THE EDGE

Surgical Excellence through Advanced Robotics May 2016

Cutting Edge Surgery

From the CEO's Desk

It was a great experience to meet over a hundred surgeons at the recently concluded Robotic Surgeons Council meeting at Apollo Indraprastha Hospital, New Delhi on 8 and 9 April. As a recent entrant into the world of Robotic surgery, it was heartening to see the enthusiasm and verve to adopt new technology amongst the surgeons' community! I would like to thank Apollo Indraprastha Hospital for hosting this event and making it a success.

Some major events in Robotics were organized in the last quarter- starting with a unique Master Class in Robotic Pediatric Urology, the first of its kind in the country, organized by Dr. Sripathi of Apollo Hospital, Chennai in January. In February, the Urology department of PGIMER, Chandigarh held the prestigious International Live Operative Workshop, led by Dr. Mandal and his team. Most urologists in the country were associated with this workshop and I am happy to say that Vattikuti Technologies had a large team at the venue to promote the da Vinci systems to the participants.

During the Robotic Surgeons Council meeting at New Delhi, the Vattikuti Foundation presented scholarships to 32 students who were chosen for their interest and enthusiasm in Robotic surgery. This is one of the largest scholarship program seen in this field. Congratulations to all the recipients and we hope you build a great career as Robotic surgeons.

Gopal Chakravarthy
CEO

Milestone Snapshots

Kokilaben Dhirubhai Ambani Hospital, Mumbai achieved a major landmark by accomplishing 1000 robotic surgeries.

KDAH commenced their Robotic Surgery program on 28 May 2012 and not only has it been a very successful program over the years but has also consistently delivered by adapting to new techniques and by expanding their base consistently.

We at Vattikuti Technologies congratulate all the Robotic Surgeons and the administration of KDAH.

Congratulations to
Dr Rooma Sinha
Apollo Hospitals, Hyderabad
for achieving the landmark of 100 Robotic Procedures

Dr Rooma Sinha along with Medical Superintendent Dr Ravindra Babu, Senior Anaesthetists & Senior OT staff

Dr.Venket Sripathi
MS MCh FRACS
Senior Consultant Pediatric Urologist
Apollo Children's Hospital
Chennai

Masterclass in Robotic Pediatric Urology at Apollo Hospitals, Chennai

This was a live operative workshop spread over two days - January 23rd and 24th. The surgeries were broadcast to Hotel Accord Metropolitan where nearly one hundred surgeons for all over India (paediatric surgeons and urologists) were in attendance.

Dr Mohan Gundeti from Comer Children's Hospital in Chicago was the lead faculty and we managed to demonstrate 6 surgeries over two days - pyeloplasty in a two month old infant, heminephrectomy in a one year old, mitrofannof appendico-veiscostomy in a 13 year old, prostatic utricle excision in a 11 year old, re-implant in a 8 year old and nephrectomy in a 1 year old.

All aspects of the procedure from position to padding to trocar placement to instrument selection and steps of the procedure were shown in detail. In addition on both days at the end of the surgeries the console was wheeled into the corridor and fifty registrants (25 on each day) were allowed to sit on the console and experience the immersive vision for themselves. They were guided for 10 minutes on a couple of exercises by the Vattikuti engineers and clinical specialists.

The response and feedback from the delegates was fabulous.

This was a first of a kind event in the country on pediatric robotics and it received excellent press reviews as well.

Pediatric Robotics is well and truly underway.

Event Supported by Vattikuti Technologies in association with Apollo Hospitals, Chennai

Dr. Jagdishwar Goud Gajagowni
Clinical Director Robotic Surgery
Krishna Institute of Medical Sciences
Secunderabad, Telangana, India.

Short Term Outcome of Robotic Radical Esophagectomy: An Indian Experience

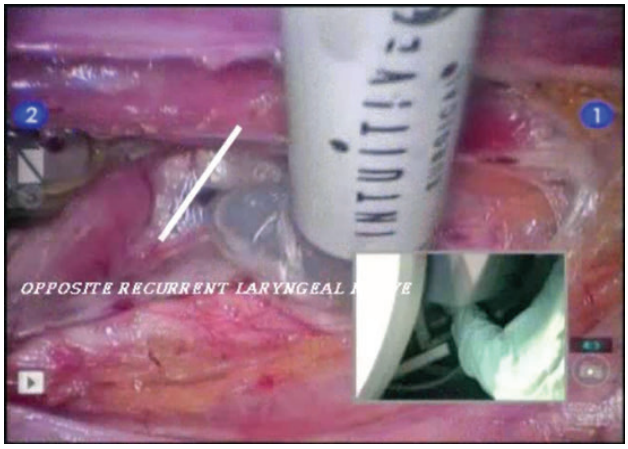
KIMS Hospital, Secunderabad, India.
Jagdishwar Goud Gajagowni, Rahul S Kanaka, .M.B.Vikas, Nisha Buchade, Sahil Gupta

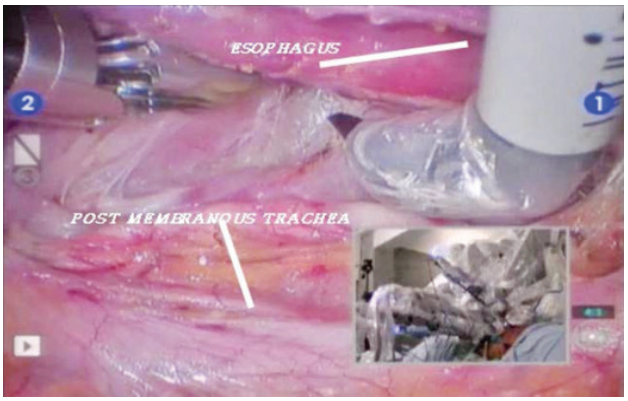
Background:

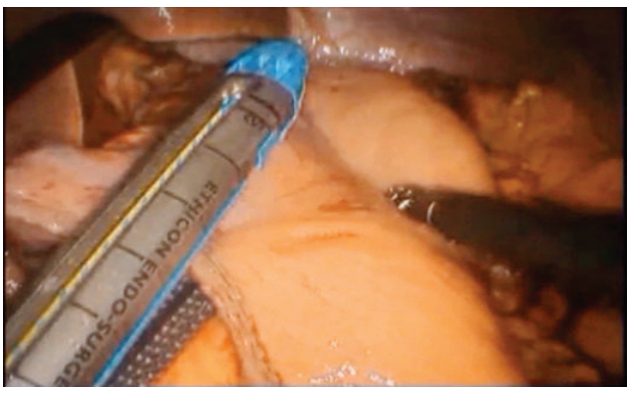
Carcinoma of esophagus is eighth most common cancer worldwide and is the sixth leading cause of cancer related death. Most patients present with advanced disease at diagnosis and have a dismal overall 5 year survival of 30%. Despite all the shortcomings, esophagectomy with 3 field lymphadenectomy offers the best option for cure in early-stage esophageal cancer and provides superior local control in locally advanced disease.

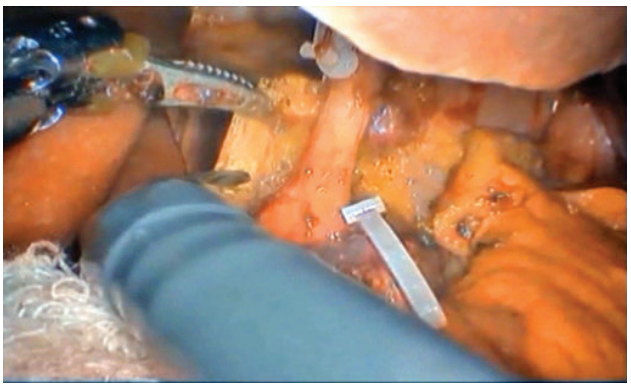
Methods:

This is a Prospective Nonrandomized analysis of consecutive 68 operable cases of carcinoma of esophagus performed at Krishna Institute of Medical sciences, Secunderabad-INDIA during study period from Aug 2011 to Feb 2016. Institutional ethical committee approval was taken. Results were analyzed by T-Test and ANOVA using Windostat Version 9.2.









