

## AsianAmerican Summit

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**ASIANAMERICAN MULTISPECIALTY SUMMIT VI**  
**LAPAROSCOPY AND MINIMALLY INVASIVE SURGERY**  
**HILTON HAWAIIAN VILLAGE BEACH RESORT & SPA**  
**HONOLULU, HAWAII, USA**

### FACULTY PRESENTATIONS

*alphabetical by faculty member name*

#### YOGA Needs a Scientific Accreditation by We the Surgeons

Brij B. Agarwal, Prof Dr Med

Practice of medicine will change more in coming 20 years than it has in last 2000 years. Promise of future shouldn't turn our back to past wisdom. Ignoring to investigate ignorance about ancient wisdom scientifically will let our progeny to accuse us of wasted time. Scientific acceptance of dynamic subatomic architecture of life has enabled cellular synthesis, making it pertinent to appraise yoga with current methodology lest it be called philosophical till our intellect graduates to understanding the same to be called science. The medical march is too dependent upon systems approach, statistical jargon and mathematical interpretations to assimilate the nuances of human body being part of cosmos and craving for a basic healing touch. Everybody is an individual masterpiece of art being in continuity with the universe and as that interwoven within the breath of existence. Life is the process of continuous change of states of energy along the axis of time, which itself is considered to pass according to Isaac Newton. Subjectivity in our knowledge of human body demands something holistic and objective across the existential spectrum of human experience. Assimilating inputs from existential past will make us objective and effective. Yoga is an epitome of accumulated wisdom that has helped human existence withstand the trials of evolution. Yoga is not merely a set of esoteric exercises but also a part of civilizational culture being inherently non-invasiveness and harmlessness. Biofeedback therapy, physiotherapy, psychotherapy and hypnotherapy etc... are fragmented approaches to understand issues which have been addressed in totality by yoga for centuries. In the backdrop of scientific reluctance versus 'science yet un-understood' any surgical innovation needs a philosophically scientific debate. Science has seen the validation of paradoxes like matter-anti-matter existential paradox. Scientific evolution seems primitive given the efficiency of locomotion and communication in fellow planet-dwellers such as insects, birds, fish, dolphin, penguins, etc.

#### Laparoscopic Management of Complicated ileocolic Crohn's Disease

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##### Introduction:

Crohn's disease (CD) is a chronic, transmural inflammation of the bowel that can affect any part of the gastrointestinal tract most commonly terminal ileum (TI), one of indications to surgical intervention is presence of complications. This study is performed to assess the feasibility of laparoscopic ileocolic resection for complicated Crohn's disease (presence of abscess, fistula, or recurrent disease) and to compare postoperative outcomes in patients with and without complicated Crohn's disease.

##### Methodology:

This a retrospective, comparative study of complicated ( fistula , intra abdominal abscess or recurrence of symptoms ) versus non complicated ileocolic CD patients who were treated laparoscopically versus open in a single center assessing intraoperative finding and complication rate from January 2009 till October 2012. Variables are expressed as percentages and were compared by a  $\chi^2$  test or Fisher's exact test. Statistical significance will be achieved if P-value is less than 0.05.

##### Result:

Fifty two patients were identified. . Twenty three(44% ) patients had complicated ileocolic Crohn's disease and twenty nine(56%) are non-complicated.in the complicated group, 19(83%) patients treated laparoscopically with one patient got leak(4%),one had a prolonged ileus(4%), and one conversion(4%), 4 patients(17%) treated with laparotomy with 1 (4%) had wound infection and 1(4%) had prolonged ileus. In the uncomplicated group, 26(90%) treated laparoscopically,one patient(3.4%) had leak, one(3.4%) had wound infection, one (3.4%) had internal hernia and one (3.4%) had conversion, three patients (10%)treated with laparotomy and one patient(3.4%) had wound dehiscence. The postoperative complications post laparoscopic versus open procedure were statistically insignificant in both groups.

##### Conclusion:

This comparative study suggests that complexity of the disease does not have major impact on the postoperative outcome between laparoscopic or open resection, the known and proven benefits of laparoscopic resection over open favor using this approach in the treatment of complicated ileocolic Crohn's disease; future randomized controlled trials are needed to support this conclusion.

#### Technical Tips and Special Devices for Single-Incision Laparoscopic Surgery in Pediatric Populations

Hizuru Amano, MD, Hiroo Uchida, MD, PhD, Hiroshi Kawashima, MD, Yujiro Tanaka, MD, PhD, Takayuki Masuko, MD, PhD, Kyoichi Deie, MD

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Laparoscopic surgery has evolved significantly and has shown to be a safe and feasible procedure as minimally invasive operations in adult surgery.

A lot of operations that were previously performed through abdominal wall incisions can now be said completed by laparoscopic surgery.

As the result of continuous efforts for minimal scar and less invasive procedure, single-incision laparoscopic surgery (SILS) was attempted and has gained popularity especially for general surgery within the past few decades.

However, it has not been widely accepted in pediatric populations for limited working space. In our children's hospital, we have sought to minimize the number of incisions and successfully reduced the number of incisions to just one.

SILS procedure has been applied to the following diseases, such as inguinal hernia, appendicitis, Hirschsprung's disease, Mechel's diverticulum, retrosternal diaphragmatic hernia, and linea alba hernia. This procedure also has been utilized for gastrotomy, splenectomy, gastropexy for gastric volvulus, and total colectomy for ulcerative colitis as well.

All cases were accomplished successfully without significant prolongation of operating time and severe complications. We describe our technical tips and special devices for SILS skill.

Reversed Y-shaped incision for good operability, use of curved instruments, the flexible laparoscope and a special needle with a wire loop at the tip have evolved utilization of SILS technique.

In our experience, SILS technique appears to be safe, feasible, and suitable for some pediatric surgical procedures due to these ideas.

## Laparoscopy-Assisted Total Gastrectomy with Roux-en-Y Reconstruction with Jejunal Distal Pouch at the Y limb and Esophagojejunostomy Using Laparoscopy-Guided Intracorporeal Circular Stapled Anastomosis (Kuniaki Aridome1), 2) Shoji Natsugoe1)

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Department of Digestive Surgery, Imamura Bunin Hospital 2)

We present the operative technique and the outcome of modified Roux-en-Y reconstruction using a jejunal distal pouch at the Y limb during laparoscopy-assisted total gastrectomy (LATG).

Following lymph node dissection, the jejunum was cut approximately 30 - 35 cm distal to the Treitz ligament. A side-to-side jejunojunction was created using a linear stapler at the Y limb to construct a jejunal distal pouch of about 8 cm in length. After the confirmation of esophageal margin, Orvil device was passed to the distal esophagus. Then, esophagojejunostomy was performed using the method of intracorporeal circular stapled anastomosis.

Thirty-three patients underwent this type of Roux-en-Y reconstruction in LATG. Postoperative anastomosis-related complications occurred as follows; there were one anastomotic minor leakage (3%) and five anastomotic stenosis (15%) due to the circular stapled esophagojejunostomy followed by effective and curative balloon dilation therapy.

The patients' dietary volume and body weight gradually increased during the second 6 months after surgery. Body mass index (BMI) was maintained at above Japanese average levels in about 80% of the patients at one year after surgery. Our experience showed that the Roux-en-Y reconstruction using jejunal distal pouch at the Y limb in LATG results in favorable postoperative meal intake and maintenance of an optimal BMI.

## Laparoscopic Hysterectomy at Low Resource Set Up

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### Aims and objectives:

Gynecological laparoscopic surgeries are at initial stages of its development in Pakistan mainly due to its high initial cost for OR setup, equipment and hand instruments. After performing level 1 and 2 surgeries for three years, laparoscopic hysterectomies have been started at our hospital. We share our experience of first 40 Total Laparoscopic Hysterectomies at a resource poor setup with the world.

### Material and methods:

As we are working at a low resource set up we made few major changes from conventional laparoscopic hysterectomy to increase its acceptance and cost effectiveness.

We started doing laparoscopic surgeries in our operating room (OR) with basic laparoscope and single chip camera and all surgeries are recorded for future reference and litigation.

For better ergonomics instead of expensive hydraulic operating table wooden platforms are used to stand along with our simple OR Table.

Initially we included only simple cases with normal size uteri and virgin abdomen and gradually started with complex cases.

Low cost myoma screw is used in place of uterine manipulators to manipulate the uterus.

Simple bipolar energy devices are used instead of expensive energy source for hemostasis.

After opening of vaginal vault gas leakage is prevented initially with a simple mop made by keeping few gauze pieces in a sterile glove and it is held at introitus by the assistant and later uterus is retrieved and kept in vagina till vault is closed with intra corporeal sutures.

Due to non-availability of morcellator due to its high cost large uterus with fibroid are retrieved after internal morcellation and enucleating fibroid for easy and atraumatic delivery through vagina.

All Laparoscopic Hysterectomies conducted at Gynae and obstetric department of Patel hospital Karachi from February till September 2013 were prospectively included in the study. Indications, operative time, per operative and postoperative complications were noted. Morbidity due to the procedure was determined by conversion to open laparotomy, total duration of hospital stay, postoperative complication, dealt with or without any intervention and status at 4 weeks follow up after discharge

### Results:

Total 40 laparoscopic hysterectomies were performed during 8 months period

Mean age of patients was 45 years (35- 55 years), mean parity was 4(2-7).

Common indications were dysfunctional uterine bleeding, fibroid uterus and endometrial hyperplasia. 38 (95%) were successful, 2 were completed as LAVH while 2 were converted to laparotomy due to bowel adhesions and ureteric injury respectively. The complication was detected and intervened there and then and managed. Mean operative time was 158 minutes (105-210 min). Number of surgeries gradually increased from two in first month to seven in 8th month. Four patients had complications, 3 had port site infection and one had ureteric injury. Mean hospital stay was 24-48 hours.

All patients including those with complications were stable on follow up.

### Conclusion:

Although minimally invasive surgery is at its peak in western world but it is still in its primitive stage in low resource developing countries due to associated cost, however we can overcome this with determination, safe adaptation and changes in conventional methods according to our institutional facilities.

