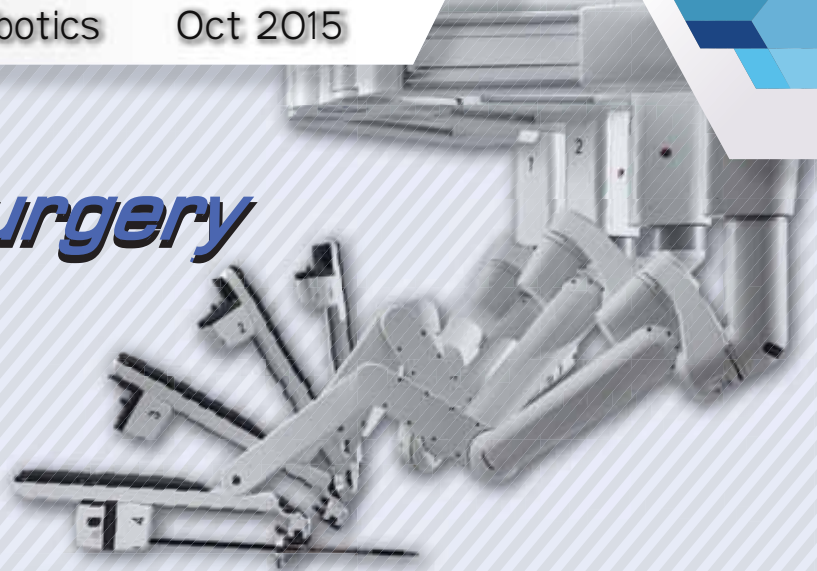


# THE EDGE

Surgical Excellence through Advanced Robotics

Oct 2015

## Cutting Edge Surgery



**Dr. Mandar Deshpande**  
Robotic Assisted  
Neck Dissection



**Dr. Mario M. Leitao Jr.**  
MIS: Natural Evolution



**SGRH GYN Team**  
Review: First 100 Cases



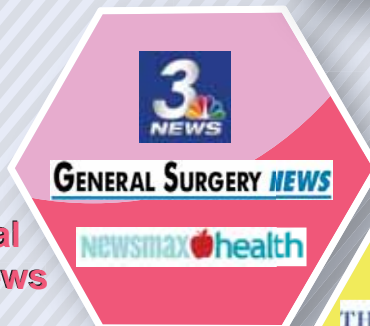
**RSC 2015**  
AIMS, KOCHI



**RSC**  
Media Coverage



**Veena Thorat**  
TMH - The Nursing  
Staff Perspective



**International**  
News



**Robotic Surgery**  
Media News



Welcome to this edition of Edge- which follows a major event of interest to the Robotic community. The Robotic Surgeons Council Meeting at Kochi was a major success, and I am glad to inform you that it received very good coverage in the media. The Masterclass preceding the event was also appreciated by all the attending surgeons.

One important decision taken at the Council meeting was that the next RSC will be held in New Delhi around April 2016, and will be hosted by Indraprastha Apollo Hospital.

I also take pleasure in announcing the launch of Project ESCOR by Vattikuti technologies- an initiative aimed at increasing the community of Robotic surgeons in the country. I have personally met many of the hospital administrators and leading Robotic surgeons to introduce this project, and am enthused by their keenness in participating in the program. Let us jointly build a large and vibrant community of Robotic surgeons and reach the larger community of patients with this advanced technology.

Warm Regards,

**Gopal Chakravarthy**

RSC 2015

Media News

**CITY EXPRESS**

*Kochi, Thursday, 17 September, 2015*

**News**

**KOCHI:** The two-day Robotic Surgery Workshop and Master Class in gynaecologic oncology, organised by the Gynaecologic Oncology Department of the Amrita Institute of Medical Sciences (AIMS), concluded here on Sunday.

Dr Mario M Leitao, director of the Minimal Access and Robotic Surgery (MARS) Programme at Memorial Sloan - Kettering Cancer Centre, US, was one of the faculties of the workshop. In addition, eminent national faculties from Kashmir, New Delhi, Mumbai, Bhubaneshwar, Bengaluru and Thiruvananthapuram also participated in the workshop.

Medical director Dr Prem Nair; Association of Gynaecologic Oncologists of India president Dr Neerja Bhatla; AIIMS, New Delhi, Obstetrics and Gynaecology president Dr D K Vijayakumar; Gynaecologic Oncology HoD Dr Anupama Rajanbabu and Department of Gynaecologic Oncology associate professor Dr Sarala Sreedhar spoke.

The workshop discussed the growing importance of gynaecologic oncology in India, which deals with the study and management of cancers of the female reproductive system. The estimate by the Indian Council of Medical Research is that by 2020, the number of women suffering from such cancers would be: cervix uteri – 1,23,291 body uterus - 17,633 and ovary - 36,199.

The technology to provide appropriate treatment is available at various centres in India, and robotic surgery is one such technology. It is basically a computer assisted procedure, wherein the surgeon uses robotic arms to perform the surgery, with high precision and minimal blood loss. There is hardly any post-operation discomfort with the majority of them discharged within one day after the surgery.

Friday, 31 July, 2015 | Delhi

TIMES HEALTH

## Country's Highest Volume Robotic Bariatric Center at Indore now

Living a healthy lifestyle is what we all wish for but not all of us are blessed with perfect metabolism and body never the less it is no more a limitation for us, thanks to Dr. Mohit Bhandari's state of the art weight loss & diabetes surgery centre in Indore. It is India's most sought after center in the country for patients looking for Robotic Bariatric Surgery, a technically sound and swift process to go under the knife.

Dr. Mohit Bhandari's weight loss & diabetes surgery center, Mohak Bariatrics & Robotics is liberating people from obesity. Dr. Bhandari is the youngest surgeon to perform more than 3500 bariatric surgeries and more than 250 robotic surgeries in his stint as a surgeon. Elsewhere in India where Doctors are still hopping onto



Robotic Bariatric Surgery- Humane Touch Beyond Excellence for a Rejuvenated you!

conventional laparoscopic procedures, Dr. Bhandari has moved ahead to the most advanced way of Bariatric surgeries. Even, the Surgical Review Corporation, USA has designated Mohak as an International Centre of Excellence in Bariatric & Metabolic Surgery and Dr. Mohit Bhandari has Surgeon of Excellence. Dr. Mohit has always been a pioneer in introducing medical ad-

vancement into practice and has proved his mettle. Owing to this trend, Dr. Bhandari is operating with Da Vinci robotic system which translates surgeon's hands into small, ultra-precise movements of tiny surgical instrument inside the patient's body. The three dimensional magnified vision with this machine



Subhjeet Kaur-Impossible made Possible

makes the surgery happen with precision. The 360 degree wrist movement allows the surgeon to have more precision, dexterity and control leading to acceptably low complications, minus trauma rates, comparatively low pain and scarring, low infection rates, shorter hospital stay and a major cut down on gastrointestinal leaks which in total makes the surgery a zero pain experience.