Results:

RESULTS-Robotic esophagectomy with 3 field lymphadenectomy				
Duration of Surgery in minutes	208(135-275)		Cardio-pulmonary complications	2.9%
Docking time in minutes	13.7(10-20)		RLN injury	5.88%
Blood loss in ml	182(110-300)		Anastomotic Stenosis	8.82%
Lymph node yield	16.5(6-28)		Anastomotic Leak	0%
Positive nodes	1.41(0-13)		90 days Mortality	2.9%
RLN node positivity	25%		R0 resection rate	98%
Morbidity	22.0%		Hospital stay in days	9.78 (5-24)

Discussion:

Laparoscopy has inherent limitations like a two dimensional image, difficulty to perform complex maneuver, amplification of natural tremors, camera man fatigue with abrupt movement of camera and a long learning curve . The robotic system has the advantage of dexterity, ability to perform complex maneuver, three dimensional vision, absence of tremors and a short learning curve.

During esophagecomy, we found that recurrent laryngeal node dissection especially on the opposite side and splenic node dissection could be performed with accuracy and preservation of vital structure. Approach to aorto-pulmonary window and subcarinal region was also safe and easier with robotic approach.

The results of our study shows that robotic esophagectomy is as effective as thoracoscopic esophagectomy and due to better understanding of anatomy, dexterity of instruments and short learning curve we found blood loss and operative time was short and a higher lymph nodal yield could be achieved in robotic approach.

Milestone Snapshot

Asian Cancer Institute, Mumbai - formerly known as Asian Institute of Oncology, completed its 100th Robotic surgery in March 2016

Vattikuti Technologies Congratulates the Administration and team of Robotic Surgeons at ACI

Dr. Somashekhar S.P.
MS, MCh, FRCS.Ed
Chairman Oncology MHEPL & HOD,
Consultant Surgical Oncologist & Robotic Surgeon
Manipal Comprehensive Cancer Center.

Title:
A detailed analysis of the learning curve: Robotic assisted Type-I extrafascial Pan hysterectomy with pelvic and high paraaortic lymphadenectomy for endometrial cancer – Single institution first Indian Prospective Study

Place:
Manipal Vattikuti Robotic Center, Bangalore, India

Period:
Year 2011-2013

Authors:
Somashekhar S P and Sean S Jacob

Study:
Prospective non-randomised Observation study

Aim and Objectives:
To analyse learning curve for both Surgeon (surgeon console time) and bed side team (docking time) Robotic assisted Type-I extrafascial Pan hysterectomy with pelvic and high paraaortic lymphadenectomy for endometrial cancer, in an Indian quarternary cancer care center

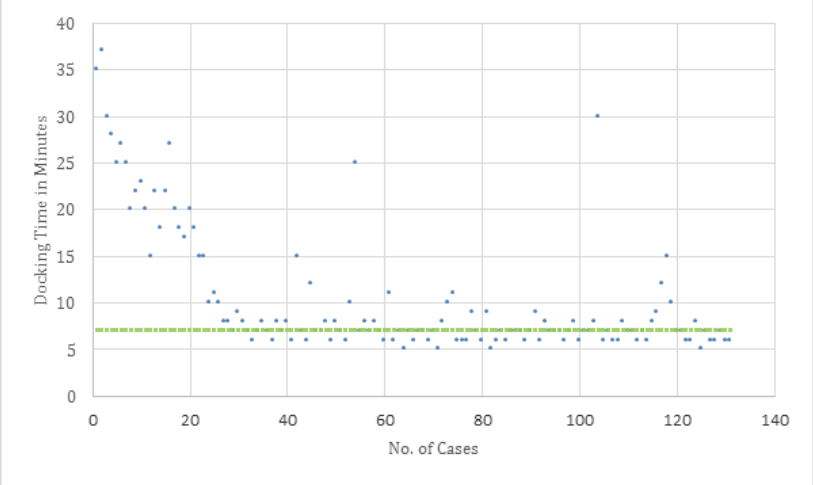
Materials and Methods:
In a single quaternary care Indian cancer institution, the segmental docking time and operative time on all initial 131 consequetive patients who underwent Robotic assisted Type-I extrafascial Pan hysterectomy with pelvic and high paraaortic lymphadenectomy for endometrial cancers were prospectively collected and analysed. Segmental time taken for docking and time as surgeons console and number of lymphnodes retrived in pelvic and paraaotic lymphadenectomy in consequetive cases were collected, compiled and statastics were worked out. Data was analysed under five parameters - docking time, surgeons console time, total combined time taken for each procedure and number of lymphnodes retrived in pelvic and high paraaortic lymphadnectomy specimens. The point at which the slope of the curve becomes less steep for operative times was plotted for docking time, surgeons console time and total combined time of procedures. For lymphnodes retrival data, the point at which (as per AJCC TNM staging) the time taken to reach, recommended minimum number of lymphnodes at each segment of Pelvic and Paraaortic lymphadnectomy was plotted and analysed.

Team:
Same surgeon in all cases at Surgeon console of *da Vinci* S robot
Patients side team: same nurse, same assistant doctor and same technician

Type of Surgery:
Robotic assisted Type-I extrafascial Pan hysterectomy with pelvic Lymphadenectomy and high paraaortic lymphadenectomy for high risk endometrial Cancers

Results:
Target docking time of 7 minutes was achived at 29th case. From the above graphs, we could see that there are spikes in the docking time even after the 100th case.
Target surgeons console time of 180 minutes was achieved at 12th case and thereby consistently maintained at 180 minutes or less.
Cusum chart analysis is an effective and powerful statistical tool for determining if and when a change in a data set has occurred. The direction of cusum line changes at 12th case, which is the indication that surgeon docking time has started reducing, thus it's the cut off point of learning curve. Futher the cusum line maintained the downward trend signifying that the sugeon console time consistently kept lower than the target time.
Target number of Pelvic node 12 was achieved by 9th case and consistently more number of pelvic nodes were removed.
Number of Para Aortic Lymph nodes varied widely. Target number of Para Aortic Lymph node 10 was achieved at 18th case. Even after achieving the target, the variation was widely seen.

In this analysis Docking time of 7 minutes and Surgeon time of 180 minutes was considered as the cutoff point.

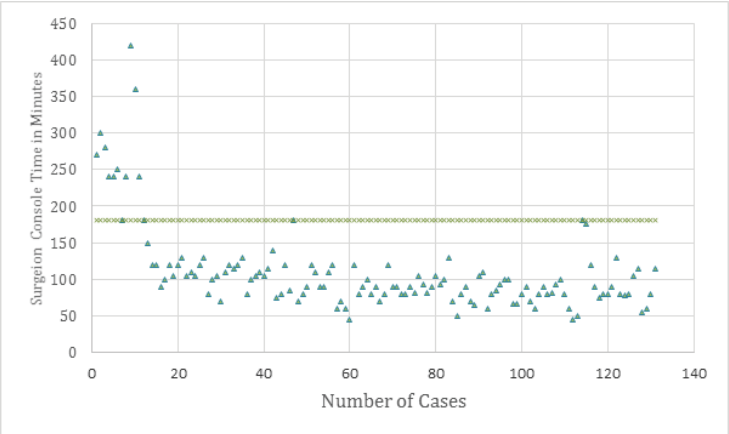


Above graph shows the docking time for each cases. Green line shows the target docking time of 7 minutes which was achieved at the 29th case. From the above graph, we can see that there are spikes in the docking time even after the 100th case. This may be due to size of the patients, patients cooperation etc.