## Robotics Microsurgery: Male Infertility, Chronic Orchialgia & Post-Hernia Pain

Jamin Brahmhbhatt, MD

Co-Director  
The PUR Clinic  
Personalized Urology & Robotics

The enhanced magnification, 3-D visualization, and surgical control offered by the surgical robotic system has led to its integration into microsurgical procedures for male infertility and chronic orchialgia. The addition of robotic assistance may allow an improvement in outcomes similar to when the operating microscope was introduced in microsurgery. Though the use of robotics in microsurgery is still in its early phases, initial findings are encouraging. This presentation will cover robotic microsurgical procedures and tools for infertility, chronic orchialgia/testicular pain, and post hernia pain such as vasovasostomy, vasoepididymostomy, varicocelelectomy, testicular sperm extraction and targeted denervation of the spermatic cord. Preliminary clinical studies appear to show improved operative efficiency and comparable outcomes. The use of robotic assistance during robotic microsurgical vasovasostomy appears to decrease operative duration and improve the rate of return of postoperative sperm counts compared to the pure microsurgical technique. Long-term prospective controlled trials are necessary to assess the true benefit for robotic-assisted microsurgery. The preliminary findings are promising, but further evaluation is warranted.

### Vaginal Treatment for Cesarean Scar Pregnancy

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Maternal and Child Health Hospital of Jiading District, Shanghai City. 201821

#### STUDY OBJECTIVE:

To assess the feasibility of the vaginal treatment for cesarean scar pregnancy with different sizes.

#### DESIGN:

Retrospective clinical study.

#### SETTING:

Maternal and Child Health Hospital of Jiading District.

#### PATIENTS:

6 cases operation were reviewed retrospectively. All patients had the diagnosis of a cesarean scar pregnancy established using transvaginal ultrasound.

#### MEASUREMENTS AND MAIN RESULTS:

The median (range) duration of surgery was 60 (30-120) minutes; blood loss during surgery was 45 (10-100) ml; length of hospital stay was 6(4-11) days. Perioperative complications occurred in 0.

#### CONCLUSION:

Vaginal operation is a minimally invasive and effective surgical approach for treatment of uterine scar pregnancy.

### Minilaparoscopic Surgery – Not Just a Pretty Face! What can be found beyond the aesthetics reasons?

Gustavo Carvalho, MD, PhD

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The advent of Natural Orifice Transluminal Endoscopic Surgery (NOTES) and subsequently Laparo Endoscopic Single Site Surgery (LESS) has called the attention of the surgeons to look for even less invasive modalities of surgical access.

Minilaparoscopy (MINI) is a natural advancement of laparoscopy, which proposes to diminish surgical trauma by reducing the diameter of the standard laparoscopic instruments, without losing range of motion in triangulation and visualization, important aspects that can be a major issue in NOTES and LESS. Minilaparoscopy was first described more than 15 years ago and is not really a new modality of access, but needs to be carefully revisited because several aspects have changed over this period of time:

1. New instruments were developed, much better designed and with more resistant materials, which are now giving a totally new face to MINI.
2. In procedures where enhanced visualization in a restricted space is necessary, MINI offers advantages over regular laparoscopic surgery (for example- for mini TEP inguinal hernia repair, mini lumbar or thoracic sympathectomies, mini common bile duct exploration - reconstructions and TEO – Transanal Endoscopic Operation). When it's necessary to suture or even just to tie a knot, the enhanced precision of the new low friction MINI equipments can have advantages in their handling over the conventional 5mm equipment that uses rubber sealing and valves that can preclude some amplitude of movement.

MINI is no longer an experimental procedure, and it's here to stay. As a matter of fact, one may say that the MINI has returned to stay. The same MINI that Michel Gagner and Peter Goh described on the 90s, that did not become popular because the instruments were deemed too flimsy and surgeons were not used to working with very thin, fragile, and expensive scopes. Moreover, surgeons insisted on clipping every structure from the umbilical port, which resulted in

changing the scope several times in a single procedure, making MINI not only complicated, but also boring and time consuming. Stigmatized as an expensive and complicated surgery, at that time MINI seemed to have no major advantages and did not progress the way industry had imagined, and many thought had been relegated to a footnote in the surgical texts.

With some minor adjustments in the technique, what we have named the Clipless cholecystectomy technique, we could overcome the problems of the MINI optics simply by tying knots to the cystic duct and cauterizing the cystic artery. This technique has been described in detail in a publication of 1000 cases (a series that now surpasses 1800), without mortality, conversion to open surgery or common bile duct injuries. Using the new MINI instruments we could safely complete more than 97% of cases with purely mini instruments. In order to avoid the use of mini-scopes, all gallbladders were removed in a bag, and most of our cases were discharged in less than 24h with virtually no pain. Currently, MINI Clipless is a 1-day surgery, safe, with all the advantages of laparoscopy, highly reproducible, cost effective, and with great aesthetic appeal.

Another great advantage of the MINI approach that usually is forgotten by many authors, who really want to address only the cosmetic issue, is the enhanced view. A surgeon that uses MINI can work much closer to the subject without being disturbed by the 5mm forceps. Mathematically speaking, we can find gains up to 2.7x in magnification when using MINI instruments, as the thinner instruments occupy less of the visual field.

In endoscopic surgery, peripheral vision is limited by the visual field of the laparoscope. In this tunnel vision, thinner instruments occupy less space, and a much better view can be obtained. MINI instruments fit well into the concept of amplified vision provided by laparoscopes. The increase in vision scale seen in laparoscopy does not find a perfect partnership with conventional 5-mm instruments, and they become coarse instruments for dealing with more delicate situations, such as biliary anastomosis, resection of a sympathetic ganglion adherent to the vena cava, or dissection of the deferens duct from the hernia sac during hernia surgery. This is especially important in retroperitoneal surgeries, where the space is naturally restricted and inadvertent movements may result in peritoneal perforations thus causing gas escape and further space reduction. Another great application for the New Low Friction mini instruments is the TEO (Transanal Endoscopic Operation) where an enhanced view and more freedom of movements can be experienced. More delicate surgeries should be preferably done by minilaparoscopy, because you can get better vision and work with more precision due to the thinner instruments.

Current technical limitations of MINI are being solved by the efforts of the industry in crafting more resistant and higher performing instruments. Longer trocars without sealing (Low Friction) help to stabilize mini forceps and increase the strength and durability of the mini equipment without limiting surgical movements. Even though MINI instruments are more delicate, when properly used they do not need much more maintenance than standard 5-mm laparoscopy instruments. Current Low Friction MINI trocars (unlike their ancestors from the 90s) do not have a sealing membrane (what can be called as "no rubber or Low friction trocars"). They have very low friction and therefore almost no force is needed to move the instruments inside the trocars, which prevents the undesirable movement, and eventually the total trocar displacement of the trocars, injuring the skin and worsening cosmesis. Another important aspect of the new MINI trocars is that they have a ball shaped dilating tip with a very imperceptible smooth transition between the tip and cannula, allowing for a minimal skin incision by radially dilating the skin, muscle layers and fascia. Adding this to the absence of friction with the rubber, there is no dislocation of the trocar during operation and hence, improved cosmesis at the site of penetration of the trocar.

The ball shaped tip introducer also helps to minimize injuries to vessels and nerves when gently introducing the trocar, by dissecting/ splitting instead of cutting. There is an extra-precise fit between instrument and cannula, resulting in extremely reduced friction and minimal gas leak (<0.1l/min). The increase in CO2 leak, formerly regarded as a reason for criticism, actually without any real consequence in the performance of the procedure, is being successfully corrected by these new trocar models.

In short there is much more than "just a pretty face" to be emphasized when evaluating the benefits of actual minilaparoscopic surgery. Gains that can go far beyond the cosmesis (only proven gains so far of single port and LESS

surgery), ranging from less abdominal wall trauma, more precise surgical movements, enhanced view and better dexterity, without significantly increasing the operative time, surgical effort or costs and the most important of all, without compromising the standards of surgical safety.

### Novel Technique for Laparoscopic CBD Stone Extraction: Our Primary Experience

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#### Objective:

To report a novel technique of transcystic approach alternative to the existed procedure.

#### Materials and methods:

Nine patients diagnosed with cholelithiasis and CBD stones were enrolled into this study. The main inclusive criteria included: no upper abdominal surgical history; stone was less than 5 mm. The procedure was carried out in four trocar cholecystectomy technique. After the gallbladder was dissected free from the liver connections in a retrograde fashion, the fundus of gallbladder was extracted via the 12 mm port incision in the right epigastrium. Choledochoscope was inserted into the gallbladder from the small opening in the fundus of gallbladder extracorporeally, and advanced to the CBD via cystic duct under the guide of both laparoscopic imaging and endoscopic imaging. After stones were retrieved under direct choledochoscopic vision, a drainage tube was placed in the subhepatic space.

#### Results:

All patients survived the operation and 7 of 9 patients had successful transcystic duct CBD stone clearance. Narrow cystic duct and unfavorable anatomy of junction of cystic duct and CBD resulted in losing access to CBD. No bile leakage, hemobilia, or pancreatitis occurred. Transient epigastric colic pain happened in 2 patients, and relieved by use of anisodamine.

#### Conclusions:

Our novel transcystic approach to laparoscopic CBD exploration is feasible and efficiency.

### A New Extraphepatic Glisson Right Liver Pedicle Blood Flow Block Technique Applied in the Laparoscopic Right Hepatectomy

**Chen Huan-wei, Deng Fei-wen, Wang Feng-jie, Hu Jian-yuan**

The Hepatic and Pancreatic Surgery Department, Foshan Hospital, Foshan, Sun Yat Sen University. China, 528000

#### Objective:

To explore the feasibility and safety of the extraphepatic Glisson right liver pedicle blood flow block technique applied in the laparoscopic right hepatectomy. Methods: Eight patients with right liver neoplasms underwent laparoscopic hepatectomy from March to August 2013, including three cases of hepatocellular carcinoma, one liver carcinoma sarcomatodes, one liver blood vessel epithelium like tumor, one case of hepatic haemangioma, one cases of hepatic metastatic carcinoma. Extraphepatic Glisson right liver pedicle blood flow block technique was applied for the controlling hemorrhage intraoperation., which was through lowering the anterior porta hepatic plate, dissection the posterior porta hepatic plate, and passing the right angle forceps finished the extrohepatic Glisson dissection and right liver pedicle blood flow block.

#### Results:

Right hemihepatectomy were performed in three cases, two cases underwent segment V+VI hepatectomy, one case with segment VI+VIII hepatectomy and two cases with segment VI hepatectomy. The time for the dissection of the porta hepatic

plate was 15-20 minutes, and there was no hemorrhage and bile leakage complications. Conclusion: The right hemihepatic blood flow block technique through the porta hepatic plate applied in the laparoscopic right hepatectomy was safe, simple and repeatable procedure, which should in favour of facilitating the laparoscopic right hepatectomy.

### Study on Rectal Cancer Operation without Auxiliary Incision Combined Laparoscopic and TEM

**Yueyu Chen Peidong Shi Runsheng Guo Zhaohui Liu**

General Surgery, Jiading branch of Renji Hospital, Shanghai Jiaotong University School of medicine

#### Objective:

To explore the validity, feasibility and the safety of united technologies through the application of TEM technique in abdominal laparoscopic operation without auxiliary incision.