The credentials of Dr. Bhandari's are plenty and going by his academic and professional excellence one is sure to believe that this man will only do excellence with his hands. Attributed with hundreds of operations under his name, there are plenty of cases in his record book who can't be happier with the way they look post surgery making Indore stand out in the map of Bariatric surgery in the country.

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969304981, 969333222;  
Tel No. : 0731-4231700-20



Hemkumar Goyal-Turned over a new leaf



Team that toils relentlessly to help achieve a newer you

## Insurance Firms Shy Away From Robotic Surgery Cover

By Express News Service | Published: 24th July 2015 03:56 AM Last Updated: 24th July 2015 03:56 AM

CHENNAI: It may be the quantum shift in surgical precision that all surgeons are gearing up for. But as far as insurance providers are concerned, robotic surgery is like a lavish cousin whom they'd rather not take out to dinner.



Apollo Hospitals Executive Vice Chairperson Preetha Reddy interacts with the children who underwent robotic surgeries, at Apollo Children's Hospital in the city on Thursday. Dr V Sripathi also seen I P Jawahar

Four years after Apollo Hospitals first forayed into robot-assisted surgery, insurance providers are still not willing to extend cover for this option. "It's a real pity that insurance providers aren't willing to even look at giving a premium bracket of insurance packages where this can be included as an option," said Dr Venkat Sripathi, Senior Consultant Paediatric Urologist at Apollo Hospitals.

While presenting a few children who had recovered from debilitating conditions faster owing to robotic surgery, Sripathi mentioned that it was a matter of simple economics. "For most companies, there is no question of paying for robotic surgery because open surgery or laparoscopic surgery is almost half the cost," he added. When Apollo first began operating with robotics four years ago, one of the things that they were sure about was, the price would plummet if more centres began using the technology. In fact, most of their centres have paid off the machine cost in half the time through the volume of surgeries done - urology, gastrointestinal and Neuro surgery top the applications

presently.

Today, 26 hospitals across the country, including three in the public sector, have robotic surgery divisions. However, the price burden is still quite high because of access and insurance issues. "This is the future and I believe that companies have to look at extending support to robotic surgery because of the advantages involved. It's faster, more precise and offers quicker healing time. Just as how minimally invasive surgery is now the gold standard, this will also be on top soon. More hospitals should invest in such things and give patients the best care possible," said Preetha Reddy, Executive Vice Chairperson, Apollo Hospitals Group.

When contacted, an official with Star Health said that the number of persons interested in robotic options was still woefully low and that was why extending cover for it did not make sense. "It may take a few years. Even in places like the US, it took 4-5 providers to begin extending partial coverage," she added.

## SCI-TECH

Mumbai Mirror 21  
WEDNESDAY, AUGUST 12, 2015

# New 'da Vinci' device is conquering lung cancer

Cyborg, used by UK experts in fight against cancer, removes tumours with less impact than keyhole surgery, allows patients to leave hospital just 2 days after major surgery

Mumbai Mirror Bureau  
mirmirrorfeedback@timesgroup.com  
TWEETS @MumbaiMirror

A four-armed 'cyborg surgeon' first developed to treat prostate disease is now being used by NHS experts in the fight against lung cancer, reports the Daily Mail. The innovation has allowed patients to leave hospital within two days of surgery, suffering only minimal post-operative pain.

Cardiothoracic consultant Sasha Stamenkovic said the da Vinci robot now used by his NHS trust for the majority of lung cancer operations removes tumours with less impact on the patient than other forms of keyhole surgery. It is activated by a doctor, who operates a camera, and a surgeon, who manipulates the robot's arms from a console using a joystick and foot pedals. Hydraulic limbs move as it does, creating a 'cyborg' melding of human and machine.

The machine locates and removes tumours without pressing on patients' ribs as it reaches and grabs the tumour. This pressing is the major cause of operative pain in traditional laparoscopic or keyhole lung surgery. "This is a huge advance in lung-cancer treatment with a clear advantage for patients," said Stamenkovic, whose team has performed 30 lung operations using the robot in the past year and will present its findings to the



world congress of cardiothoracic surgeons in September. He said the Newcastle Hospital Trust, which has bought two of the machines for about £1.2 million each two years ago, is also using them to operate on prostate, gynaecological, liver, ENT and colorectal cancer patients. Named after the Renaissance artist and inventor who foresaw the coming of robots, the da Vinci gives surgeons a high-definition view of a patient's organs in 3D via a screen inside the control console.

It has also proven hugely popular with patients in the US, where two-thirds of all da Vincis are located. During the past two years, it has become a favoured option in the UK for removing prostate tumours. This treatment will not be available to all lung cancer patients as only tumours 7 cm in diameter or less can be extracted by the machine's arms through the space between the ribs. Stamenkovic said there could be difficulties operating with the robot on obese patients with a body mass index over 35. But, a majority of patients with lung tumours would be eligible and the Newcastle team expects to perform at least 50 more robotic lung operations in the coming year.

### Less risk, more precision in robotic surgery

• Staff Reporter

When you see him sauntering around, playing with his new teddy bear, it is hard to believe that one-and-a-half-year-old Aditya Somani has just been through a surgery.

The child from Guwahati, Assam, underwent a robotic procedure for a block in his ureter, which had led to urine going back into his kidney, causing repeated infections.

"We consulted several doctors in Kolkata, all of whom recommended medication. But after the surgery, the problem is completely cured. We are happy we opted for a robotic procedure — he has just four small marks on his body instead of a cut," said Vinay Somani, Aditya's father. Aditya is one of the 65 children who have undergone robotic surgeries at Apollo Children's Hospital since the procedures began in August 2012, and one of the youngest.

"Robotic surgeries have many advantages over laparoscopic procedures. There is a three-dimensional view in real colour, a magnification of ten times and the camera is controlled by the surgeon. The instruments bend and turn like the human hand, and tiny instruments allow us to work in tight spaces," said V. Sripathi, senior consultant paediatric urologist and robotic surgeon at the hospital.

From the patient's end too, there are advantages, he said. Less time under anaesthesia, lower risks of infection, early discharge and minimal scarring, all make it the first procedure of choice for children that the hospital offers, Dr. Sripathi said.

While more parents are opting for robotics procedures for their wards because of the advantages it offers, insurance companies still do not cover it, said Preetha Reddy, vice chairperson, Apollo Hospitals.

"I do not see why insurance companies are not covering these procedures. The common man deserves to have this option — we owe it to the patients to be able to give them this," she said.

© The Hindu

TUESDAY 8 SEPTEMBER 2015

DELHI IS TALKING ABOUT

DELHI TIMES, THE TIMES OF INDIA



Boy with single obstructed kidney recovers to join school cricket team.

*It's another day at Apollo.*

#### Higher precision attained with Robotic keyhole surgery.

Tarun\* was born with only one kidney. Despite constant monitoring since birth, his health suddenly deteriorated at 9 years. By the time he was wheeled into Apollo, he was in terrible pain. Investigations revealed that he had the rarest form of obstruction in the kidney. After reviewing his case, our team of Paediatric Urology specialists opted for Robotic reconstruction surgery as it helps access and repair the affected area with greater precision. It also involves lesser pain and a shorter hospital stay. Within two days, Tarun left for home. Today, a month later, he is back to cricket. Apollo's Institute of Paediatric Sciences is home to countless such stories of hope, fight and triumph. Our best practices ensure a high rate of clinical success in a whole range of procedures - Paediatric Minimal Invasive Surgery, Paediatric Urology, Paediatric Robotic Surgery and Paediatric Gastrointestinal Surgery.