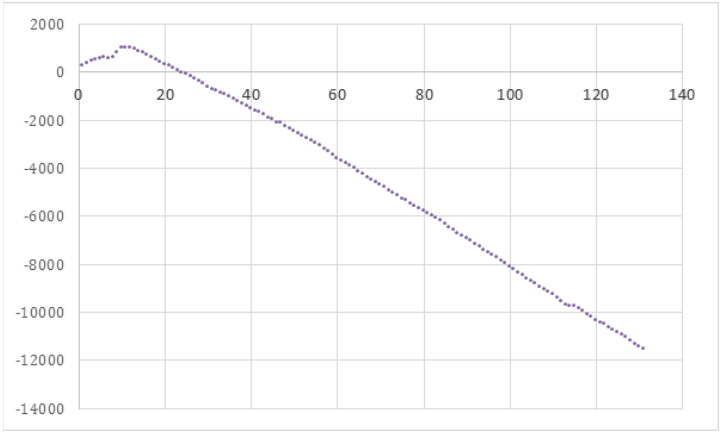
Conclusion:

In our first Indian study, Robotic assisted Type-I extrafascial Pan hysterectomy with pelvic Lymphadenectomy and high paraaortic lymphadenectomy for high risk endometrial cancers, we noted that proficiency for docking time of 7 minutes was achived at 29th case and for surgeon console time of 180 minutes was achieved at 12th case and thereby consistently maintained at 180 minutes or less and adequate number of pelvic lymphnodes retrival of 12 was achieved by 9th case and consistently more number of pelvic nodes were removed. Paraaortic lymphnodes retrival was after the 18th case. However the efficiency further continued to improve over time with increasing number of procedures.

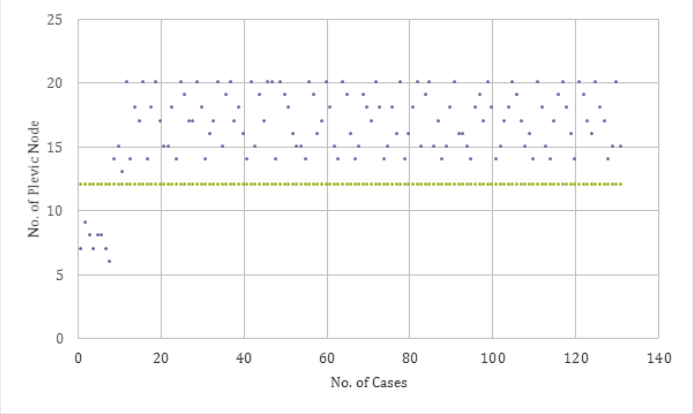
This shows that the minimum number of cases required to consistently pass the learning curve and that it's a team work with proper coordination between the docking team (technichian, assistant and nurse) and the surgeon and it helps to increase both proficiency and efficiancy in building a team for robotic assisted surgery. The direction of cusum line changes at the 12th case, which is an indication that surgeon docking time has started reducing, thus it's the cut off point in learning curve.



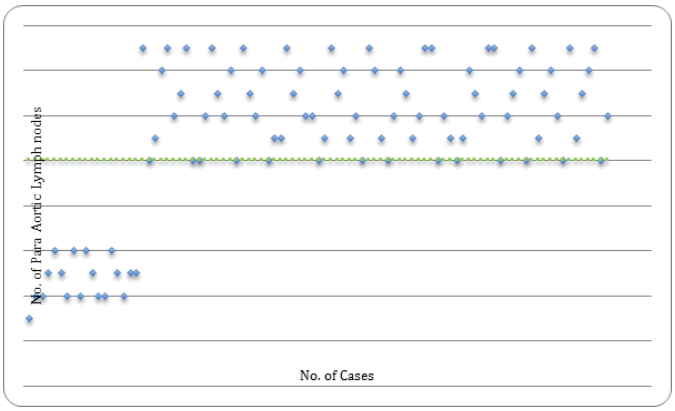
Above graph shows the Surgeon's console time in minutes for each case. Target surgeon's console time of 180 minutes was achieved at 12th case and thereby consistently maintained at 180 minutes or less.



Above cusum chart is for surgeon console time. The direction of cusum line changes at 12th case, which is an indication that surgeon docking time has started reducing, thus it's the cut off point of learning curve. Futher the cusum line maintains the downward trend signifying that sugeon console time consistently kept lower than the target time.



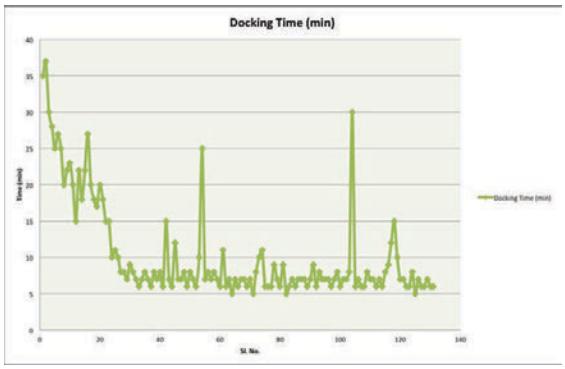
Target number of Plevic node 12 was achieved by 9th case and consistently more number of pelvic nodes were removed.

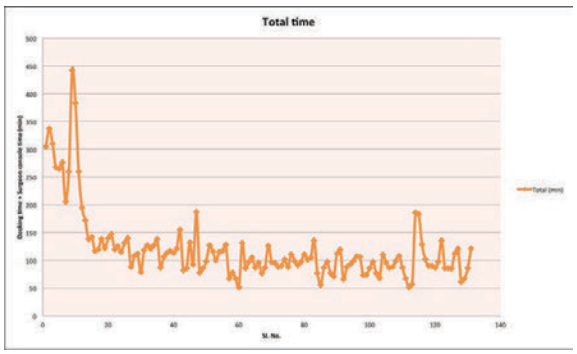


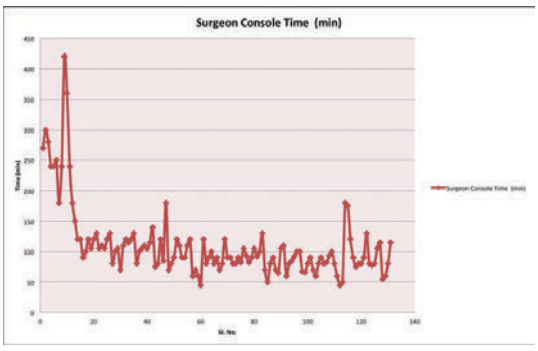
Target number of Para Aortic Lymph node 10 was achieved at 19th case and maintained thereon. Maximum number of para aortic lymph nodes removed was 15.