#### Methods:

Prospective study on some patients with high rectal cancer from February.2008 to June was done, including 30 patients with endoscopy combined operation and conventional laparoscopic operation respectively. To observe the operation time, amount of bleeding, anal exhaust time, hospitalization time, complications and so on. Results: The 2 groups were balance test in gender, age, and tumor stage. The operation time, amount of bleeding, complications, survival and recurrence rate had no significant difference. Anal exhaust time and hospitalization time was significant shorten in endoscopy combined group.

#### Conclusion:

Though our study we know that samples taken out and stapler nail seat inserted were feasible, effective and safety through the application of TEM technology in the laparoscopic operation. Because of no auxiliary incision in belly, patients can be early ambulation, and hospitalization period was shortened also. Whether would it be used as the modified NOTES operation for rectal cancer operation need further study.

Keywords: rectal cancer, laparoscopic surgery

### The Outcome of Laparoscopic Common Bile Exploration (LCBDE)

**Yoshihide Chino M.D, Masaki Fujimura M.D, Isao Sato M.D, Hajime Yamasaki M.D, Makoto Mizutani M.D, Tomotake Tabata M.D, Iwao Kitazono M.D, Hirofumi Ueda M.D, Minoru Iida M.D.**

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#### Introduction:

In Japan, common bile duct stones (CBDS) were first treated with endoscopic sphincterotomy (EST), and then with laparoscopic cholecystectomy. Recently however, the advent of laparoscopic procedures has led to an increasingly important role for laparoscopic common bile duct exploration in the treatment of CBDS. The aim of the current study was to evaluate the efficacy and safety of LCBDE for patients who have had previous operations.

#### Methods:

Between 2004 and 2012, 303 patients underwent LCBDE in our hospital. 70 patients with previous operations (group A) were retrospectively reviewed. The points evaluated were: operation time, blood loss, post operative day of C-tube removal, length of hospital stays, CBD stone clearance rate, morbidity and mortality. These were statistically compared with another 233 patients (group B).

#### Results:

There were 45 male patients and 25 female patients in group A, and 114 males and 119 females in group B. Their mean age was 70±12 years in group A, and 69±13 in group B. Mean operation times, blood loss, postoperative C-tube removal times and hospital stays in groups A and B were 201±61min and 197±59 min, 15±29 and 19±43ml, 4.8±2.2 days and 5.0±2.7 days,

8.5±8.6 days and 10.0±8.8 days, respectively. There were no significant statistical differences between the two groups. The CBD clearance rate was 99% in group A and 98% in group B. Morbidities included pancreatitis (1.4%) in group A, and bile leakage (0.4%) in group B. There was no mortality in group A, but two patients (0.8%) in group B died.

#### Conclusion:

Experience in our institute has shown LCBDE to be a safe and feasible procedure for patients who have had previous operations.

### Laparoscopic Debulking Surgery with Advanced Ovarian Cancer

Joong Sub Choi, Prof Dr Med

#### Background:

This presentation aimed to evaluate the feasibility of laparoscopic primary debulking surgery for women with advanced epithelial ovarian cancer.

#### Methods:

The clinicopathologic and survival data of 32 primary epithelial ovarian cancer patients who underwent laparoscopic primary debulking surgery from January 2005 to October 2013 were retrospectively analyzed.

#### Results:

Thirty-two women underwent laparoscopic primary debulking surgery in this period. The mean postoperative hospital stay, estimated blood loss, and overall complication rate were 10.3 days, 350 mL, and 13.5%, respectively. In the long-term outcome analysis, the disease-free survival rate was not inferior to laparotomic approach.

#### Conclusions:

Laparoscopic debulking surgery is feasible for women with epithelial ovarian cancer.

### Operative Laparoscopy and Hysterectomy in Management of Abdominal and Pelvic Pain, is it Efficacious?

Maurice K. Chung, RPh, MD

Chronic pelvic pain is estimated to affect 1 in 7 women, or approximately 9 million US women, with associated health care costs approaching \$3 billion annually. The vast majority of patients with chronic pelvic pain (CPP) do not seek treatment, and less than 20% consult a gynecologist. Approximately 20% to 40% of laparoscopies are done for CPP.

In the gynecologic literature, chronic pelvic pain is associated with endometriosis in 30% to 87% of the cases. Endometriosis has been regarded as one of the most common causes of chronic pelvic pain in which affects an estimated 5 million U.S. women. Definitive diagnosis of endometriosis requires operative laparoscopy evaluation. Even with new advances in treatment of this disease, the recurrent rate remains as high as 50%. To make the matter worse it is considered as a progressive disease in more than 60% of patients. This often leads to many reoperations, including laparoscopies and even hysterectomies. Treatment of endometriosis-related chronic pelvic pain remains challenging to the clinicians and the results have not been satisfactory. We are exploring the data of surgical treatment of pelvic pain to see whether it is an effective solution.

### Where Are We Going in Energy Sources Devices?

Claudio P. Crispi, MD

The development of the "intelligent" bipolar was a very well received advance in the use of electricity. These systems are capable of reading the impedance of tissues, which permits the delivery of enough heat for coagulation functions without

prolonged usage times and while minimizing thermal damage. Currently, these devices can, with the use of nanotechnology, limit the temperature to certain preset levels and "locking up" (confining) the heat to a zone of approximately 1-2 mm.

Parallel to this development, we have seen advances in the use of ultrasonic energy emerge prominently. These devices function with a similar philosophy to limit the lateral thermal spread and depth of heat coagulation, while permitting faster and more accurate cuts with less collateral heat dispersion. Their use is currently limited to blood vessels. However, other devices are being developed to extend their use by combining both intelligent and bipolar ultrasonic energy into the same device, allowing expanded applications and use in larger diameter vessels.

But it is not just equipment with cutting and coagulation capability with the use of energy that have seen significant developments. We currently have several clotting substances that favor both aggregation as with the production of fibrin, while promoting hemostasis in critical areas near vital structures, even in small blood vessels, with more security.

### WORKSHOP: "Building a Successful Simulation Training Center: Transitioning from Why to HOW"

Patrick de la Roza, Jay A. Redan, MD and Vickie White

The logistics involved with set up and maintenance of a simulation and learning center can be quite a formidable task. Unlike a classroom setting, a simulation center requires interactive computers and models; start up and maintenance costs; as well as specialized faculty to teach and observe the class participants and make corrective actions to the expected errors in a simulated environment.

The following 3 lectures should help you with a starting point for developing your Simulation Center

- 1) "How to build Strategic Alliances with Physicians and Industry"
- 2) "Essentials of the Business Model needed for a successful Simulation Center"
- 3) "How to choose your faculty for your Simulation Center"

These three learning objectives as lectures should help the participant understand some basics from our examples in the United States. However, no matter where you are in the world, these three points are valid anywhere.

### Why Lap Repair of Inguinal Hernia Should Be the Gold Standard

Sanjay Dhandharia, MBBS, MS (Surgery)

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Whenever a new idea or process starts, it faces lots of criticism. Inguinal hernia repair was first published in 1871. Since then lot of newer open procedures have been tried upon until 2009, when the laparoscopic repair was published. It also faced criticism from all parts of planet. Still it rapidly generated interest among most of the surgeons doing some form of laparoscopic surgery and lots of data kept on collecting in favor of this procedure which also underwent refinement and development, soon it took over the scene. Lots of evidence is now available regarding advantages of laparoscopic hernia repair on various parameters including time of surgery, cost, stay, convalescence, complications, and early return to work. Learning curve should not be considered a problem in modern day training programs. Operating time comes down with practice. These all factors conclude laparoscopic repair to be best procedure till date, so why should one resist calling it a gold standard treatment.

### Robotic Assisted Low Anterior Resection for Rectal Cancers

Dominic, Chi-chung FOO, MD

Institution: Department of Surgery, University of Hong Kong Li Ka Shing Faculty of Medicine, Hong Kong SAR, China.

Laparoscopic colectomy for colon cancer is a well-recognized procedure nowadays. It has the benefit of minimizing surgical trauma. Although it has now been well adopted in many centres, a similar transition from open to laparoscopic resection for low rectal cancers has only occurred in limited centres. The main hurdle is the complexity of performing oncological sound minimal invasive surgery in a narrow confined pelvic cavity. The preservation of genitourinary function added further challenge.

The use of robotics opens a new page in rectal cancer surgery. It overcomes the inherent limitations of conventional laparoscopic method. It provides a stable ergonomic platform for the surgeon to operate. It has a 3-dimensional view of the operating field. Surgeon can control three robotic arms with ultra-flexible articulating instruments. The robotic arms also provide excellent countertraction. Contrast to the conventional laparoscopic rectal surgery, the operating surgeon can site comfortably at the console and perform most of the dissection without much struggling.

This presentation would discuss the application of robotics in rectal cancer surgery. It would focus on how the use of robotic system helps to facilitate dissection to achieve total mesorectal excision and preserve the nearby neurovascular structures. It would also discuss on performing sphincter-saving procedure in ultralow rectal cancers. The learning curve and initial results of robotic assisted rectal resection would also be presented.

### The Progress of Laparoscopic and Endoscopic Surgery in General Surgery in Mainland China

Prof. Xianbo Fu

Executive Editor in Chief, Chinese Journal of Minimally Invasive Surgery (CJMIS)

In Mainland China, the first case of laparoscopic cholecystectomy (LC) was performed In February 1991. The first case of herniorrhaphy, the liver cyst fenestration and common bile duct exploration with stone extraction was in 1992. The first case of laparoscopic subtotal gastrectomy, hepatectomy was in 1993. The first case of laparoscopic splenectomy was in 1994. The first case of more difficult spleen-sparing distal pancreatectomy was successfully completed in 2001. The first case of the most difficult pancreaticoduodenectomy was in 2003. Now Laparoscopic cholecystectomy has been carried out at all levels of hospital including more than 20000 county district hospitals all over the country. Laparoscopic radical resection of gastric and colorectal cancer and distal pancreatectomy not only could be performed in major hospitals but also in several municipal even in the county district hospitals. Now surgeries, which are anatomy of the complex and prone to complications, such as left or right hemihepatectomy, pancreaticoduodenectomy, spleen-sparing distal pancreatectomy, radical total gastrectomy for gastric cancer, anus-preserving radical resection of rectal cancer can be completed under laparoscopy. The biggest single center case report is 15000 cases for LC, 1712 cases for common bile duct exploration with stone extraction, 4000 cases for pediatric hernia sac high ligation, 346 cases for radical gastrectomy for cancer, 653 cases for radical resection for colorectal cancer, 463 cases for hepatectomy, 135 cases for splenectomy, 68 cases for distal pancreatectomy, 17 cases for pancreaticoduodenectomy.