For further details, please log on to: [apollohospdelhi.com/another-day-at-apollo](http://apollohospdelhi.com/another-day-at-apollo)



\*Name & identity changed to protect patient's privacy.



## Robotic Assisted Neck Dissection (RAND)

### Introduction:

In a squamous carcinoma of oral cavity, like any other Head & Neck cancer; the metastasis to the neck nodes is the most important prognostic factor<sup>(1)</sup>, and hence an appropriate management of the neck is required. According to the recent study by Dr. D'Cruz et al published in New England Journal of Medicine (NEJM) ; it is found that among patients with early stage oral squamous cell cancers elective neck dissection resulted in higher rates of overall & disease free survival than did therapeutic neck dissection; indicating need for elective neck dissection in early tongue cancers. The Conventional technique of neck dissection results in large disfiguring scars extending from chin to the mastoid process. This provoked surgeons to find newer methods like distant access surgery. In this quest to avoid scars many methods were tried which included :

- Minimally Invasive Video Assisted Neck Dissection
- Endoscopic Neck dissection<sup>(2)</sup>

The limitations of these procedures were:

- Completeness of resection may not be similar to conventional open approaches.
- Narrowness of operative field leads to longer operating time.
- Limitations of instruments like
  - ◆ 2 dimensional flat monitor
  - ◆ rigid & straight endoscopic instruments
  - ◆ no tactile sense.

A newer technique viz. Robotic Neck Dissection using Da Vinci Robot was introduced to overcome these limitations. The advantages are:

- Steady Camera platform
- 3-D magnified operative view
- 7 degrees of freedom
- scaled & tremor-filtered movements
- A multi- articulated endo-wrist, allowing precise & complex endoscopic procedures to be performed.

Robotic Assisted Neck Dissection (RAND) using retroauricular approach is being performed by Dr. Yoon Woo Koh<sup>(3)</sup> in Korea. We hereby present our experience in 6 patients at Kokilaben Dhirubhai Ambani Hospital (KDAH)



Figure : Retroauricular Incision marked on patient

### Technique:

#### ● Incision

An incision is marked extending from the tip of the ear lobe into the retroauricular sulcus above the mastoid. The Vertical component is extended within 1 cm and parallel to the hairline.

#### Marking of Landmarks & Working space -

Markings are made on the skin, which help define the extent of working space. In the midline the marking is made from the midpoint of chin to the hyoid.

Superiorly across the lower border of the mandible and

Inferiorly a transverse line is marked in the infrahyoid region, roughly parallel to the mandible, in a skin crease if present.

Raising the flaps till the above mentioned boundaries insures that a sufficient working space achieved for adequate clearance and free movements of the robotic arms

# Robotic Assisted Neck Dissection (RAND)

## ● Raising of Skin Flaps

The incision as described above is taken and deepened. The skin flaps are raised from anterior border of the Sterno Cleido Mastoid (SCM) muscle.

Since the platysma may be absent or deficient in this region, the Greater Auricular Nerve (GAN) is a useful landmark, and the flaps should be raised in a plane above this nerve.

Superiorly the skin flaps are raised from the tail of the parotid gland.

Skin flaps are raised until the platysma becomes more evident and careful tunnelling is done till the above mentioned boundaries.

## ● Working Space

Achievement of the sufficient working space is confirmed by identifying the contralateral digastric anteriorly, the omohyoid muscle crossing the lateral border of Internal Jugular Vein (IJV) inferiorly and the lower border of the mandible superiorly. This is most important for adequate surgery. Once the working space is achieved; we begin the dissection along the medial border of SCM, and retract the muscle. The lateral border of the IJV can now be seen.

The mean time taken by us for this step was 30.5 minutes.

## ● Surgical steps under direct vision

This is a Robot assisted surgery and has certain steps which are done under direct vision.

### ◆ Dissection of Spinal Accessory Nerve (SAN)

The SAN is now identified along the lateral border of IJV, to its entry into the SCM.

We identify the exit of the nerve from the SCM and below the cervical nerve roots.

We dissect superiorly to the SAN and gain access to the posterior belly of digastric, which is then completely exposed.

### ◆ Dissection of Marginal Mandibular Nerve (MMN)

Inferiorly the perijugular nodes are exposed till the level of the omohyoid crossing the lateral border of IJV.

Attention is now directed to identify the MMN, by dissecting above the tail of the Parotid and along the lower border of mandible.

Once MMN is identified, we ligate the facial vessels and the submandibular gland is mobilized from the lower border of mandible.

### ◆ Dissection of Level IIB Nodes

We remove any fibrofatty tissue from the anterior border of SCM facilitating both enhanced vision and giving more space for movements of robotic arms.

Level II B nodes can now be dissected under direct vision.

The perijugular nodes are raised from the medial border of the SCM, the superior belly of omohyoid and the lateral border towards the IJV.

This completes our surgical steps done under vision.

The mean time taken by us for this step was 77.3 minutes.

## Robotic Neck Dissection

A Koppersmith retractor is now introduced and fixed at an appropriate level to gain maximum exposure.

The robot is now docked. Three robotic arms are inserted into the neck through the working space.

The central arm consists of a HD camera with a 30 lens facing downwards.

Two side arms with instruments are placed at the sides of the central arm in such a manner so as to form a triangle. The instruments used are a monopolar spatula in R1 and a Maryland Dissector in R2.

Robotic Dissection is started by raising the fibrofatty tissue consisting of Level IIA & III nodes.

We prefer to stay above the cervical nerve roots as this may avoid an inadvertent injury to the SAN. Superiorly the fibrofatty tissues are delivered by staying above the hypoglossal nerve and the superior laryngeal pedicle. The specimen consisting of level IIA & III nodes is delivered.

Dissection of level IB begins by raising the submandibular gland from the posterior belly of digastric towards the intermediate tendon. The gland is separated from surrounding tissues by staying as close to the gland as possible, thus safeguarding the hypoglossal nerve.



Figure : Kopper Smith Retractor in position with Robot docked

# Robotic Assisted Neck Dissection (RAND)

The deep part of Facial artery is divided at the posterior border of digastrics after securing with 'Hemlock clips' on both sides. The specimen is mobilised till the lateral border of the mylohyoid muscle is seen. The border of the muscle is retracted to visualise the underlying structures like the Wharton's duct & the lingual nerve. A cut is then made at the level of the duct and ganglion, thus pushing the lingual nerve superiorly.

The nodes are then mobilised from the anterior belly of digastric. The Submental branch of facial artery is encountered which can be clipped and specimen is delivered.

Level IA nodes are then resected from the Submental triangle between anterior bellies of digastrics of both sides; nodes are raised from underlying Mylohyoid muscle. The Anterior Jugular Veins & facial vessels from the bed of mylohyoid are clipped to deliver the specimen.