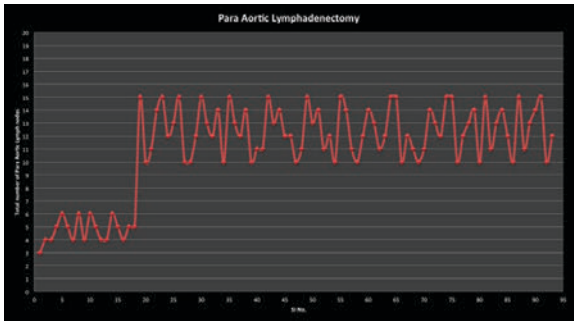
References:

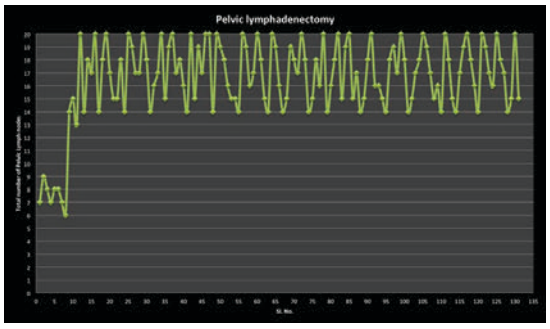
Introduction to Statistical Quality Control by Douglas C. Montgomery. Sixth Edition. Page Number 400. John Wiley & Sons, Inc.











Robotic Assisted Surgery for Endometriosis—"Is the Way Forward?"

Open Journal of Obstetrics and Gynecology, 2016, 6, 93-102

Rooma Sinha*, Madhumathi Sanjay, Rupa Bana, Fozia Jeelani, Samita Kumari
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Abstract

Endometriosis is a chronic and progressive gynecologic disorder that affects 10% - 50% of women of reproductive age worldwide. Chronic pain and infertility are the most debilitating problems associated with it requiring both medical and surgical treatment. Laparoscopy is considered the gold standard for diagnosis and treatment. However, a 10% rate of conversion to laparotomy has been reported when performed by skilled laparoscopic surgeons and much higher in low volume less skilled surgeons. To improve surgical outcomes, robotic assistance is the logical next step in performing minimally invasive gynecological surgeries, especially in complex endometriosis cases. Enhanced 3D visualization and 10× magnification along with Endowrist instruments with seven degrees of freedom facilitates precise and careful dissection. Firefly technology using ICG green dye can improve detection of small and invisible lesions. Robotics is useful in deep infiltrating disease manifesting as lesions deeper than the superficial tissues of rectovaginal septum, vaginal fornix, pelvic sidewalls, parametrium, bowel or ureter and bladder. Trials show no increase in surgical time, blood loss, or intra- or postoperative complications and similar clinical outcome when robotics is compared with laparoscopy. At present, it is more appropriate to compare it with laparotomy rather than laparoscopy. Robotics can be used to manage recurrence of endometriosis after hysterectomy. Surgeons experienced in conventional laparoscopy can utilize robotic plat- form for deep infiltrating endometriosis for performing complex surgical dissection and achieving the surgical goals in mind and reduce conversions to open surgery. Robotic assistance can bridge the gap in performance of laparoscopic surgery in advanced endometriosis.

Figure 1. Endometriosis view through a robotic console.

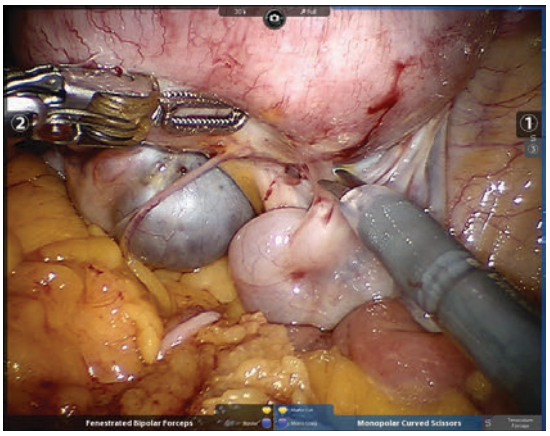


Figure 2. Early endometriosis lesion.

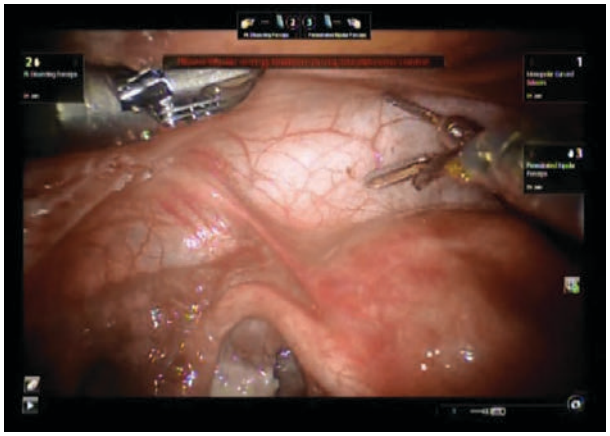


Figure 3. Ovarian cystectomy being performed by endowrist robotic instruments.

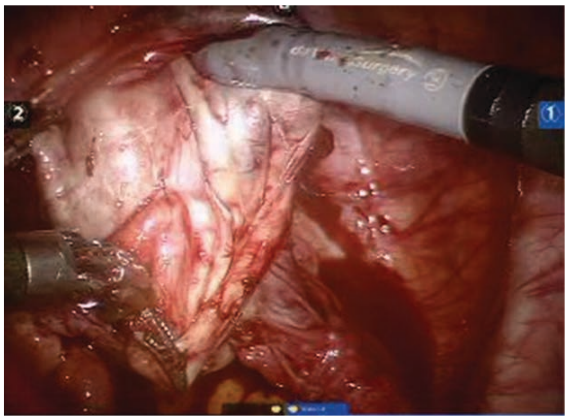
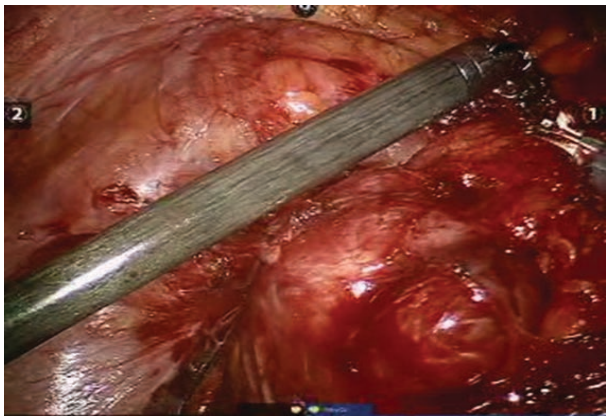


Figure 4. Post hysterectomy endometrioma in view after dissecting the of sigmoid away.



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Live operative workshop on advanced Robotic and reconstructive surgery

PGI, Chandigarh 19-21 Feb 2016

An International Live operative workshop on advanced Robotic and reconstructive surgery was organized at PGIMER, Chandigarh on 19-21st Feb 2016. The workshop was organized by Department of Urology under the chairmanship of Dr Arup K Mandal and Dr Ravimohan S Mavuduru as the organizing secretary. Prof Shrawan K Singh was the co-organizing chairman. Prof. Uttam Mete and Dr Santosh Kumar were part of the organizing team along with Dr Girdhar Singh Bora and Dr Sudheer K. Devana as Co-Organising secretaries. The Departments of Renal transplant surgery and Nephrology extended full cooperation and supported the Robot assisted Renal transplant section of the workshop.

150 delegates and 40 eminent faculty (both international and national) took part in this three day academic event.

The proceedings of Day 1 began with a brief introduction by Prof A K Mandal, followed by a video demonstration of step-by-step Robot assisted Renal transplantation by Dr. Rajesh Ahlawat. This was followed by Prof Mahendra Bhandari's talk on culture of surgical innovation wherein he infused enthusiasm in minds of young robotic surgeons and also reiterated the need for mentored training , enabling the trainee to reach beyond the level of his mentor. He came live from Detroit, USA through a web-link.