Hybrid laparoscopic surgery being joint application of laparoscopy and endoscopy (gastroscopy, colonoscopy) and under the guidance of the NOTES idea the transumbilical single site incision laparoscopic surgery also extensively developed and achieved the expert consensus (2010).

Weight-loss surgery for patients with obesity and obesity with type 2 diabetes, named metabolic disease, has made the expert consensus (2011) and gradually developed 77 papers for Weight-loss surgery, all of 387 cases. The biggest case report is 226 cases. 47 papers for gastric bypass surgery for obesity with type 2 diabetes, 479 cases were performed in 13 hospitals. The biggest case report is 200 cases.

The first case report of robotic surgery was in 2010 in mainland china. At present reported completed robotic surgeries were

580 cases in 7 hospitals, which mainly underwent difficult hepatectomy, pancreaticoduodenectomy, spleen-sparing distal pancreatectomy, radical resection of rectal carcinoma and other advanced radical resection of gastric cancer.

The first case report on 3D (three-dimensional) laparoscopic surgery was on September 22, 2012. Up to now 17 hospitals across the country reported to carry out 3 D laparoscopic surgery in only a year. 3D laparoscopy will have a broad future in mainland China.

Cosmetic endoscopic thyroidectomy and breast surgery were extensively developed (713 and 151 papers respectively). The largest single center case report of thyroidectomy is 1200 cases. The largest single center case report of mastoscopic-assisted breast-conserving surgery for early breast cancer and axillary lymph dissection is 276 cases.

### Laparoscopic Reduced Port Surgery for a Gastric GIST

Hidenori Fujii MD PhD, Yoshiyuki Kawakami MD PhD, Toshiharu Aotake MD PhD

We introduced single-incision laparoscopic surgery (SLS) and have performed it on 12 cases with a protocol of reduced port surgery (RPS). At the time of introduction of SLS, we performed operations with three trocars inserted via a 2.5-cm umbilical incision. After the appearance of high-performance thin forceps, however, umbilical incision length was reduced to 1.5 cm. If tumor size was small, an operation was performed with a 12-mm blunt port and a 6-mm metal cannula inserted via the incision, using an inserted thin forceps of 3 mm or less in diameter. The use of a thin forceps enables us to reduce difficulty by holding triangulation and to improve the cosmetic outcome. For tumors in the lesser curvature in the vicinity of the esophagus which was highly difficult to resect, however, a 5-mm trocar and a thin forceps in addition to 2 trocars at the umbilical site were used. If tumor size was large, an access device placed into a 3-cm umbilical incision and another trocar was inserted to the best location for the operation. The mean operation time was 105 min (47-159 min). No postoperative complication was reported, and a surgical scar was inconspicuous. RPS for GIST based on single-incision surgery with the surgical strategy in which an optimal access procedure and device were selected according to the size and the location of GIST was useful and cost-effective.

### Uterine Artery-Preserving Laparoscopic Radical Trachelectomy for Early Stage Cervical Carcinoma

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An increasing number of women who wish to preserve their fertility have been diagnosed cervical cancer at a relatively young age. Laparoscopic radical trachelectomy (LRT), with a laparoscopic approach, which has the advantages of abdominal and vaginal approaches, has been reported recently. In considering the function of uterine and future fertility, we developed laparoscopic radical trachelectomy with preserving the uterine artery.

We introduce our experience about the surgery by some fragments of video. Firstly we dissect bilateral pelvic lymph node. The peritoneum is incised down to the side of the bladder, the bladder is then detached from the cervix and mobilized inferiorly over the anterior of the vagina. The uterine artery is identified at its origin from the internal iliac artery and gently preserved, separating the tissue between the artery and the ureter. After separate the artery and the ureter, the vesicouterine ligaments and paracervix is exposed. The vesicouterine ligament is dissected. The ureters is then dissected and mobilized to the bladder. The descending branch of the uterine artery is ligated and divided. The pararectal space is developed and the uterosacral ligaments are severed. The cardinal ligaments are severed. A vaginal cuff is incised 2-3 cm below the fornices. The uterine corpus is transected at a level 5-10 mm below the internal os. The remnant cervix is sutured to the upper vagina. The two key points to preserve the artery are the full skeletonisation of uterine artery and ureterolysis.

## Robotics and Laparoscopy in Urinary Stones

Deok Hyun Han, MD

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Laparoscopic surgery is now standard procedure for many urological surgeries including nephrectomy, adrenalectomy, pyeloplasty, prostatectomy, and so forth. However, in treatment of urinary stone disease, laparoscopy has limited role because there are effective and safe minimally invasive modalities for urolithiasis – shockwave lithotripsy, percutaneous nephrolithotomy, and ureteroscopy.

In EAU/AUA joint guideline that was published in 2007, ureteroscopy and shockwave lithotripsy were recommended as the first line treatments for ureter stones those were followed by percutaneous nephrolithotomy as the second line option. In that guideline, laparoscopic surgery was considered as third line treatment option. However, shockwave lithotripsy is less effective in large stone and ureteroscopy is still technically demanding in upper ureter stones. Furthermore, new generation flexible ureteroscope is very expensive and not available in many centers because of cost-effectiveness. In large impacted upper ureter stone, laparoscopic stone removal seems to be very effective procedure.

In large renal stone that is bigger than 2cm, percutaneous nephrolithotomy is considered as the standard treatment. However, in complex staghorn calculi, open nephrolithotomy still has an important role. In general, laparoscopic nephrolithotomy is technically very difficult and is not accepted as a standard procedure as open nephrolithotomy. However, recently robot-assisted surgery enables many operations to be performed effectively and safely. The application of robot-assisted surgery seems to be able to change the role of laparoscopy in treatment of large complex renal stones.

Our experience of ureterolithotomy using single port nephrectomy and nephrolithotomy using daVinci system will be introduced.

## Laparoscopic Sparing-Nerve Extensive Hysterectomy

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### Objective:

Reserved the Laparoscopic sparing-nerve Extensive hysterectomy (Laparoscopic sparing-nerve Extensive hysterectomy, **LSRH**) effects on bladder function recovery.

### Methods:

October 2008~ October 2013, 66 cases LSRH (study group), and 40 cases of traditional radical hysterectomy (the control group), comparing postoperative bladder function.

### Results:

(1) Between the two groups, blood loss, number of lymph nodes removed and cervical tissue adjacent, vaginal resection length, the difference was not statistically significant ( $P > 0.05$ ), but the operation time, postoperative hospital stay, LSRH group were longer than LRH ( $P < 0.05$ ); (2) The mean indwelling catheter time, the incidence of urinary retention, residual urine volume comparison, the difference was statistically significant ( $P < 0.05$ ).

### Conclusion:

Laparoscopic nerve reserved radical hysterectomy is feasible and safe, conducive to the recovery of bladder function.

## Laparoscopic Sleeve Gastrectomy with Duodenal-jejunal bypass (DJB) for the Treatment of Type II Diabetes for Asians

## Kazunori Kasama, MD, FACS, Yosuke Seki, MD, PhD

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### Background:

It is well-known that insulin deficiency and insulin resistance are involved in the pathogenesis of T2DM. And the relative importance of each factor to T2DM differs significantly according to ethnicity. In Asian diabetics, impaired early-phase insulin secretion is the initial abnormality in the development of glucose intolerance in both non-obese and obese individuals.

### Methods:

We started laparoscopic sleeve gastrectomy with duodenojejunal bypass (LSG-DJB) as an alternative to LRYGB for the patients who have a potential risk of future gastric cancer in the remnant stomach. From 4/2007 to 5/2012, 95 patients underwent LSG-DJB. Mean initial BMI  $39.3 \pm 7.1$  kg/m<sup>2</sup>. Eighty-one patients (85%) met diagnostic criteria of T2DM including 34 patients treated with insulin. Post-operative F/Us were strictly done by our multidisciplinary team.

### Results:

The %EWL at 1, 3, 6, 12, 18, 24 months after surgery was  $24.0 \pm 8.7$ ,  $42.0 \pm 13.6$ ,  $60.3 \pm 19.0$ ,  $68.1 \pm 17.6$ ,  $71.6 \pm 21.8$ ,  $63.4 \pm 17.6\%$ , respectively. The mean HbA<sub>1c</sub> value at the initial consultation was  $9.1 \pm 2.4\%$  and 1, 3, 6, 12, 18, 24 months after surgery was  $6.3 \pm 0.6\%$ ,  $5.7 \pm 0.7\%$ ,  $5.4 \pm 0.5\%$ ,  $5.5 \pm 0.7\%$ ,  $5.7 \pm 1.0$ ,  $5.3 \pm 0.5\%$ , respectively. Clinical remission of T2DM was observed in 90.5%. 75g OGTT at 6 months after surgery revealed that the insulinogenic index increased significantly from  $0.30 \pm 0.25$  to  $0.84 \pm 0.95$ . This improvement was observed not only in high C-peptide group (preoperative fasting serum C-peptide  $> 3$  ng/mL) but also low C-peptide group (C-peptide level  $< 3$  ng/mL) which is known as a group of "hard to treat by LSG".

**Conclusions:** We strongly speculate that the meaning of adding DJB to SG would be to ameliorate impaired early-phase insulin secretion which is the important pathology of Asian type T2DM.

## Laparoscopic Liver Resection for HCC

Hong Jin Kim, Prof Dr Med

With accumulation of experience, laparoscopic liver resection is increasing recently. Laparoscopic liver resections are expanding to operation for malignancy, major hepatic resection, and difficult locations. Advantages of laparoscopic liver resection (LLR) for HCC are avoidance of collateral vessel ligation, decreased postoperative ascites, few postoperative hepatic insufficiency, lesser postoperative adhesion, wound complications, and short hospital stay. One of the major advantages of laparoscopy in liver resection is that it decreases operative bleeding. Laparoscopic HCC resection is safe and leads to good postoperative and oncologic outcomes. Recent report indicates that prior LLR for HCC compared OLR facilitated subsequent salvage liver transplantation with decreased morbidity. More recently major anatomic laparoscopic liver resection and operations at the difficult locations also became feasible. We have experienced 70 LLR for HCCs. Patients with wedge resection, segmentectomy, Lt. lat. sectionectomy, segmentectomy, post. Sectionectomy, left hemihepatectomy and right hemihepatectomy were 31, 18, 12, 5, 2, and 2, respectively. I will introduce our technique with representative cases. In conclusion laparoscopic resection for HCC is feasible in a large number of patients, with good operative and oncologic results. Laparoscopic liver resection for HCC should be considered in selected patients in centers experienced in open liver surgery and in advanced laparoscopic surgery.