The mean time taken by us for this step was 98.83 minutes.

## • Closure

Hemostasis is checked & vital structures are seen to confirm that they are preserved. Cosmetic closure is performed after inserting suction drain.



Figure : One week after surgery

We have noticed that the time taken for all the above steps drastically reduced in the last 4 cases (Operative time 3hours) as compared to first 2 cases (Operative time 4hours 30 mins)

The Mean number of cervical lymph nodes dissected was 12.67.

The mean period of neck drain was 4 days. On an average Patient was discharged on Post Operative Day 5.

We have achieved good cosmetic outcomes and patient satisfaction with a neck wound as compared to conventional neck dissection.

## Conclusion

Although RAND is a difficult technique to begin with, we have seen a significant improvement in skills and drastic reduction in operative time with each case. We can say with our experience that a RAND gives adequate clearance with far superior cosmetic results. This is especially advantageous for patients concerned about large disfiguring scars. The length of hospital stay is equal to that of a conventional procedure. The operative time is slightly more than conventional procedure but with experience and practice it will be at par with a conventional procedure. Thus a RAND is a good alternative to early stage Oral Cavity cancers for Neck Dissection with excellent cosmetic results.

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# Robotic Surgery in Gynaecologic Indications- Review of first hundred cases in Sir Gangaram Hospital (Tertiary Care Centre) New Delhi.

Dr. Mala Srivastava, Dr. Chandra Mansukhani, Dr. Mamta Dagar, Dr. Punita Bhardwaj, Dr. Debasis Dutta, Dr. Kanika Jain

## Our Experience

In our hospital more than 100 Robotic procedures were performed between April 2012 to June 2015. The commonest surgery performed was Robotic Assisted Total Laproscopic Hysterectomies about 83%. Table 1. The commonest indication for RATLH was fibroid 60 (72.2%) Table 2. The patients with previous two or three LSCS were operated Table 3. The patients with Co-morbidities like congestive cardiomyopathy as well as Rheumatic heart disease (Table 4) were also operated successfully. Among 100 patients, about eleven patients underwent myomectomy (Table 5) and myoma of size 12-14 weeks removed successfully. Initially our docking time as well as our operating room time was high Table 6. But as our team gained experience, these were substantially shortened. Only two patients were converted to open-technique, as those patients had multiple myomas and the patients started bleeding during the operation period (Table 7). To stop the excessive bleeding, these patients were converted to the open technique. The last table depicts, (Table 8) that there is slow but steady increase in the number of patients opting for Robotic procedures.



## Robotic Assisted Gynecological Surgeries performed at SGRH April 2012 to June 2015- 100 procedures

RALH for benign pathologies	83
Myomectomy	2
Hysterectomy with Pelvic Lymphadenectomy for Ca-Endometrium	1
Wertheim's Hysterectomy for Ca cervix	1
Tubal Recanalization	1
Utero-Vesical Fistula Repair	1
Intercurrent Cervical Circlage	1

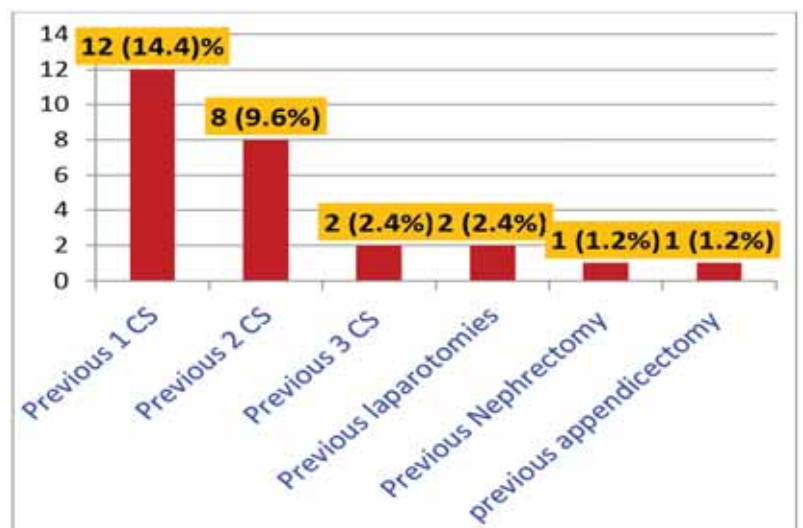
(Table: 1)

## Indications for hysterectomy

Fibroid uterus	60 (72.2%)
<12 weeks	42
12 – 14 weeks	8
14-16 weeks	8
> 16 weeks	2
AUB with endometrial hyperplasia	16 (19.2%)
CGH without atypia	3 (3.6%)
CGH with atypia	1 (1.2%)
Ca endometrium	2 (2.4%)
Ca cervix	1 (1.2%)

(Table: 2)

## Associated previous surgeries

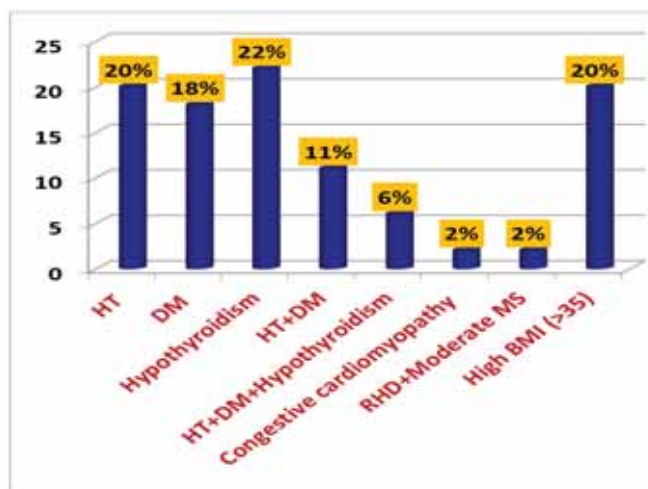


(Table: 3)





### Associated co-morbidities



(Table: 4)



### Myomectomy - 11

Size of the fibroid	
6-8 cm	6 (54.5%)
10-12 cm	3 (27.2%)
12-14 cm	2 (18.1%)
Blood loss	Approx 60-70 ml

(Table: 5)

### Time taken for Procedures

<b>Docking Time</b>	
First 20 Cases	15-18 minutes
Last 20 Cases	2-5 minutes
<b>OR Time</b>	
First 20 Cases	358 +/- 75 minutes
Last 10 Cases	180 +/- 60 minutes

(Table: 6)

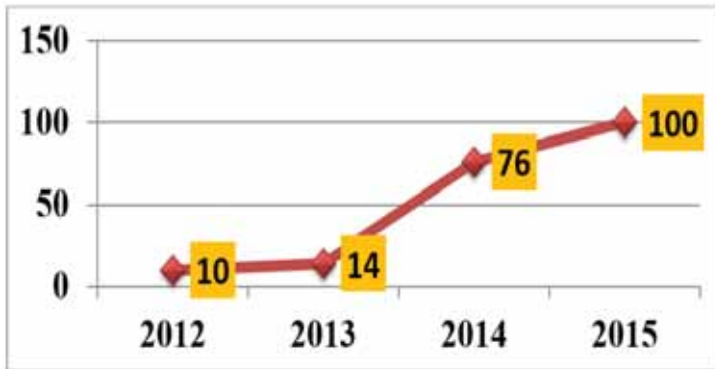
### Myomectomy - 11

Analgesics in first 24 hrs	All patients
Analgesics in next 24 hrs	<40%
Blood transfusion	None
Ambulation in first 24 hrs	All patients
Thromboprophylaxis	All patients
Post op morbidities (Febrile, paralytic ileus & wound infection)	None
Discharge after 48 hrs	>90%
Complication (Cautery touched intestinal serosa)	1(1%)
Conversion to open	2(26%)

(Table: 7)



## Robotic Procedures



(Table: 8)



Though there is no insurance coverage for this procedure, yet the patients and their treating surgeon are getting convinced about the advantage of the Robotic assisted procedures over the Laparoscopic procedures.