The Robot assisted renal transplantation was done by Dr R Ahlawat, Dr Prasun Ghosh and Mr Surya from Medanta, Medicity. They were assisted by Dr Girdhar Bora and resident team of PGI. The Donor nephrectomy was performed by Dr Ashish Sharma and renal transplant surgery team of PGIMER. Both the procedures were completed efficiently in a smooth and timely manner and the audience appreciated the technical nuances & benefits of this Advanced robotic Surgery. On the other operating room there was a live transmission of open Radical cystectomy and illeal conduit. This procedure was performed by Dr Ahmed Harraz from Mansoura University Egypt and Dr Sudheer K. Devana from PGI, Chandigarh. He showed a successful management in a challenging case with a large and locally advanced bladder mass.

The workshop was inaugurated formally by Prof Arun Grover, the Vice Chancellor Punjab University as Chief guest. The meeting was presided over by Prof. Yogesh Chawla, the Director PGIMER in presence of Prof Subash Varma, Dean of the Institute. Both of them congratulated the department of urology for successful conductance of Robotic surgeries since its inception about 1 year ago and praised the department for its persistent effort in advancing the science and pushing frontiers of surgical expertise to a new level.

Later in the day, Dr T B Yuvarja, from Kokilaben Hospital, Mumbai performed robot assisted Radical Cystectomy and total intracorporeal diversion, in an efficient and step wise manner. He demonstrated how robotic assistance can be beneficial to the patient in the form of smaller incision , less blood loss conferring the benefit of early recovery to the patient. This was followed by a debate on Robot assisted Renal transplantation vs Open method of renal transplantation between Prof Pranjal Modi from IKDRC Ahmedabad and Dr Ashish Sharma from PGIMER Chandigarh, wherein both speakers gave strong hard scientific points in favor and against Robotic assistance.

The faculty appreciated the facility of Robotic Surgery set up at PGI, especially having a separate OT complex with an in house sterilization, and a dual console.

They also appreciated the concept of creating a separate robotic center , which is one of its kind in the country. The day ended on a praiseworthy note for the organizing team of PGI for a delightful organization of the workshop.

On second day there were series of lectures on various techniques of RARP like extraperitoneal approach of RARP, Retzius sparing approach RARP, and RARP in difficult situations. This was followed by two live case demonstrations'. RARP was performed by Dr Gagan Gautam, Max Hospital Saket, NewDelhi and RARC with total Intracorporeal diversions was performed by Dr Sudhir Rawal, Rajiv Gandhi cancer institute, NewDelhi. In both the cases the advantages of robotic assistance was well appreciated by the delagates.

The second day ended with yet another more than live appearance by Dr Prokar Dasgupta from Guys hospital London on Skype. Dr Dasgupta delivered approach towards establishing a Robotic surgical Facility, and congratulated The team PGIMER for having one such state of the art facility. He also delivered a talk on his best way of doing RARP, and appreciated the effort of team Urology, for carving such a extensive scientific program and the conductance of this Robotic Workshop.

Day three was marred by debates on weather RARC with Intracorporal diversion is better than conventional Radical Cystectomy. It was debated by Dr T B Yuvaraja and Dr Arabind Panda from CMC, Vellore. It was appreciated that Robotic surgery in its infancy is still able to stand up against the conventional Open Surgery , and offering the added benefits of minimal invasive surgery and early recovery with equivalence oncological outcomes. Apart from this there were indepth symposiums on Locally advanced prostate cancer and changing Landscapes in management of prostate cancer. Team Urology at PGIMER also showcased their journey of Robotic surgery from the time of its inception. Prof Mandal remembered the efforts of Lt. Mr K Subramanium (former CEO Vattikuti) in developing this trunkey project of Robotic center. The delegates appreciated the volume of cases that were performed in Robotic Center by department of Urology at PGI and the so-far flawless journey of more than 270 cases of Robotic surgery at the institute.

The program ended on a happy note of Vote of Thanks by Dr Ravimohan S M , The organizing secretary of the event. All the delegates appreciated the workshop and the Team effort under the able guidance of Prof A K Mandal.

At PGI, robotic surgical procedures shared

TIMES NEWS NETWORK

Chandigarh: Various advanced robotic surgical procedures and conventional open surgical procedures were demonstrated through live transmission from robotic centre to lecture theatre complex during the second day of the live operative workshop at PGI.

The third day on Sunday was devoted for continuing medical education programme. Radical prostatectomy, which is done with a curative intent in patients with prostate cancer, was a difficult procedure by conventional methods. It was appreciated by the participants that the same could be done with ease and precision using robot assistance.

The advantage and different techniques to reduce the potential risk of urinary leakage and erectile dysfunction following radical prostatectomy were discussed. This robot-assisted radical prostatectomy which is being done routinely in the department of urology at PGI was demonstrated live by Dr Gagan Gautam, New Delhi.

Radical cystectomy which is performed for the treatment of aggressive bladder cancer was demonstrated both by robotic assistance and conventional open technique. Urinary diversions for allowing the urine to come out after removal of urinary bladder involves either creation of a new bladder or a conduit using bowel segment are essential following removal of urinary bladder.

These diversions are conventionally performed by open surgical techniques. Such advanced procedures with the assistance of robot is also evolving. Dr Ahmed Harraz from urology and nephrology centre, Mansoura University, Egypt, demonstrated this reconstruction by open method, whereas Dr T B Yuvaraja, from Mumbai performed robot-assisted intracorporeal conduit and Dr Sudhir Rawal from New Delhi reconstructed intracorporeal new bladder using robotic assistance. Dr Harraz convincingly demonstrated that the open surgical procedure performed by an expert (like him) from a high volume centre, still remains the gold standard technique.

However, the robotic-assisted procedure had the distinct advantage of minimum blood loss, and tissue trauma over-and-above the fact that there was no need to open the abdomen by a long cut. This allows a significantly shorter hospital stay due to quicker recovery following surgery.

There was an interesting debate on the utility and application of robot-assisted radical cystectomy and diversion in Indian set-up which generated a lot of brain storming.

Simplifying Obesity Reduction Surgery with Robotics*

New Delhi/Hyderabad, Mar 29 (IBNS) Doctors in Delhi

Hyderabad and other places are suggesting robotic bariatric surgery for those with morbid obesity as part of the patient's weight reduction regime.

Obesity is one of the much dreaded lifestyle problems worldwide. According to the World Health Organization, almost a quarter of Indian children are overweight and at the risk of contracting obesity-related diseases later in life. But losing weight is not easy for most people.

For adults, those who want to lose 10-20 kgs, there are several options such as various exercises, yoga, detox institutions and gymnasiums. But when a person wants to lose 40-100 kgs, these methods do not produce results. Moreover, for many suffering from obesity, the first line of treatment – exercise and eating right does not work because with excess weight, comes limited mobility, which means exercising or work-out is not an option.

We suggest bariatric surgery to those with morbid obesity, says Dr Arun Prasad, a Robotic surgeon with Delhi's Apollo Hospital. Bariatric surgery reduces the size of the stomach and intestines.

Alka (name changed) who was 158 kg, suffered from diabetes, high blood pressure and knee-pain, could not walk from one room to another and found it difficult to get up from the bed, lost 50 kgs in nine months after her gastric bypass. While bariatric surgery has been around for a few decades, the advent of robotic bariatric surgery has made it simpler and more beneficial. The surgery can be carried out with the assistance of a Surgical Robot, making the procedure simpler and safer.

Dr Arun Prasad, who has performed over 1,000 such surgeries said, The Surgical Robot enables us to perform these surgeries with lower risk to the patient, lesser pain and a much shorter hospital stay.