## Radiofrequency Ablation of Early Breast Cancer

1 Ku Sang Kim, 2 Hee Jeong Kim

1 Department of surgery, School of Medicine, Ajou University Hospital, 2 Asan Medical Center

### Background:

Non-surgical ablation is an attractive approach as a local control method for breast cancer. We performed phase II trial to determine the efficacy and safety of radiofrequency ablation of small invasive breast cancer

#### Methods:

A total of 12 patients with early breast cancer were enrolled at Ajou university hospital and Asan medical center. Inclusion criteria were less than 1 cm tumor size and clinical negative lymph node. All the patients were checked by MRI for tumor and lymph node status, and excluding multifocal breast cancer. After sentinel lymph node biopsy, all the patients had received RFA, and then lumpectomy

#### Results:

The mean tumor size on MRI before surgery was 7.8 mm (range 0.6-1mm). The mean time of RFA was 10 minutes. One patient was shown a skin burn just above the insertion site of ablation. After ablation, the mean tumor mass on surgical specimen was 7.0 mm (range 0.4-1mm). No patients had viable cancer cells on surgical specimen. All the surgical specimens showed clear surgical resection margin

#### Conclusion:

RFA can be promising minimally invasive treatment of small breast cancer, as it can achieve cell ablation with a low complication rate. But for proving the oncologic safety, it is necessary to investigate of long term results of sole local therapy in terms of a survival and follow up issues.

### Robot Assisted High Paraaortic LND

Tae Joong Kim

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Aortic lymphadenectomy is indicated in some patients with gynecologic cancer. The extent of the lymphadenectomy can be divided into infrarenal and inframesenteric nodes. In node positive endometrial cancer patients, the aortic nodes were found to be involved in 67% of patients, and among those the left infrarenal group was involved in 77%. More importantly, among those with positive left infrarenal nodes, 60% had negative ipsilateral inframesenteric nodes and 71% had negative ipsilateral common iliac nodes [Mariani A, Gynecol Oncol 2008]. Since the number of left infrarenal nodes is about twice the number of inframesenteric nodes and that lymphatic channels along the ovarian vessels bypass the inframesenteric nodes, the left infrarenal group can be involved despite negative inframesenteric nodes.

It has been believed that the current robotic system prohibits operating in both the pelvis and upper abdomen because of limitations in arm mobility. However, to operate both pelvis and high paraaortic region with the same port placement is not impossible, though not easy.

Here, I'll show the tips for high paraaortic lymphadenectomy with video clips.

### Cosmesis and Postoperative Pain after Reduced Port Surgery performed in a Rural Hospital of Japan

Kenju Ko, MD, PhD

#### Purpose:

The aim of this study is to assess the effects in cosmesis and patient satisfaction given by reduced port surgery especially in laparoscopic cholecystectomy.

#### Methods:

Our department has three procedures for LC including conventional LC (CLC), needlescopic cholecystectomy (NC) and single incision LC with additional small port (TANKO+1). DAS59 questionnaire was sent to 142 patients who had undergone one of the three procedures and answers sent back were analyzed.

#### Results:

All procedures acquired enough satisfaction and the result of CLC, NC and TANKO+1 were 19.1, 21.0 and 20.2 in DAS 59 score, respectively. Detailed assessment revealed that the rate of dissatisfied patients about postoperative wound was 4.3%, significantly lower in NC compared with 23% in NC and 27% in TANKO+1. The larger the wound size is, the more complaints about cosmesis the patients showed. However, there were no complaints about 3.5mm long wound.

#### Conclusion:

No advantages were found in cosmetic satisfaction in reduced port laparoscopic cholecystectomy. However, it was suggested that wound size might correlate with satisfaction.

### Can We Predict the Severity of Acute Appendicitis? Case of a Retrospective Study Of 230 Laparoscopic Appendectomies

Francesco Lattanzio, MD

Appendectomy is probably the most practiced in surgery departments; however an abuse of this technique is often blamed on surgeons as in 20-30% of the cases, the clinical diagnosis is not correct. In recent years, laparoscopy for diagnostic purposes has been introduced in appendix syndromes; nevertheless the acute appendicitis is a benign disease with a quite high mortality (about 1%).

The purpose of this retrospective study is to demonstrate whether there are clinical factors (body temperature, duration of symptoms), biological (complete blood count (CBC)) or morphological (ultrasound and/or TC) that are predictive of the severity of acute appendicitis. Between January 2005 and July 2007 230 laparoscopic appendectomies were made on 110 females (47.8 %) and 120 males (52.2 %).

The average age is 30.9 years + / - 14.03 (range: 15-81 years). The duration of the symptoms observed at their onset showed a mean of 2.88 days (range 1-60 days). The average duration of hospitalization was 3.43 days (range 1-27 days). The rate of laparoscopic conversions was 9.6 % (22).

On the basis of the duration of the symptoms the patients were divided into three groups: group A (up to 24 hours of duration), Group B (between 24 and 48 hours), Group C (more than 48 hours). Histological examinations highlighted 29 catarrhal appendicitis (12.6%), 142 phlegmonous appendicitis (61.7%), 37 gangrenous appendicitis (16.1%), 12 chronic appendicitis (5.2%), 10 healthy appendices (4.3%), and finally 39 abscesses (17%).

In group A we found 14 catarrhal, 82 phlegmonous, 9 gangrenous, 3 chronic, 4 healthy appendices and 9 abscesses. In Group B 9 catarrhal, 35 phlegmonous, 9 gangrenous, 5 chronic, 1 healthy appendices, 8 abscesses. In Group C 6 catarrhal, 25 phlegmonous, 19 gangrenous, 4 chronic, 5 healthy appendices, 22 abscesses.

The analysis of the data of patients belonging to group C shows that the later the patient is seen (more than 48 hours from the onset of the symptoms), the higher the proportion of a gangrenous appendicitis ( $p < 0.0001$ ,  $R = 0.249$ ).

The prevalence of abscesses is higher in group C (22 abscesses, that is 37.3% of patients) with  $p < 0.0001$  and correlation coefficient  $R$  equal to 0.249. In group C a large number of laparoscopic conversions can as well be found (15), that is 25.4 % of the patients in group C ( $p < 0.001$ ,  $R = 0.261$ ).

The average duration of hospitalization was higher in group C - 4.5 days (range 2-27) - if compared to group A - 3.1 (range 1-7) and in group B - 2.9 (range 1-19). The test of the difference in the mean values turned out to be valid at  $p < 0.019$ .

In this study gangrenous appendices and abscesses are more frequent due to the older age ( $p < 0.006$ ,  $R = 0.182$  for the gangrenous cases;  $p < 0.01$  and  $R = 0.17$  for abscesses); these data confirm the study published by Korner in 2001. Finally healthy appendices ( $p < 0.037$ ,  $R = 0.137$ ) and chronic appendicitis ( $p < 0.011$ ,  $R = 0.167$ ) were more frequent among women.

## Discussion

It is known that the pathological and anatomical process of acute appendicitis passes from catharral form to phlegmonous, then gangrenous and finally to perforated. This study confirms that if the preoperative diagnosis is uncertain with symptoms that do not go beyond 48 hours from their onset, we are authorized to wait for another 48 hours before further exploratory laparoscopy in order to avoid a number of unnecessary interventions.

After 48 hours of evolution of a true acute appendicitis the incidence of complications significantly increases (gangrene, perforation, abscess, laparoscopic conversions, increase in hospital days). Finally, in this study on women operated for acute appendicitis we found more healthy appendices and chronic appendix lesions due to diseases of the genital apparatus that often mimic the same symptoms of an acute appendicitis.

In conclusion, the preoperative diagnosis of acute appendicitis is not always easy, especially in women. In the case of acute appendicitis the spontaneous development after 48 hours leads to a statistically significant increase in severity and the morbidity of the appendicitis. Meanwhile we need to confirm or eliminate with certainty the diagnosis of acute appendicitis, in case of doubt exploratory laparoscopy is recommended within the limit of these two days.

## Robotic BABA Thyroid Surgery

Kyu Eun Lee

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Since bilateral axillo-breast approach (BABA) endoscopic thyroidectomy was introduced in 2004, much improvement has been achieved in thyroidectomy in terms of both oncological concept and surgical completeness. This was mainly attributed to the introduction of da Vinci Robotic system which facilitates sophisticated movement using endowrists of high degree range of motion and high definition 3D image. In addition to the established merits of BABA endoscopic thyroidectomy, BABA robotic system enables large mass removal and lymph node dissection which are difficult with endoscopic technique. Indication of BABA robotic thyroidectomy in SNUH are 1) patients with low risk well-differentiated thyroid cancer, 2) patients with Graves' disease, 3) patients with benign thyroid nodule sized from 5 cm to 8 cm, and 4) male patients who indicated for endoscopic thyroid surgery.

Indications for endoscopic thyroid surgery includes: 1) benign thyroid nodule less than 5 cm in maximal diameter, 2) follicular or Hürthle cell neoplasm, 3) completion thyroidectomy after diagnosed as follicular or Hürthle cell thyroid carcinoma.

We analyzed 198 patients who underwent open thyroidectomy and 103 patients who underwent BABA endoscopic thyroidectomy for papillary thyroid microcarcinoma between January 2003 and June 2006 at Seoul National University Hospital. There were no significant differences in postoperative TG levels, hypocalcemia, or permanent vocal cord palsy.

From February 2008 to February 2012, we performed 1026 BABA robotic surgeries. Out of these, 865 patients underwent BABA robotic total thyroidectomy with central lymph node dissection for PTC. The proportion of the patients who showed less than 1ng/ml in Tg level at 3 months post-surgery was 99.4% of 392 patients who did not need RAI treatment and 63.2% of 441 patients who underwent RAI treatment. There were no significant differences in postoperative TG levels, hypocalcemia, or permanent vocal cord palsy. There were no differences also in retrieved LN.

In conclusion BABA robotic total thyroidectomy with central lymph node dissection is an effective and safe method to manage the thyroid carcinomas.

## 3D-Videoassisted Thoracic Surgery and Its Effectiveness in Lung Cancer Staging

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### Objectives:

The 2D-VATS disadvantages are: specific training, no-stereoscopic vision, discomfort of the positions, unsafety procedure as in "open", low ergonomic surgical tools. The 3D-System gives the perception of the depth maintaining a tactile feed-back, improving the coordination eye-hand, and precise spatial orientation; this made a greater precision of the surgical action, in an improvement of the learning curve and in a reduction of the operating times.