However, recent research revealed that once the surgeon and team have surpassed their learning curve, the robotic procedural time can be shorter than its laparoscopic counterparts(8).

As surgical teams gain more experience with the robotic surgical system and surgeons surpass the learning curve, it is anticipated that overall costs will gradually decrease over the next decade across the country.



### Conclusion

Robotic-assisted surgery provides an additional tool for gynaecological surgeons to decrease the overall morbidity associated with many gynaecological procedures.

Most studies cite increased operative time and cost as major limitation. With increased surgeon knowledge and case volume, robotic surgery will prove itself to be more advantageous for patients and surgeons and will eventually surpass the numbers of traditional laparoscopic surgery.

Finally, the role of the robotic platform is to maximise the patient's chance of having a minimally invasive procedure.

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## The Facts About Prostate Cancer Surgery and Impotence

By Jerry Shaw | Thursday, 03 Sep 2015



Advanced technology has improved prostate cancer surgery to reduce the risks of erectile dysfunction following the procedure. However, possible nerve damage during surgery can still cause impotence in some men. Urinary incontinence is another possible side effect.

A man's ability to obtain and maintain an erection after prostate cancer surgery may depend on age, sexual function before the operation, and whether certain nerves are cut during the procedure, according to the American Cancer Society. The organization stated that all men may experience some decrease in the ability to have an erection. But the younger the man, the better chances there are of maintaining the ability to have an erection.

Surgeons attempt to avoid injuring the nerves in the prostate gland that enable men to have sexual function. If the cancer has grown near the nerves, the nerves on one side or both sides of the prostate might have to be removed, causing possible erectile problems.

Impotence might be prevented through new procedures such as robotic surgery, although there are no guarantees. Robotic surgery includes a high-definition visual technique, called the da Vinci system, that allows surgeons to operate with better precision, dexterity and control than with other methods, according to da Vinci Surgery.

The advanced surgical technique results in more precise removal of cancerous tissue with less risk of damaging surrounding tissue and nerves. This has shown a faster return to erectile function for patients who have not had problems with impotence before the surgery.

Fewer complications occur with robotic surgery than with traditional methods of prostate cancer surgery. Research shows more patients returning to the erectile function they had before the surgery than with other surgeries during checkups a year later, da Vinci Surgery noted. However, sexual dysfunction due to nerve damage remains a potential risk from the surgery.

Laparoscopic surgery uses a tiny video camera inserted into the abdomen, making it possible to make smaller incisions than in traditional prostate surgery methods. Robotic surgery is a type of laparoscopic surgery. Instead of operating directly themselves, the surgeons operate from a panel that controls robotic arms.

There is less of a risk of scarring with robotic surgery than with other surgeries, according to Dr. David B. Samadi, chief of robotic surgery at Lenox Hill Hospital in New York. The build-up of scar tissue following surgery may cause complications in the proper function of the prostate gland. These complications are less likely with the minimal incisions used in robotic surgery.

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## Prostate cancer survivor encourages men to get tested



LAS VEGAS (KSNV News3LV)

By Sandra Gonzalez | Thursday, 03 Sep 2015

A cancer that silently spreads in men can be a serious threat for those who avoid the doctor. The silent killer is prostate cancer, but one Las Vegas man who faced this monster and won.

Reggie Turner had a great life. In 2014 his career was flourishing, he was engaged and his health was fantastic – or so he thought.

Since prostate cancer runs in his family, he says he regularly gets tested. But the results he got last summer were not good.

"My emotions were all over the place, and I was very blessed to have probably 15 people in the room that day, and it was tough," Turner says.

It turns out a neighbor in the medical field knew a doctor from the Cleveland Clinic. Turner went to see Dr. Jayram Krishnan who did robotic surgery on Turner to remove his prostate. The choice made it possible for Turner to avoid other options including radiation or chemotherapy.

"I literally had a 5-1/2 hour surgery and was able to stand up 3 hours later and then walking around the hospital, which is just incredible," Turner says.

According to Prostate.net: 240,000 men will be diagnosed with prostate cancer; about 33,000 men will die of the disease. Male-care.org says prostate cancer kills African-American men at a rate nearly 2-1/2 times more than white men. Krishnan says men over the age of 40 need to be tested, which he says involves a simple blood test and rectal exam. He says it's vital.

"No symptoms; prostate cancer in its early initial and even in most of its life span has no symptoms. The only time you get symptoms is when it spreads to the bones," Krishnan says.

The good news, he says, if the cancer is caught early it can successfully be removed and monitored. For Reggie, it's been a difficult year not only for him, but also his father and brother. Both were also diagnosed with prostate cancer.

Turner has new purpose in his life: to raise awareness of prostate cancer and to urge men to get tested.

# Robotic Surgery: The Nursing Staff Perspective Tata Memorial Hospital, Mumbai



Veena Thorat  
Sister In-charge, Main OT



## What is Robotic Surgery?

Robotic Surgery is another way of doing minimally invasive surgery but with better technical inputs and technology. It is one of the most advanced forms of surgeries.

Instead of using the surgical instruments by hand, robotic arms are used which are controlled by surgeons with the help of advanced computers in an ergonomic way.

The movement of surgeons is translated to the robotic arms and observations are made on computer screens.

To get started with da Vinci Xi Robotic Surgery in Tata Memorial Hospital, our team was so excited and anxious. On 6th October 2014, the first Robotic surgery APR was done by

Dr. Avanish Saklani and within 10 months, we have completed more than 200 surgeries.

The different specialties are Urology, gynecology, thoracic, colorectal, Gastro Intestinal & Hepatobiliary. Mr. Bruno & Mr. Rohit Gupta from Vattikutti Technologies have taken tremendous efforts to make our team competent to assist skillfully & confidently as well as to handle the different aspects of the robot, that is - dry run, selection of surgical site, surgery, patient position, column drapes & arm drapes.

Teaching also included how to follow the commands of the robot, docking and undocking of instruments, cleaning, disinfection, sterilization & storage of instruments, camera handling, consumables used and computer assisted inventory management.