Over the past 12 years Dr Prasad was performing bariatric surgeries through laparoscopy; five years ago he started using the robotics technology. For a 250-kg patient, performing a normal gastric bypass surgery is very, very difficult. Lifting the abdominal wall can be tiring for the surgeon, which can affect the results. In robotic surgery, the robot does the lifting while surgeon does the stapling and stitching, explained Dr Prasad. According to experts, contrary to popular perception, there is no weakness after the surgery. Most patients can go back to their daily routine and work within 2-3 weeks of the surgery.

We call ourselves fat fighters, says Dr Parveen Bhatia, chairman, Institute of Minimal Access Metabolic and Bariatric Surgery, Institute of Robotic Surgery (IRS), Sir Ganga Ram Hospital, New Delhi. Bhatia rues at the growing obesity in India. One quarter of what you eat keeps you alive, the other three quarters of what you eat keeps doctors alive, he says. I did not feel weak after the surgery. In fact, I opted for robotic surgery as the level of accuracy is higher and there is little blood loss, said Ramani (name changed), a young girl who underwent gastric bypass surgery last year. Raminder Kumar (name changed) said he drove back home two days after his robotic mini-gastric bypass surgery.

This may not have been possible if the same procedures were done as an open surgery or even through laparoscopy say doctors.

The robot has four arms with different equipment that can reach organs and areas where human fingers can't. The robotic arms of the da Vinci Surgical System operate in 360-degree mode and can reach deep inside, to difficult-to-access areas, especially stomach blood vessels. The suturing becomes accurate since normal and straight equipment can only reach to limited areas. The robot has wristed arm controlled by the surgeon, allowing movements that simply aren't possible with traditional laparoscopic tools, added Dr T Lakshmikanth, Senior Bariatric and Laparoscopic Surgeon at KIMS Hospitals, Hyderabad.

*India Blooms News Service

The advantages of robotic surgery for patients are multifold. First, patients experience reduced pain and discomfort as incisions are very small compared to open surgery in which long incisions are needed to cut open abdominal wall or any other area. In robotic surgery, incisions are tiny, which greatly reduces risk of infections and minimizes blood loss and need for transfusion. Such incisions leave minimum scarring. The biggest benefit for patients undergoing robotic surgery is shorter hospital stay. The recovery time is much faster and patients can resume normal activity much sooner.

A surgical robot has powerful cameras that magnify the internal organs multi-fold, providing greater precision during procedures. The 3-D view is more accurate and clear. The surgeon is in full control of the robotic arms, which he manoeuvres from the console.

In bariatric surgery, the robotic arms lift the heavy, thick abdominal wall. This enables the surgeon in two ways the forehand and backhand movement of the robot forms perfect sutures and it can be done without feeling tired. Since the time taken is less, it reduces anaesthesia-related risks in obese patients, said Dr Prasad. According to Dr Prasad, patients need to evaluate the technology before rejecting it out of fear. We have this technology; we can either use it for our advantage or condemn it and ignore it. I think it is here to stay, says Prasad.

In India, 30 hospitals are using this technology. But as any doctor will warn, while the initial weight loss is euphoric, the post-surgery lifestyle has to change; otherwise surgery will have limited affect. There are some cases where patients have gained weight and needed a more advanced surgery. A healthy regime has to be followed sincerely. If patients do not focus on having an active life and go for regular exercise, it will be a downhill journey. Patients should exercise for half an hour to one hour every day, recommends Dr Prasad.

Vattikuti Foundation is committed to train highly competent surgeons and will continue to play its role of motivating young surgeons. The Foundation works with the hospitals to make robotic surgery affordable to the masses.

Media News

Robotic ops no longer cost an arm

Prithvijit.Mitra@timesgroup.com

Kolkata: Robotic arms are steadily replacing the surgeon's scalpel and lowering the cost of surgeries. Even though just one private hospital in Kolkata offers the option, a majority of robotic surgeries being done are now cheaper than the conventional method. Minimally invasive methods for head and neck surgeries, too, now cost at least 30%-40% less than the traditional method.

Earlier this week, a Bangladeshi patient underwent a robotic surgery at Apollo Gleneagles Hospital to get rid of a cancerous tumour on the throat that was lodged in an inaccessible part of the pharynx. While the conventional cut-and-open method could be used, it would have raised the risk, prolonged the recovery period and made the treatment more expensive. So, doctors at Apollo used two robotic arms to scoop out the tumour that allowed the patient to walk out of the hospital in just three days. Not only that, the 76-year-old from Dhaka paid Rs 20,000 less for the surgery than he would have if the robotic arms were not used.

"We tend to believe that robotic surgeries are very expensive. But they are actually cheaper in many cases for they reduce the hospitalization period. In the case of the Bangladeshi patient, he would have had to spend at least 10 days in hospital had he been operated upon conventionally. That would have pushed up the hospitalization costs and his recovery period would have been much longer. More importantly, robotic surgeries are precise and very useful in operations like these where the conventional knife-and-scalpel procedure may not be easy or entirely effective," said Shantanu Panja, chief surgeon, department of ENT head and neck cancer surgery, who conducted the robotic procedure at Apollo.

Zulfikar Haoladar (left) with doctor Shantanu Panja after his release from the hospital

Panja and his team used two robotic arms guided by a 3D console. They monitored the arms that had a forcep attached to them. It took out the tumour without any external cut and brought it out through the oral activity. Termed transoral hypopharyngectomy, the procedure was the first of its kind to be conducted in a Kolkata hospital. Mohammed Zulfikar Haoladar, the patient from Bangladesh, was released on Friday.

"Minimally invasive procedures like endoscopic skull base surgery are increasingly being used to remove tumours. Around 40% of all head and neck cancer procedures at Apollo are now being done by these methods. They make the procedures at least 20%-30% cheaper," said Panja. Haoladar's surgery, for instance, cost Rs 1,80,000.

In next five to 10 years, more than half the surgeries could be done by robots, according to Hrishikesh Kumar, head of neurology at the Institute of Neurosciences Kolkata. "Its costs are climbing down. It offers more options to the doctor and eliminates risk. But many surgeons are not yet comfortable with the robotic technique and continue to use the conventional method. So, I see both kinds co-existing which is good for the patients," said Kumar.

Robotic surgeries and minimally invasive methods can be used depending on factors like the location of tumour, general condition of the patient and the availability of robotic arms. In order to be cost-effective and advantageous, the tumour has to be located at an inaccessible part of the body.

Dr. Jagdishwar Goud Gajagowni
Clinical Director Robotic Surgery
Krishna Institute of Medical Sciences
Secunderabad, Telangana, India.

Short Term Outcome of Total Robotic Whipples Pancreaticoduodenectomy: An Indian Experience

KIMS Hospital, Secunderabad, India.