### Materials and Methods:

A double 3-CCD stereocamera, with a double personal head stereoscopic display, was employed. Besides, we have used instruments from the ergonomic sketch and devoted to the thoracic surgery, both for "open" and video-surgery, that has the same handling of the usual open instruments. From January 2008 to March 2013, 527 patients were submitted to 3D-VATS.

### Results:

Nineteen patients were not operated because of un-collapsed lung; 38 patients had benign diseases. 489 patients were submitted to 3D-VATS for malignant diseases: 23 lobectomies, 125 sublobar resections, 45 pre-open surgery assessments, 51 pre-operative mediastinal assessments, 204 malignant pleural effusions, 17 pleurectomies.

### Conclusions:

The 3D video systems have shown a best feed-back than 2D ones in terms of surgical results and of surgeon comfort. Besides, a direct contact of the surgeon is maintained with the operating field even though partly mediated by the tools, unlike what happens in the robotic surgery. Moreover 3D-VATS permitted after lung cancer staging 43/107 under-staged tumors: 40.1% were resected. This is because the accuracy in detecting lesions and the best feasibility of the surgical act by the 3D-view than other invasive staging procedures.

## Endoscopic Thyroid Surgery by the Way of Oral Vestibular Cavity: A Report of 35 Cases

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### OBJECTIVE:

To investigate the feasibility and safety of transoral-vestibule endoscopic thyroidectomy (TOVET).

### METHODS:

TOVET was performed in patients by using 3 ports. Operation time, operation blood loss, length of postoperative hospital stay, and postoperative complications were observed and analyzed.

### RESULTS:

All 35 cases were successfully completed under endoscopy without any conversion to open operation. Average operation time was 66.2 minutes, average operation blood loss was 15.8 mL, and average length of postoperative hospital stay was 5.2 days. One case showed large ecchymosis in submental skin postoperatively. And one case showed small skin laceration at the left mandibular. No postoperative wound infection, no injury to superior laryngeal nerves and recurrent laryngeal nerves, and no hypoparathyroidism were observed postoperatively. All patients were satisfied with the cosmetic effects of the operations.

### CONCLUSIONS:

TOVET is suitable for people with flat mandibular symphysis. It is easy to operate. It is safe and feasible, and possessing outstanding cosmetic effect.

## A Comparative Study of Natural Orifices Transluminal Endoscopic Surgery and Conventional Laparoscopy for Hirschsprung's Disease

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### Objective:

To explore the clinical outcomes of NOTES for Hirschsprung's Disease.

### Methods:

79 children with Hirschsprung's disease underwent laparoscopically assisted transanal endorectal pull-through, including 41 cases by the conventional laparoscopy (CL) and 38 cases by NOTES. Each manner was divided into the proctosigmoidectomy and subtotal colectomy. Their operative time (OT), estimated blood loss (EBL), blow resuscitation (BR) and postoperative complications were compared.

### Results:

There were 30 proctosigmoidectomies (OT 127.5±52.5 min, EBL 32.8±22.4ml and BR 1.4±0.6 d) and 11 subtotal colectomies (OT 199.6±47.6 min, EBL 38.6±19.2 ml and BR 1.6±0.9 d) by CL. There were 28 proctosigmoidectomies (OT 112.3±51.8 min, EBL 17.3±8.3ml and BR 1.3±0.8 d) and 10 subtotal colectomies (OT 183.0±42.4 min, EBL 23.0±7.9 ml and BR 1.6±0.7 d) by NOTES. All of procedures were successfully performed without intraoperative complications. Two approaches have similar operative time, blood loss and blow resuscitation. During a follow-up of 1 month to 4 years with 67 patients, the fecal function progressed postoperatively.

### Conclusions:

The NOTES for HD has the analogous operative outcomes comparing with CL. NOTES can further reduce the injuries of the abdominal wall and has better cosmetic results.

## Initial Experience with Robot-assisted Radical Prostatectomy for High Risk Prostate Cancer at the Medical City, Philippines

Enrique Ian S. Lorenzo, MD

As there are criticisms on the surgical treatment for disease which may be indolent, interest has shifted to what most consider as significant disease- intermediate or high risk prostate cancer. The advent of robot-assisted surgery has greatly advanced prostate surgery in terms of technique and outcomes. Combining this with the growing advocacy for pelvic lymph node dissection, the role of robotic prostatectomy for high risk prostate cancer as definitive treatment or as part of multimodality treatment is evolving.

Currently, robotic prostatectomy for high risk prostate cancer has been increasingly performed in high volume centers all over the world. In the Philippines, the first robotic surgical system arrived on June 2010. Due to the inadequacy of the national health insurance, patients have to pay out of pocket for robotic surgery hence limiting its utility to a small group in the population. Attaining a high volume has been a challenge particularly in the field of urology.

In contrast to the PSA screening effect observed in western countries, high risk, locally advanced and metastatic disease are still frequently seen in the Philippines. It is therefore a challenge to bridge this gap between difficult prostate cancer and low volume robotic surgery. A single surgeon, single institution initial experience is presented. Early outcomes of ten consecutive high risk disease based from the D'Amico classification were prospectively gathered. The feasibility, safety and acceptable results of robotic prostatectomy with pelvic lymph node dissection for high risk prostate cancer in a low volume center are described.

## Laparoscopic Radical Cystectomy: JRRMMC Technique and Initial Experience

Enrique Ian S. Lorenzo, MD

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In the Philippines, government hospitals have the challenge of providing the best care at a meagre cost. Limitations and urgent priorities need to be addressed before robotics and costly instrumentation. Our department believes that this should not limit our service. We thus offered conventional laparoscopy in this formidable procedure for bladder cancer.

Pelvic lymph node dissection for bladder cancer is important although exact extend is still controversial and actual benefit in overall survival still under study. But all would agree that radical cystectomy will not be complete without good PLND. We performed in all cases extended PLND with proximal limit at the aortic bifurcation. Cystectomy is performed utilizing basic laparoscopy instruments save for a vessel-sealing device. Pedicles are controlled by clips and dorsal vein by suture-ligation. Ileal conduit is created extra-corporeally via a Bricker technique done with conventional suturing.

To date, a total of 4 male cases have been performed. All patients had high-grade urothelial carcinoma with muscle invasion. Cysto-prostatectomy time ranged from 200-410 minutes, the latter our first case. Total operative time ranged from 365-620 minutes, the latter on the first case. Estimated blood loss ranged from 40-700cc. Pathology reports show negative surgical margins and PLND count from 11-22. Significant amount of abdominal drainage in the post-operative period was attributed to the PLND. Despite various limitations, our initial results are encouraging hence improvements are expected.

## Clinical Evaluation of Modified Laparoscopic Intrafascial Hysterectomy

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### Objective:

To explore the method and clinical application value of transvaginal intrafascial uterus morcellation by laproscopic classic intrafascial supracervical hysterectomy (CISH).

### Methods:

Retrospective analysis of 633 cases of CISH from 1998-2013, 283 cases of the observing group were treated by the modified transvaginal intrafascial uterus morcellation, 350 cases of the control group were treated by the routine transabdominal uterus morcellation.

### Results:

There is no significant difference ( $P > 0.05$ ) in the period for the surgery in observation group (91.63±21.84min) and control group (82.67±25.74min), There is significant difference ( $P < 0.05$ ) in the bleeding volume for the surgery in observation group (38.64±22.45mL) and control group (47.65±25.45mL), The third days temperature after operation has no significant difference ( $P > 0.05$ ) in observation group (37.6±0.4°C) and control group (37.5±0.3°C). Postoperative anal discharge gas time is significantly shorter in observation group than in control group ( $P < 0.001$ ). The complicated rate of Postoperative Subcutaneous emphysema in observation group (2.82%, 8/283) is significantly lower than that in observation group (9.11%, 32/350) ( $P < 0.01$ ). The rate of postoperative concurrent remnant cervical sheaths bleeding in observation group (2.47%, 7/283) is significantly lower than that in control group (7.43%, 26/350) ( $P < 0.01$ ).

### Conclusion:

To approach CISH by the modified transvaginal intra-fascial uterus morcellation has the advantage of less abdominal trauma, less bleeding volume for the surgery, recovery quicker and less complications. It is a ideal method for uterus morcellation.

## Endometriosis and Brazilian Women

### Flavio Malcher, MD

Endometriosis is an inflammatory, autoimmune, hormone dependent, chronic and progressive in nature. These features gives this disease conditions that cause great impact on the health of patients and society in general.

Changes in social patterns involving greater participation of women in the labor market, brought no doubt huge gains. The woman plays nowadays a large role in all areas of the economy, working in jobs since its participation in the construction even in political activities as head of state, see our President Dilma Rousseff .

These changes were largely favorable to their working and performance of the corporate woman, but brought significant behavioral changes. One of these changes was as motherhood. The woman, because the need for better preparation for the labor market, have increasingly postponed her desired pregnancy. This delayed pregnancy thus became closely linked to issues related to the labor market.

Beyond this fact , we also observed increased exposure of Brazilian women to sex steroids derived from other sources. The improvement of the economy favored the population's access to better food, with increasing food fertilizers using steroids in their productions and consumption. There is still a greater industrial production, which increased pollution and exposure to dioxin, a compound with strong estrogenic action .

Our country still preserves some features that seem to favor endometriosis: high sun exposure.

The improvement in diagnosis, awareness of the disease and clarification campaigns, did much to increase the number of women correctly diagnosed with endometriosis in our country.

### Endoscopic Treatment Approach on Endometriomas, Recurrence and Pregnancy Rates: A Long-Term Follow-Up

Liselotte Mettler, Prof Dr Med and Lara Maul

Department of Obstetrics and Gynecology, University Clinics of Schleswig Holstein, Campus KIEL, Germany

#### Introduction and study design

The study was designed to identify prognostic factors for surgical (laparoscopic) endometrioma enucleation, recurrence of endometriomas. Possible malignant degenerations are discussed.

The benign proliferative but not invasive disease, endometriosis , is a challenge in gynecological diagnosis and treatment. There is a great need to improve pre- and post-operative therapy since endometriosis is a common chronic disease without current complete treatment options. The current endometriosis classifications based on lesion's type and location has only a limited prognostic value in terms of clinical aspects as the recurrence of endometriomas and pain and the success rate of post-operative pregnancy rate

This is a retrospective cohort study of 2558 operated patients with benign ovarian tumors at the Dpt. Obstet, Gynec. University hospitals Kiel in Germany between 1995 and 2004, including 550 histologically verified ovarian endometriomas (21.5%). Demographic characteristics and surgical findings were collected. Postoperative outcomes of 289 first diagnosed endometrioma cases were analyzed by self-generated questionnaire. The average follow-up was 12.9 years.