Sneha, Vandana, Chhaya, Seema, Veena, Rama, Madhavi



## Why Robotic Surgery?

Minimal invasive procedure has accurate and precise dissection and suturing, reduces trauma to the body, less post-operative pain and discomfort, less blood loss hence a lesser need for transfusion. Risk of infection is reduced and recovery is faster enabling patients to return to normal day to day activities within a short time frame.

The morbidities following robotic surgery is less than 1% and we feel satisfied and proud when our patients go home safely with fast recovery. When the patients comes to the Operating Room, their first question will be where is the robot? And how does it work? Whether it will be helpful to me in getting rid of the disease?

Today we are happy & proud to be an active part of the robotic team to benefit cancer patients through da Vinci Xi Surgery using two consoles.

Our training started with observership in Kokilaben Dhiru Bhai Ambani Hospital. Dr. T.B. Yuvraja explained us every step of surgery including patient's safety, position & prevention of DVT, skills in handling the Robot, role of a nurse in robotic Surgery & Surgeon's expectations.

Vattikuti Technologies have arranged hands on training for us on 28th Feb 2015 at Fortune Hotel Vashi, Navi Mumbai, where we could learn to better our Robotic surgery skills

Also an Advance Training & refresher course was arranged by Mr. Rohit Gupta at Tata Memorial Hospital for the nursing team and technicians on 22nd May 2015.

Ms. Vandana Pawar, contributes as a robotic team leader and participates in the robotic team during the surgical procedure & with supplies of instruments and to keep an adequate amount of inventory, smooth work flow during surgical procedure and guide as a clinical robotic nurse.

Verbal communication between staff nurse and the surgeons is always important. Madhavi, Sneha, Seema, Samiksha, Chhaya & Rama works as a robotic Team Nurse with "common Goals" and co-ordinates their efforts to achieve them.



The team members communicate and have "Shared Division of Duties" to perform specified tasks as a unique body. Failure of any one member to perform their role can seriously affect the success of the entire team in Robotic Surgery.

Working with the Robotic System is very challenging and interesting to all of us. While working with the Robotic system we assist many super-specialties like Colorectal, GI, Urology, Gynecology, Thoracic and Hepatobiliary.

Getting familiar with the commands and the language of the robotic system makes our work more interesting and triggers our learning abilities.

After assisting for over 200 robotic surgeries, the skills in assisting and arrangement of instruments and equipments for the surgery helps in reducing the time required for the procedures. Learning this new surgical technology has given an all new platform to operating room nurses.

We Would like to thank whole heartedly Our Directors Dr. R Badwe, Dr. D'cruz, HOD surgery Dr. Prabha Yadav, Dr. Ajay Puri, Dr Ashish Gulia, Nursing superintendent Madam Swapna Joshi & OT Committee to make our Robotic surgical program successful in TMH.

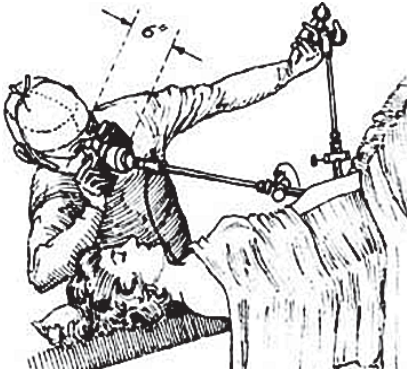
The initial period of learning curve in Robotic Surgery is now changing to full-fledged super specialty Onco surgeries with speed & accuracy and also with absolute efficiency to provide quality care to cancer patients.





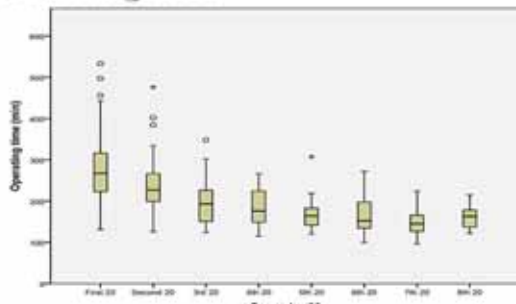
## Natural Evolution of MIS

### Integration of computer technology in the operative field



### DOES NOT INCREASE OPERATIVE TIMES

*Accept learning curve*



N	111	86	51	36	29	29	28	9
Median time (min)	267	227	182	176	184	152	145	143
Range	131-523	126-476	124-348	115-268	128-307	99-272	96-224	121-215

LRS = 184 min

Leitao MM, et al. *Gynecol Oncol* 2013;125:294-299.

### DOES NOT INCREASE COMPLICATIONS

*Less than laparotomy*

Series	Robotic	Laparoscopic	P-value
<b>Rosero 2013</b>			
N	41,241	165,381	
Any complication	8.8%	8.9%	0.9
<b>Wright 2013 (JAMA)</b>			
N	10,797	75,761	
Any complication	5.5%	5.3%	0.8
<b>Wright 2012 (JCO)</b>			
N	1,437	1,027	
Any complication	8.1%	9.8%	0.1

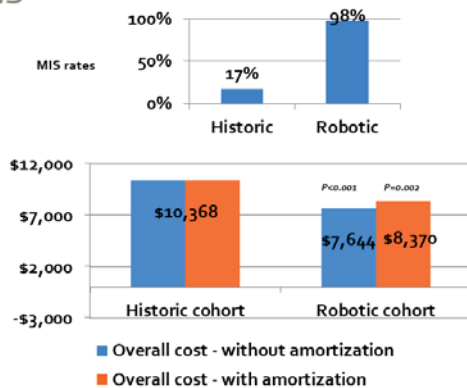
Rosero RL, et al. *Obstet Gynecol* 2013;112:776-786  
 Wright JD, et al. *JAMA* 2013;309:689-698  
 Wright JD, et al. *J Clin Oncol* 2012;30:2879-2885

### Impact of robotics in endometrial cancer

*Change in MIS*

**Historic cohort**  
 \*3/03 - 12/07  
 \*N=160  
 \*133 LAP  
 \*27 LRS

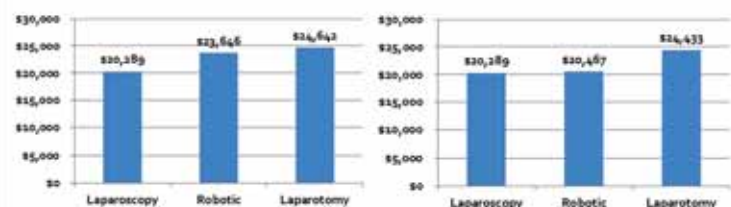
**Robotic cohort**  
 \*12/07 - 3/10  
 \*N=143  
 \*3 LAP  
 \*140 RBT