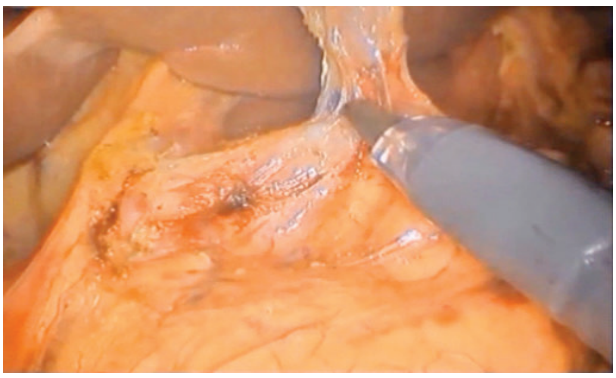
Jagdishwar Goud Gajagowni, Rahul S.Kanaka, Bala Vikaskumar, Nisha Buchade

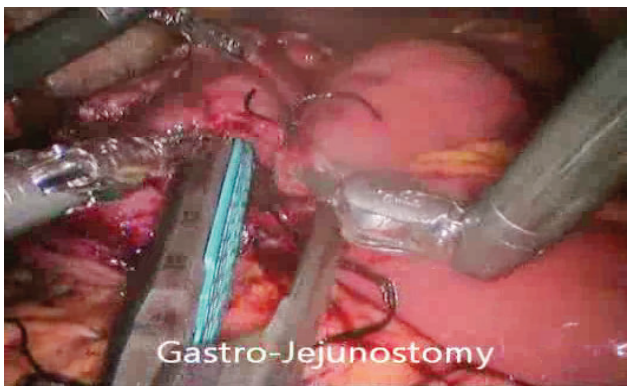
Background:

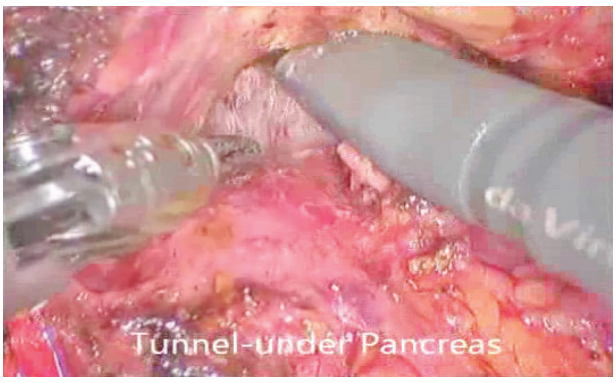
Carcinoma of pancreas is the 13th most common cancer worldwide and is the 8th leading cause of cancer related death. It is a highly aggressive cancer and has a dismal overall 5 year survival of 5%. Despite all the shortcomings, Whipples pancreaticoduodenectomy offers the best option for cure but only 20% of the patients are resectable.

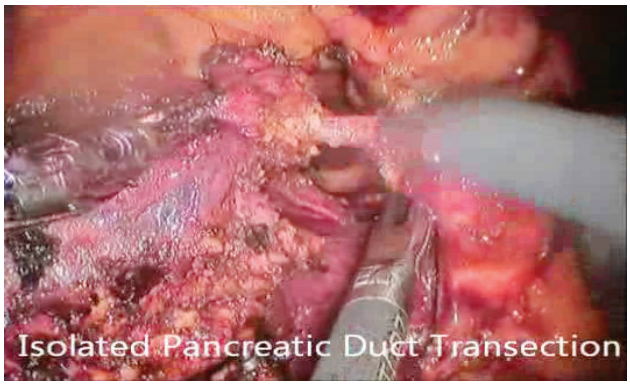
Methods:

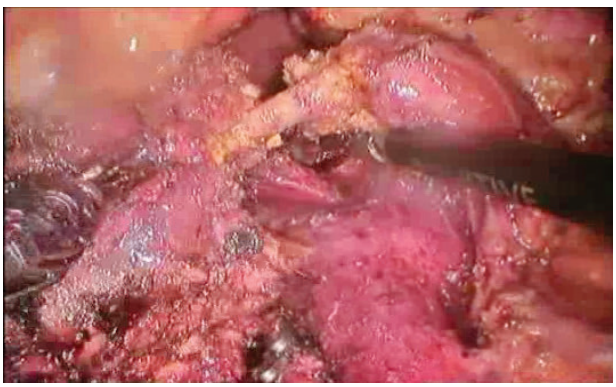
This is a Prospective Nonrandomized analysis of consecutive 06 operable cases of carcinoma of esophagus performed at Krishna Institute of Medical sciences, Secunderabad-INDIA during study period from February 2013 to January 2016. Institutional ethical committee approval was taken.







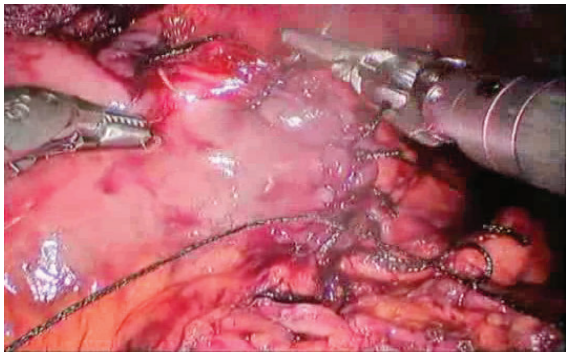


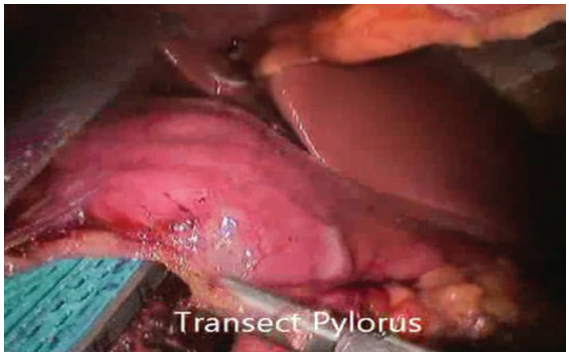


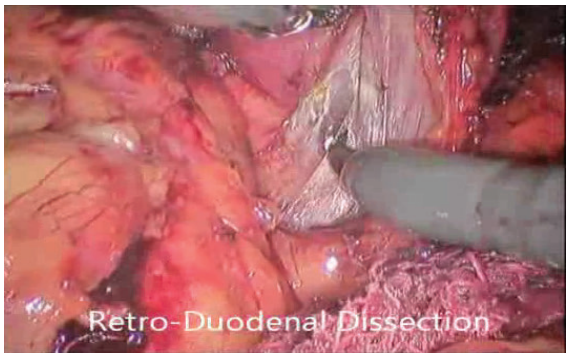
Results:

RESULTS-Total Robotic Whipples pancreaticoduodenectomy			
Age	67 years	Intra Operative complications	
Sex(M:F)	7:3	Conversion	0%(0/6)
Docking period	13.7(10-20)	Portal vein/ SMA* injury	0%(0/6)
Duration of surgery in minutes	268(185-360)	Post Operative complications	
Blood loss in ml	212(110-300)	Pulmonary Complication	16.67%(1/6)
Ventilatory support In Hours	26(6-36)	Cardiac complication	0%(0/6)
Hospital stay In days	10(6-13)	Intra abdominal abscess	0%(0/6)
Systemic Morbidity	33.3%	Delayed gastric emptying	16.67%(1/6)
30 days mortality	0%(0/6)	Anastomotic leak	0%(0/6)
Histopathology		Fistula	0%(0/6)
R0 resection	100%	DVT	0%(0/6)
Lymph node yield	11(6-18)	Cholangitis/ Sepsis	0%(0/6)
Positive nodes	2.42(0-12)	Wound infection	0%(0/6)

***SMA-Superior mesenteric artery**







Discussion:

The first robotic surgery was performed in 1988. Robotic surgery facilitates the advantages of open surgery while refining the minimally invasive techniques. Robotic surgery makes difficult minimally invasive surgical procedures easier as robotic system has the advantage of dexterity, ability to perform complex maneuver, three dimensional vision, absence of tremors and a short learning curve.

Whipples pancreaticoduodenectomy is one of the most complex procedures in the body. Laparoscopic whipples was first performed in 1994 but due to technical difficulty not many surgeons adopted this technique. In Robotic whipples all the benefits of minimally invasive surgery are coupled with ability to perform anastomosis comfortably due to 7 degree of movement of robotic wrist.

The results of our study shows that Total Robotic whipples pancreaticoduodenectomy is feasible and short term outcome surgically and oncologically is comparable to standard open procedure added with early postoperative recovery and less pain.