#### Results

Multiple significant risk factors for recurrence were analyzed. While additional postoperative medical treatment led to higher spontaneous pregnancy rate (41.4% vs. 12.6%) and fertility rate with assisted reproduction (77.3% vs. 22.7%), orse results were shown in terms of recurrence-free rate (70.5% vs. 82.6%). Two cases of Endometriosis-associated malignancy were reported.

#### Discussion

There are many known risk factors for endometriomas and recurrence of pain such as previous surgery, adhesions, use of ovary-stimulating drugs, and advanced endometriosis stage. The impact of additional postoperative medical treatment is still controversial in the literature. Malignant degeneration is described to vary between 0.7 to 5.0%.

### Laparoscopic Techniques in Rural Western India – General Surgery, Gynecology, and Cancer

Akshay Kishore Nadkarni, MS, DNB

NADKARNI'S 21ST CENTURY HOSPITALS, VAPI, India

Large rural communities generally have at least several general surgeons, a variety of subspecialty surgeons and medical counterparts. Most of the rural setup lack state-of-the-art facilities and equipments for laparoscopic surgery. Small rural communities have also very limited human and technical resources. Surgeons are often solo practitioners with limited subspecialty support and trained staff. Their scope of practice is broader than that of their urban counterparts, and includes a large volume of patient who need laparoscopy. Access to care in small communities will be an ever-increasing problem unless something is done to reverse these trends. Most patients prefer to have their care locally, provided it is competent. Rural surgeons are needed. Where demand exists, so does opportunity.

This presentation shall throw light on the evolving techniques of laparoscopy in rural India, the problems faced by surgeons, difficult situations under which a surgeon in rural India operates and the role of multi tasking and mobile laparoscopy along with type of anaesthesia used for laparoscopy in rural India. I shall also show the statistics and types of varied surgeries that a set up like ours (21st century hospitals, Vapi and Killa Pardi) in rural India does. I shall conclude, by motivating surgeons to settle in rural places and develop laparoscopy in rural places where there is a huge need and not get biased and tempted towards the well established tension free urban operating rooms.

### Laparoscopic Surgery by Residents: A Report from a General Hospital in a Rural Area of Japan

Hiroshi Nagata, MD

The surgical education has rarely been a major topic in surgical society in Japan. The situation is now changing, however, due to marked decline of the number of general surgeons, the uneven distribution of junior trainees and introduction of minimal invasive surgery.

Each hospital is struggling to attract the limited number of would-be surgeons to its residency program, but it is challenging to present a convincing strategy to develop skillful residents in the heyday of laparoscopic surgery.

Kameda medical center, which I belong to, has been one of the most popular teaching hospitals in Japan. One of our policies in surgical residency is early exposure of trainees as primary surgeons. For example, in the past 8 years, 73% of laparoscopy-assisted right colectomy and 58% of laparoscopy-assisted sigmoidectomy were performed by residents in our hospital. We have therefore many applicants for our residency program every year.

However, we have a lot of unanswered questions: When should a resident start laparoscopic cholecystectomy? How about colectomy? Is it really an efficient training system? Is it safe to let resident perform advanced operations?

From stand point of a surgical resident, I'd like to introduce data from my facility as a basis for discussion with audience. I would appreciate it if we could find some solutions for the better educational system in the new era.

### Laparoscopic Bile Duct Resection for Congenital Dilation of the Bile Duct

Takeshi Naitoh MD FACS, Takanori Morikawa MD, Shinobu Ohnuma MD, Naoaki Sakata MD, Kei Nakagawa MD, Hiroki Hayashi MD, Takaho Okada MD, Hiroshi Yoshida MD, Fuyuhiko Motoi MD, Yu Katayose MD, Michiaki Unno MD

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Since surgery for congenital dilatation of the common bile duct requires a large abdominal laparotomy, wound-related complications often becomes a problem. Besides, since the rate of this disease is higher in young women, a cosmetic result would be a significant impact on QOL. Although laparoscopic surgery for this disease is carried out from early 1990s, it is not widely spread due to extra ordinal difficulties of its procedure. We introduced a laparoscopic procedure for this disease since September 2011, and the Robotic surgery since May 2012. We operated on six cases so far. The average age was 43 year-old. Surgical technique was as follows: cholecystectomy was first carried out, and then the upper side of bile duct was transected. The bile duct was then retracted toward ventral side, and the intra-pancreatic bile duct was dissected. The bilio-pancreatic duct junction was confirmed, and transected by ligating the bile duct. Reconstruction was performed by Roux-en-Y hepatico-jejunostomy retro-colonic route. The robotic surgery was performed in generally similar technique. The operation time was 321-min. in average in laparoscopic cases, while 498-min. in robotic surgery cases. One case of robotic surgery developed post-operative intestinal obstruction of the biliary limb. Pancreatic fistula and anastomotic leakage has not been observed. The robotic surgery is highly useful in the operation in the narrow field. On the other hand, the limitation of energy devices, high running cost, and time consumption for setting remain questionable. However, the high motion stability and the scaling effect would be a great benefit for this surgery.

### New Insights in the Pathophysiology of Ovarian Cancer and the Role of the Fallopian Tubes

Farr R. Nezhat, MD

The purpose of this talk is to provide the latest information on the pathophysiology of ovarian cancer, including the role of the fallopian tubes as well as the link between endometriosis and ovarian malignancy. Even though hereditary ovarian cancer accounts for only 10% of all epithelial ovarian cancers, BRCA 1 and 2 mutations involve predominantly high grade serous and endometrioid adenocarcinomas. Recently there has been a shift in our understanding of pelvic serous carcinomas suggesting that the site of origin may be the fallopian tube. As such, recent statements, such as the one made by the Society of Gynecologic Oncology, suggest that salpingectomy may be appropriate and feasible as a strategy for ovarian cancer risk reduction, not only in BRCA carriers but also in women at average risk of ovarian cancer, once childbearing is completed. The talk will also look at the pros and cons of elective oophorectomy at the time of hysterectomy. Current data looking at the premenopausal status and quality of life in women undergoing elective oophorectomy will be analyzed, as well as the role in ovarian cancer prevention. Furthermore, the similar features shared by endometriosis and ovarian cancer will be examined, as well as the circumstantial evidence of malignant transformation within endometriosis and the clinical implications.

### Limitations to Development of Minimal Access Surgery-The Nigerian Experience

Michael Ikechukwu Nnamonu, BMBCH, FWACS, FMCS

Head of Clinical Services, NIng Hospital, Bonny, Nigeria

Evolution of minimal access surgery is well appreciated in Nigeria. However, in this large country with a rich number of skilled surgical practitioners, comparatively slow progress has been made in the development of the technology and practice of minimal access surgery.

The objectives here are to determine the factors responsible for the limited progress in the field of minimal access surgery and to outline the steps that need to be taken to overcome the identified challenges.

Electronic literature search was conducted to source data and anecdotal information was obtained from patients, surgeons, minimal access surgery equipment marketers and hospital administrators.

Nigeria lags behind in the development of minimal access surgical services even in comparison to other developing countries. Underfunding remains a major problem. Absence of dedicated training in minimal access surgery is also a challenge. Other problems identified include low volumes of procedures done, limited numbers of fully trained personnel, none availability of the hardware and consumables, as well as continued dependence on the model of health missions for minimal access surgery.

A comprehensive plan must be developed to improve health care design and funding. Collaboration must ensue with established minimal access surgical practitioners and marketers of the equipment, to provide extensive and adequate training, for sustained development in the technology and practice of minimal access surgery in Nigeria.

### Laparoscopic Surgery: Have We Failed Our Duty in Patient Information?

Himanshu Pandey, MS FLCS

Laparoscopic surgery is today's most advanced and cosmetic surgical innovation in the present history of modern day surgery. It has revolutionized the tissue anatomy and approach towards diagnosis and treatment of almost all surgical procedures. It has become gold standard procedure for gall bladder surgery now. The advancement achieved is spreading to smaller cities as well but there are factors which often play crucial role in its complete acceptance in smaller towns. We have analyzed various factors which have prevented access to lap procedures in smaller towns in private and government hospitals and nursing homes. We have come to some conclusion as how it needs to be refocused that it becomes a brand and is accessed by patients as choice and right. We have tried to understand the various cause and effects relationship of small town surgeons with the patients and the barriers for non acceptance of laparoscopic surgery in rural population in small towns in India.

In the end we have drawn some conclusions and have come to realization that a big brother approach is still required at advance centers and hospital to teach and train our budding lap surgeons in non laparoscopic ventures as well to sustain the momentum of growth of laparoscopic procedures as per our desire and expectations.

### Laser and Photodynamic Therapy for Early Breast Cancer

Ho Yong Park, Prof Dr Med

Department of Surgery, Kyungpook National University Hospital, Daegu, Korea

The purpose of this study is to develop the laser-assisted local breast cancer treatment system using the multi-directional firing optical fiber and advanced photosensitizer nanocarrier system.

In case of the laser surgery such as treat cancer, it demands the optimal the laser fiber tip which spread uniformly a laser beam without power loss. In order to irradiate and control laser light in multi direction, we developed a bi-direction firing fiber and a bundle fiber. The developed bi-directional firing fiber with conical shape fiber tip irradiates laser light to forward and radial direction. The bundle fiber consists of several side-firing fibers which can irradiate laser light in one to several radial direction of bundle fiber. The bi-directional firing fiber make the elliptical shape and larger of the laser-induced damage zone than the forward firing fiber. The directions of laser-induced damage zone by the bundle fiber match the laser irradiation direction. We expect that the developed fibers are beneficial light delivery system for the laser-assisted cancer surgery in the human body.

Photodynamic therapy (PDT) is a noninvasive and selective treatment useful for some small and superficial tumors. PDT involves administration of a tumor-localizing photosensitizing agent and the actual therapeutic effect is triggered by colocalization of photosensitizers (PS) and laser irradiation in the malignant tissues. To employ PDT as a modality for cancer-

margin treatment after laser ablation therapy, a locally injectable nanophotosensitizer has been developed. To open the opportunity of possible clinical translation, we formulated the locally tumor-targeting nanophotosensitizer by nanoscopic physical assembly of all the FDA-approved ingredients. Animal studies demonstrate that the nanophotosensitizer shows preferential tumor accumulation by peritumoral administration and efficient tumor suppression upon laser irradiation, being useful for cancer-margin treatment by PDT.

