY	1
12	ROBOTIC ASSISTED ADRENALECTOMY	9
13	ROBOTIC ASSISTED PROSTATECTOMY	136
14	ROBOT ASSISTED URETERIC REIMPLANTATION	16
15	ROBOT ASSISTED URETEROLYSIS	4
16	ROBOT ASSISTED URETERO-URETEROSTOMY	10
17	ROBOT ASSISTED URETEROCALYCOSTOMY	3
18	ROBOT ASSISTED ILEAL Ureter	1
19	ROBOT ASSISTED RECTOVESICAL FISTULA REPAIR	1
20	ROBOT ASSISTED RENAL DENERVATION	1
21	ROBOT ASSISTED ANATROPHIC NEPHROLITHOTOMY	7
22	ROBOT ASSISTED BOARI'S FLAP	2
23	ROBOT ASSISTED URETEROLITHOTOMY	1
24	ROBOT ASSITED BLADDER DEVERTICULECTOMY	1
25	ROBOT ASSISTED V.V.F REPAIR	9
	TOTAL NOS.	423

Dr. Santosh Shetty
COO, Kokilaben Dhirubhai Ambani Hospital, Mumbai, India

"The Kokilaben Dhirubhai Ambani hospital has always believed in investing in technologies which are the standard of care. It was in this connection that the hospital decided to go for the da Vinci® robotic surgery technology.

Dr. Santosh Shetty

With a multidisciplinary full-time consultant system and a major focus on cancer, we felt that the robotic surgery program would help in further enhancing the stature of the hospital as a facility which offers the latest treatment modalities. The hospital currently offers robotic surgeries in the areas of uro-oncology, gynecology (benign and malignant), gastrointestinal surgery, thoracic surgery and head & neck surgery (trans-oral and trans-axillary).

The hospital has conducted multiple CME programs for the general physician community to create awareness amongst the medical community and to also communicate the benefits of the use of this high end technology.

In a very short span of around 18 months, the hospital has already done over 350 surgeries with the da Vinci® technology. There is a growing trend of patients opting for robotic surgery now in view of the multiple benefits it offers."

Go back

Case Study: Aster Medcity

Aster Medcity: Iconic Healthcare Destination

Aster Medcity, spearheaded by Dr. Azad Moopen, Chairman and Managing Director, Aster DM Healthcare, is an upcoming iconic integrated medical township, built in God's own country Kerala, Kochi. Aster DM Healthcare is one international group, which in its quest for excellence provides the highest quality of healthcare facilities in the geographies it operates in.

Set to support the medical requirements of the state as well as the country and also provide a venue for medical tourism to the country, Aster Medcity is equipped with first-of-its-kind advanced technologies, capable of treating any disease and will take healthcare in India to international standards. It will feature some of the most advanced technologies known to science. Some of these technologies were never seen before in India and APAC.

Dr. Harish Pillai, CEO of Aster Medcity— an upcoming healthcare destination in Kerala

One of the technologies that Aster Medcity is proud of bringing to Kerala is robotic and endoscopic surgeries – da Vinci® surgery. The da Vinci® surgical system is a sophisticated robotic platform designed to expand the surgeon's capabilities and offer a state-of-the-art minimally invasive option for major surgeries. da Vinci® Surgery is used by 100% top ranked U.S. Hospitals. At Aster Medcity, this procedure will be used for precision and accuracy in surgical procedures like cardio/onco surgery, gynecology and urology, which would reduce hospitalization cost and stay. The patient spends fewer days in the intensive care unit and the procedure is less painful and results in quicker recovery. At Aster Multi-Specialty Hospital the focus is on "care delivered with compassion", with an emphasis on making the patient feel at home rather than at a hospital."

Go back