Dr. Anupama R
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Clinical Associate Professor
Surgical and Gynaecology Oncology
Amrita Institute of Medical Science and Research Institute, Kochi

A glance into the first year of robotic surgery at Gynecologic Oncology department at "Amrita Institute of Medical Sciences"

The advantages of minimally invasive surgery in gynecologic cancers were recognized since over a decade, but the adoption of laparoscopy for the surgical management of gy-necologic cancers was less. This could probably be due to the steep learning curve in acquiring the skills to perform complex oncological procedures. The introduction of ro-botic surgery has enabled more surgeons to do minimally invasive surgery benefiting an increased number of patients.

Robotic surgery was started in February 2015 in the department of gynecological on-cology at the Amrita institute of medical sciences. We have the da Vinci Xi system which enables easy multi quadrant surgery and also has an inbuilt fluorescence imaging system named – 'firefly'. Previously, most of our endometrial and cervical cancer pa-tients were managed by conventional laparotomies. The transition to robotic surgery was smooth and easy. The fact that I could perform over a 100 surgeries in just over a year without any conversions to laparotomy is a testimony to this. In the last year more than 90% of our endometrial cancer surgeries were done robotically.

It is known that robotic surgery reduces surgical morbidity including blood loss and also reduces post operative pain and analgesic use. The recovery is fast and in oncology it enables the patient to start adjuvant treatment earlier. Another advantage that robotic surgery gave us was the ability to do sentinel node mapping in endometrial and cervical cancers with great accuracy. Sentinel node mapping technique is still in its early stages in uterine cancers and the Firefly technology helps to map sentinel lymph nodes with more than 90% accuracy in these cancers. The advantage of doing sentinel node biopsy is that it reduces the complications associated with lymphadenectomy like vascular and nerve injury during surgery and reduces the development of post op lower limb lymphedema. The near Infrared imaging is inbuilt in the daVinci Xi system and we were the first in India to use this feature.

I would like to share two of my most memorable cases from the last year. The first case was of an 84 year old lady who came to me with post menopausal bleeding. She was planning to go to the US in 2 weeks' time to attend her grand daughter's wedding. Imag-ing showed thickened endometrium and pipelle biopsy from uterus showed adenocarci-noma. She was diabetic, hypertensive and had a BMI of 34. Patient and relatives were anxious about the diagnosis but for the patient the most worrying part was whether she would be able to travel and attend her grandchild's wedding. She underwent robotic staging surgery and on the 10th postoperative day, boarded a flight to US. She attended the wedding and as she had early stage low grade disease which did not require any ad-juvant treatment, she could spend 6 whole months in the United States with her chil-dren.

The second patient was a lady with ovarian tumor post cystectomy from outside. She came to me with a PET scan report showing a residual lesion in the ovary and also an uptake in para aortic node. She had been advised complete staging by laparotomy but as she was a Jehovah's Witness and would not allow blood transfusion even in life threat-ening scenario, she was reluctant for open surgery. The complete staging including para aortic lymph node dissection was done robotically with a blood loss of about 50 ml.

Cancer is associated in the psyche of the patients with dying and suffering due to the disease as well as its treatment. Therefore, patients presenting to the oncology OP are very anxious and apprehensive. Avoiding the pain and convalescence of a laparotomy and giving the best possible surgical treatment to patients is the advantage of using the robotic platform.

Robotic Surgeons Council Meet
Indraprastha Apollo Hospital, New Delhi
8-9 April 2016

In Pictures

KS Memorial Video Awards
&
Vattikuti Foundation Scholarship Winners

The awards were presented to the winners by the Guest Speaker for the evening
Dr. Ram Narain, Executive Director, Kokilaben Dhirubhai Ambani Hospital, Mumbai
along with Mr Gopal Chakravarthy, CEO Vattikuti Technologies and
Dr Mahendra Bhandari, CEO Vattikuti Foundation

The Times of India
CITY

TNN | Apr 15, 2016

Robotic surgeries offer healthier post-operative life: Expert

MANGALURU: The ultimate objective of robotic surgery is to find ways to make it affordable for the economically poor population in the society, said Dr Mahendra Bhandari, CEO, Vattikuti Foundation, Michigan, USA. Speaking on 'Global perspective of robotic surgery,' Dr Bhandari talked in detail about the evolution of robotic surgery and its merits, particularly in Indian context. He highlighted that the robotic surgery sector has made notable achievements in the past ten years. The number of robots increased from seven to 35, procedures from 861 to 11,790, trained surgeons in robotic surgery from two to 187.

He congratulated Yenepoya University for implementing robotic technology in terms of providing qualitative surgical treatment, which is first of its kind in Dakshina Kannada district.

The seminar was held at Yenepoya Medical College Hospital on Friday.

The expert said robotic surgeries assure a healthier post-operative life, causing minimal loss of blood, quicker healing of wounds and shorter hospital stay for those suffering from life-threatening conditions in the digestive, respiratory, urinary, and reproductive and other vital body systems.

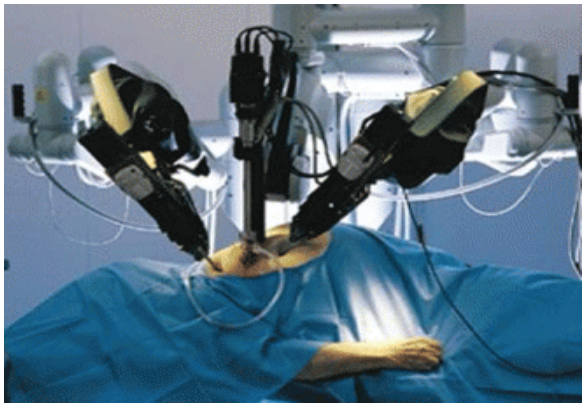
Urologist Dr Venugopal spoke about the evolution of robotic surgery in India and also the collaborative efforts made in this direction by various professionals from to time to time.

The seminar was also addressed by Dr M Vijayakumar, vice-chancellor of Yenepoya University. He spoke about the applications of robotic surgery for various surgical departments.

DELHI HOSPITAL HOSTS WORKSHOP ON ROBOTIC-ASSISTED SURGERY

Tuesday, 12 April 2016 | IANS | New Delhi

the pioneer



Max Hospitals hosted an international workshop on urological surgery which saw more than 70 leading surgeons from the country learn the nitty-gritty of robotic-assisted surgery.

The "International Live Operative Workshop on Robotic Assisted Urological Surgery" was held on April 10-11 in the hospital premises.

"Robotic surgery is one of the most advanced forms of surgery that is surfacing in the medical sector today. It will be beneficial for both patients and medical practitioners by enhancing skill sets, medical costs, aesthetic and cosmetic benefits and other such advantages," said Dr Anant Kumar, director of urology, robotics and renal transplant, at Max Hospital-Saket, in a statement.

The hospital recently unveiled the state-of-the-art *da Vinci* surgical system a robotic surgical system developed by the US-based company Intuitive Surgical that allows surgeons to perform complex urology surgeries through tiny incisions.

Max Super Speciality Hospital Saket, New Delhi - Completes it's 100th Robotic Surgery

Vattikuti Technologies Congratulates the administration and team of Robotic Surgeons at Max Hospital

Seen here are Dr Harit Chaturvedi along with Dr Mudit Agarwal, Dr Sushil Kumar, Dr Shubham Jain and Dr Kamal Fotedar

RSC - Announcement

The forthcoming Robotic Surgeons Council meeting dates have been announced. It will be held on 12-13 November 2016.

- See more at: http://vfrsi.vattikutifoundation.com

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