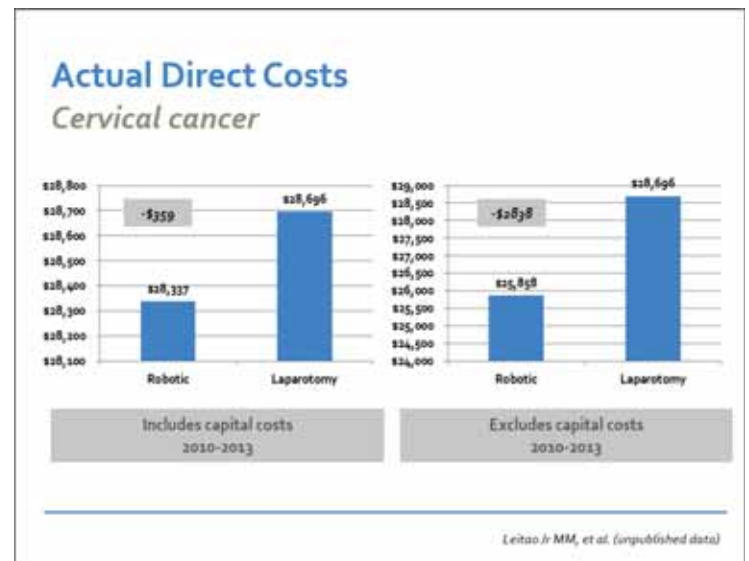
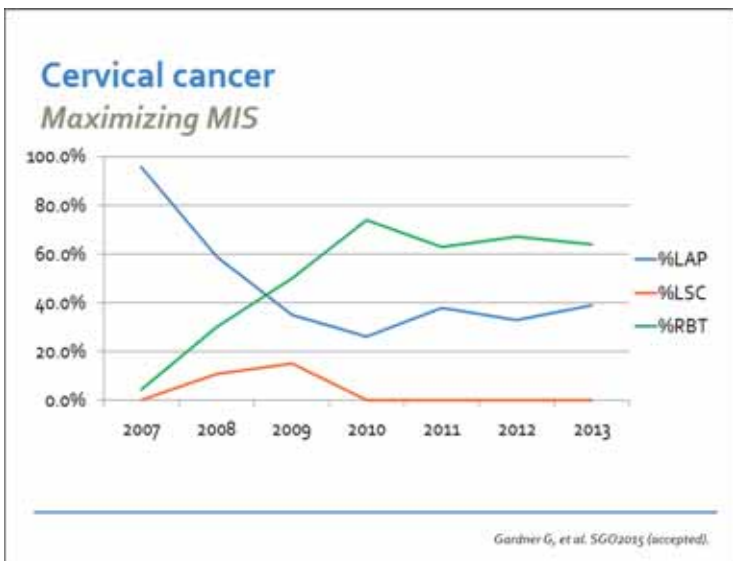
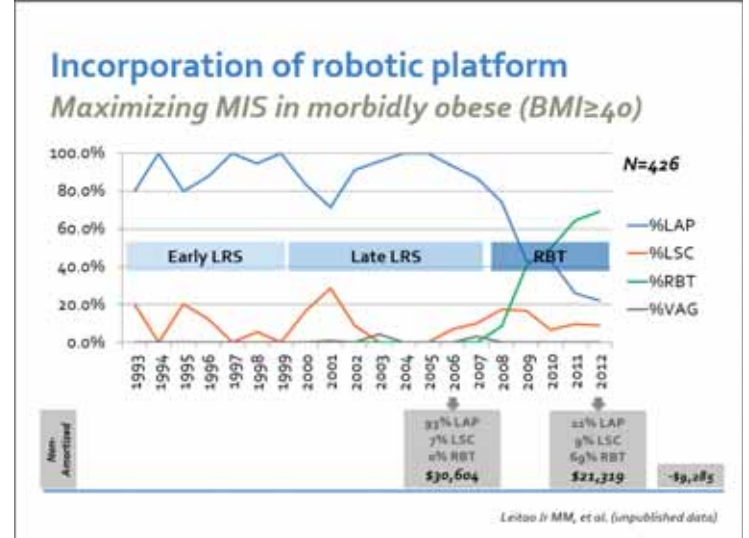
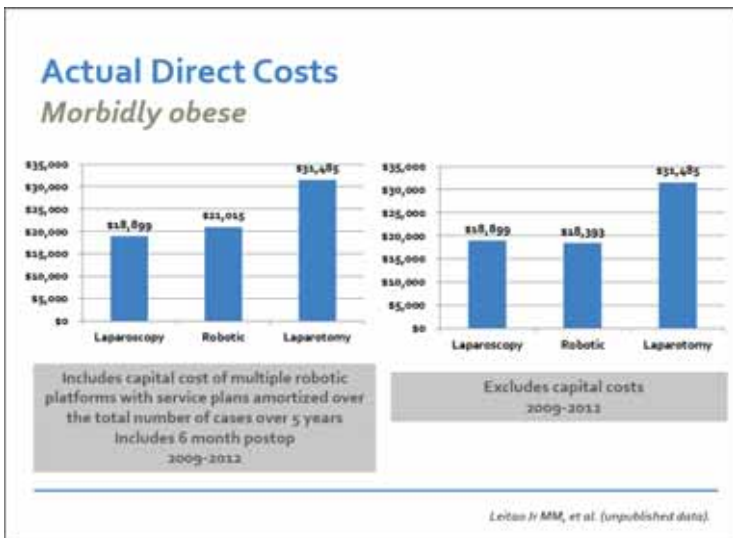
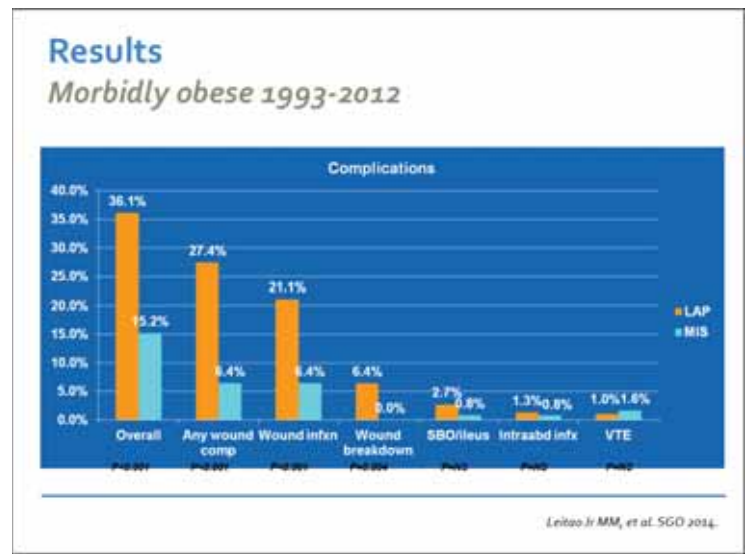
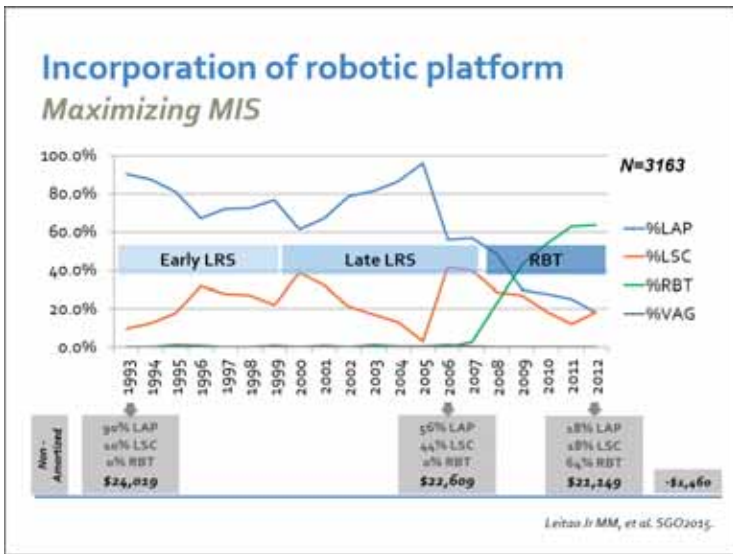
Lau S, et al. *Obstet Gynecol* 2012;119:717-724.

### Actual Direct Costs

*Experienced laparoscopic and robotic center*



Leitao Jr MM, et al. *Obstet Gynecol* 2014;123:1031-1037.



### Robot Fares Well Against Laparoscopy for Colorectal Outcomes, Costs

by Paul Bufano

ISSUE: JULY 2015 | VOLUME: 42:08

Nashville, Tenn.—Robotic colectomies are comparable to laparoscopic colectomies in terms of overall hospital costs and short-term clinical outcomes, including hospital length of stay and conversion rates, according to a study presented at the 2015 annual meeting of the Society of American Gastrointestinal and Endoscopic Surgeons.

“Robotic surgery has definite technical advantages for surgeons over laparoscopy, with better ergonomics, ability to use EndoWrist [Intuitive Surgical] movements in a tight space, improved precision and maneuverability, and superior [three-dimensional] visualization of tissues,” said lead investigator Vanitha Vasudevan, MD, a general surgeon in surgical oncology, in Miami, who presented the results at the meeting (abstract P501).

“There is also a shorter learning curve to transition from open surgery to a robotic platform, something that could bolster widespread acceptance among surgeons in the community,” added Dr. Vasudevan, who was the chief resident at University of Miami/Palm Beach Regional Campus/JFK Medical Center, in Atlantis, Fla., at the time of the study.

Dr. Vasudevan and her team conducted a retrospective chart review of laparoscopic and robotic surgeries performed for benign and malignant colorectal diseases at a high-volume community hospital between January 2011 and July 2013. There were 131 patients in the laparoscopic arm and 96 patients in the robotic arm. Measured outcomes included operating time, hospital length of stay (LOS), conversion rate, complications, 90-day readmission rate and mortality.

The average operating time was similar in the laparoscopic and robotic groups (113 and 109 minutes, respectively). Similarities were also seen in the mean hospital LOS (6.6 and 5.7 days, respectively) and major postoperative complications (3.1% and 7.3%). The mean overall hospital cost was \$114,853 for laparoscopy and \$107,220 for robotic surgery, respectively, which did not differ significantly. Finally, no deaths occurred in either group.

The researchers also found that the robotic group had a lower mean age (63.6 vs. 70 years), but was comparable to the laparoscopic arm in terms of sex, body mass index, type of pathology and American Society of Anesthesiologists classification.

Although not directly observable in this study’s analysis, reducing the hospital LOS, complications and readmissions are also likely to indirectly bring down the overall hospital cost, Dr. Vasudevan said.

“The study will definitely have clinical implications because if the costs between laparoscopy and robotic colorectal surgery are comparable, it will be more widely accepted by surgeons,” Dr. Vasudevan said. “While there is a high initial cost for robotic setup in a hospital, increasing the number of cases done using the robot and increasing experience for both the surgeon and operating room staff will contribute to reducing the costs per case.”

## Update

### Corrigendum

The article “Role of simulators in Robotic Surgical Training” by Dr Gagan Prakash (TMH, Mumbai) carried in the last print issue of ‘The Edge’ (Issue: July 2015) had incomplete content in the form of pictures connected with scores and tube exercises on the da Vinci simulator. The amended version of this write-up is available on our website and you may access the same at: [http://vattikutitechnologies.com/files/The\\_Edge\\_July2015.pdf](http://vattikutitechnologies.com/files/The_Edge_July2015.pdf)

All issues of this newsletter are also available on our official website and you may access them at: <http://vattikutitechnologies.com/newsroom>



# Robotic Surgeons Council Meeting 2015 (12-13 Sept. Cochin)



# Robotic Surgeons Council Meeting 2015 (12-13 Sept. Cochin)



## Surgical robots to soon become a norm in Indian hospitals

**IBN Live**

IANS | Posted on: 03:47 PM IST Sep 13, 2015

Days are not far off when surgical robots will become a normal feature in hospitals for procedures like MRI scans, a senior official of Intuitive Surgical Inc said on Sunday.

The US-based Intuitive Surgical makes surgical robots that enable minimally invasive surgeries with its da Vinci surgical systems. The primary surgical domains are urology, gynaecology, general surgery and cardiothoracic.

"In India we are in infancy in the technology adoption curve. Today a hospital without a magnetic resonance imaging (MRI) scan machine is considered as a clinic," Jeroen M.M. van Heesewijk, senior vice president, Asia Pacific and Global Distribution, told IANS over phone from Kochi.

"Offering robotic surgeries will also give a boost to the countries medical tourism sector," Mahendra Bhandari, CEO, Vattikuti Foundation, told IANS over phone.

Both were at Kochi to attend a two-day seminar on robotic surgery organised by Vattikuti Foundation.

According to van Heesewijk, India, China and Brazil are important markets for Intuitive Surgical.

A total of 26 da Vinci systems are in operation in India at various hospitals.

In India, Vattikuti Technologies is sole distributor and van Heesewijk said the company is not planning to go direct-selling directly to hospitals in India.

Van Heesewijk welcomed the tie-up between Google Inc. and Johnson & Johnson to work in the field of surgical robotics.

According to him, the fact that two global players with deep pockets getting into robotics is a clear indication that robotic surgery segment will get a big boost.

Meanwhile, the Vattikuti Foundation is planning to increase the number of surgeons trained on robotic surgical systems to 300.

"Presently, there are 147 surgeons trained in robotic surgeries in India. They do 300-400 robotic surgeries. Our target is to increase the surgeons trained in robotic surgeries to 300 by 2020," Bhandari said.

According to him, when the foundation was started in 2009-10 there were only five or six surgeons trained to carry out robotic surgeries.

Queried whether the foundation would train surgeons only on da Vinci systems distributed in India, he said: "Intuitive Surgical is the market leader."

Bhandari said once a surgeon is trained, training him in other systems is not a big issue.

On the advantages of robotic surgeries, he said the incision will be small and the loss of blood will be very minimal.

He said the recovery of the patient is faster and the post-operative pain will also be less.

According to Bhandari, robotic procedures in India that cover a wide spectrum of procedures -cardiac, urology, general surgery, thoracic, gynaecology, head and neck, vascular and paediatrics – are expected to cross the 6,000 procedures mark in 2015.

## 'Surgical robots to become ubiquitous in Indian hospitals'

Sep 13, 2015, (IANS)



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# R S C 2015



## (Robotic Surgeons Council Meet)

12 - 13 September 2015

Amrita Institute of Medical Sciences & Research Centre, Kochi

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