### Strategies to Treat Bowel Endometriosis

Thiers Soares Raymundo, MD

The treatment of intestinal endometriosis in many cases require surgical intervention. Laparoscopy has brought benefits to patients regarding postoperative period, but was not able to reduce the occurrence of fistulas and abscesses after bowel resection. According to the complaint and the findings on imaging tests are suggested different surgical techniques. The "Double Circular Stapler Technique" aims to make the treatment of intestinal endometriosis adequately, but reducing morbidity.

### Starting a Robotic Program in a Developing Country: Brazilian Experience

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Irineu Rubinstein, M.D.

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#### Objective:

The diagnosis of prostate cancer has been increasing in recent years through public awareness campaigns and the advent of more accurate diagnostic tests. A Robot Assisted Radical Prostatectomy (PRRA) is gaining momentum in Urological scenario in recent years. The presentation shows the steps of the PRRA program developed at our institution.

#### Materials and Methods:

Prospective data were collected between December 2012 and December 2013 for all men undergoing PRRA procedures within the Urological department. Patient demographics, intra, peri and post-operative data were collected at a single institution, which is a tertiary referral centre for urological oncology and minimal access surgery.

#### Conclusion:

Robot-Assisted Radical Prostatectomy is a procedure that has been gaining prestige in the urological community. With the refinement of minimally invasive technique achieved in recent years the procedure is performed with extreme safety and functional and oncological results encouraging. It requires training of the entire operating room team. The learning curve is steep, involving port placement, availability of the proper instrumentation, use of the correct robotic arms, and proper patient positioning. Defined credentialing for surgeons and cost analysis studies are needed.

### Assessment of the Ovarian Reserve Before and After Laparoscopic Surgery Using Two Different Techniques for Ovarian Endometrioma

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Abstract: The effect of two different laparoscopic methods on ovarian reserve as determined by antimullerian hormone (AMH), antral follicle count (AFC) and ovarian volume, in patients with ovarian endometrioma. Randomized prospective study done in tertiary education and research hospital (Shatby Alexandria university hospital) on one hundred patients presenting with ovarian endometrioma, AMH, AFC and ovarian volumes determined before and after laparoscopic surgery (postoperative first month, three months and sixth months); for two groups (Group1)cystectomy(stripping) and (Group2) bipolar coagulation performed randomly using closed envelope. The main concern was assessment of ovarian reserve damage as determined by AMH, AFC and ovarian volume, and comparing the AMH values with AMH nomogram.

The results shows that, the decreases in AMH, AFC and ovarian volume were found for both coagulation and cystectomy, but the decrease was statistically significantly more frequent in cystectomized ovaries than in coagulated ovaries. Although this decrease AMH level still in normal percentile (25th-50th) as plotted to AMH nomogram (Nelson. AMH age nomogram).

Keywords: endometrioma, laparoscopic surgery, ovarian reserve.

### Directed Energy Surgery: The Next Great Advance in Surgery

Richard M. Satava, MD

Surgery has undergone 4 revolutions in the short span of 50 years – endoluminal, minimally invasive, robotic and image-guided surgery. The next revolution has already begun – directed energy surgery. Pioneering efforts in high-intensity focused ultrasound (HIFU), cyberknife therapy, plasma medicine and biophotonics are providing the next generation – non-invasive surgery. These new surgical technologies are being performed using new intelligent surgical devices and instruments – a combination of information controlling energy.

### Obstructive Defecatory Syndrome (ODS) Hidden Epidemics

Dinesh Shah, MBBS, MS

It is a complex and multifactorial condition, common in multiparous women characterized by the *urge to defecate but an impaired ability to expel the faecal bolus*.

There is a general reluctance to discuss rectal function as a consequence many patients do not seek medical advice, preferring to self-treat using over-the-counter medications. Because of this there is a tendency for only the more severe end of the spectrum to present to the colo-proctologist: the so-called *iceberg phenomenon*. Evacuation difficulties often arise during the 4th or 5th decade of life when progressive weakening of the supportive tissues occurs. It's a form of constipation, characterized by:

- Straining during defecation
- Excessive time spent in toilet
- Sense of incomplete rectal evacuation
- Frequent calls to defecate
- Use of digital manipulation or perineal support to defecate
- A dependency on regular laxatives or enemas
- Pelvic pressure or rectal discomfort

None of these symptoms/factors can be singled out to be pathognomonic for this problem. By establishing a relationship through the use of symptom questionnaires or stool diaries, it may be possible to define more precisely the nature of bowel dysfunction in these patients. Clinical examination frequently reveals presence of internal rectal prolapse or anterior rectocele.

It is surprising that, despite the ready accessibility of the anus and rectum to clinical examination, radiological imaging,

manometric & electrophysiological study, ODS remains a dilemma in many patients, whose cause cannot be adequately diagnosed and treated.

### Laparoscopic-Assisted Treatment for Congenital Choledochal Cyst

Qing-lin Sun

(Department of Pediatric Surgery, Childrens Hospital Affiliated to Soochow University, Suzhou)

#### Objective:

To evaluate the complete laparoscopic cyst excision and Roux-en-Y hepaticojejunostomy for choledochal cyst.

#### Methods:

A retrospective study was performed on 37 pediatric patients who underwent the complete laparoscopic cyst excision and Roux-en-Y hepaticojejunostomy from January 2008 to May 2012. The choledochal cyst was excised laparoscopically after the dilation of common bile duct/intrahepatic bile ducts and pancreatic ducts were visualized by Intraoperative cholecystography. The Roux-en-Y jejunal loop was fashioned extracorporeally by exteriorizing the jejunum through the extended umbilical incision followed by an end-to-side hepaticojejunostomy laparoscopically.

#### Results:

All patients did well during the procedure, and there was no need to convert the procedure to an open approach. The mean operating time was 3.0-4.0 hours and all of the patients could be discharged 6-8 days later, with no postoperative bile leakage, intestinal fistula, etc. Conclusions: Laparoscopic cyst excision and Roux-en-Y hepaticojejunostomy for choledochal cyst with reliable results, minimized tissue trauma, and rapid recovery would be the first choice for choledochal cyst.

### WORKSHOP: "Building a Successful Simulation Training Center: Transitioning from Why to HOW"

Robert M. Sweet, MD

Lecture will inform the participant how to build a collaborative, interdisciplinary center of excellence that meets training, research and development missions simultaneously while avoiding common pitfalls. It will go over a process by which the center will best meet its mission.

### Indication and Limitation of Laparoscope Myomectomy

Takehiko Tsuchiya, MD, PhD

The patients who wish to undergo laparoscopic myomectomy increased in number by a recent social environmental change and tendency to marry later. Therefore, in our hospital, the sizes of fibroids are becoming large and operative procedure become difficult every year. We report it about trocar distribution and handling of needle and suturing.

Ideally, the incision of uterine wall on laparoscopic myomectomy should make transverse incision according to blood vessels, and the vertical direction of the suture is required to incision line and quick and undoubtedly suture is required.

Laparoscopic myomectomy was started from 1996, and the original trocar arrangement is a diamond type and sutured by two surgeons on either side.

Arrangement of trocar was changed into the right parallel type, and suture was right and lower right part of trocar from 2009.

Transverse incision of uterine wall in every part of the suture was possible according to changing into the right parallel type.

We did examination of retrospective study of 186 cases that we performed with a diamond type for 2006-2007 years and 203 cases that we performed with the right parallel type for 2011-2012 years.

In the right parallel type, the maximum diameter of myoma nodule significantly increased and the operative time was significantly shorter as compared with the diamond type.

Even if the adaptation range of an operation was expanded and the size of maximum myoma nodule increased, it is possible to do laparoscopic myomectomy by performing suitable arrangement of trocar, and a quick and undoubtedly suture.

### Laparoscopic Surgery for Gastrointestinal Tumor in the Stomach

Akiko Umezawa, MD, Yosuke Seki, MD, Tomomi Watanabe, MD, Kazunori Kasama, MD, Yoshimochi Kurokawa, MD

#### Introduction:

Laparoscopic gastric wedge resection has been widely used for gastrointestinal tumor (GIST). However, it is sometimes controversial for specific site of gastric GIST, such as located near the esophagogastric junction (EGJ). Herein we demonstrate the feasibility of intragastric surgery for gastric GIST.

#### Operative procedure:

A 2.5cm transverse skin incision is made upper umbilicus. Laparoscopic port is made into the stomach (SU). Additional two 5mm ports are inserted into the stomach through the abdominal wall in the left upper quadrant. Appropriate saline is injected with fine needle into the submucosal layer to create safe layer for en bloc resection. The resection is performed by cautery and/or ultrasonic device laparoscopically. After en bloc resection is completed the tumor is retrieved per oral with an aid of gastroscopy. Then the defect in the gastric wall is closed by manual suturing with 3-0 absorbable thread. No drainage tube is left.

#### Results:

We have done 30 such procedures in our hospital. The median age of the patients is 44, and the median diameter of the tumor is 40mm. The procedure took average of 180mins and done with average of 22g blood loss. All the tumors were resected without remnant.

#### Conclusion:

Our procedure is feasible for gastric GIST located near EGJ having only to keep in mind that not to injure the tumor. This procedure can help patients to avoid extended gastrectomy.

### Laparoscopic Approach with Modified Hasson Technical, Decreasing the Risk of Injury ("Cali Technical"), 1000 Cases

Juan Carlos Valencia S., MD

Laparoscopy is the most common technique of Minimally Invasive Surgery nowadays. Visualisation of the pelvic and abdominal organs with a laparoscope is the first step. Although usually safe, a small minority of patients experience life-threatening complications, including injuries to the blood vessels (0.9 per 1000 procedures) and the bowel (1.8 per 1000 procedures).

Many different ways to make the initial approach, have been described; however all of them can be summarized in two techniques: closed technique, using a Veres needle or direct entry, in which the first trocar is inserted into the cavity before blowing gas. The open technique involves the peritoneal being cut down, followed by the insertion of a blunt trocar under direct visualisation, then gas insufflation and finally insertion of the laparoscope. Until 2008, according to the revisions made by The Cochrane Collaboration, had no differences in complications between the two techniques. However, in the last revision made in 2012, significant benefits were noted with the use of a direct-entry technique when compared to the Veress Needle. The use of the Veress Needle was associated with an increased incidence of failed entry, extraperitoneal insufflation and omental injury; direct-trocar entry is therefore a safer closed-entry technique. One of the most used open techniques,

has been described by Dr Harrith M. Hasson in 1971. In the Hasson technique, an approach is made by an incision that varies between 1 and 2.5cm near the navel, affecting the skin and through the separation of the different layers, reaching the abdominal cavity to separate the edges of the wound and have a direct vision of it safely then inserting the first trocar. However the safety of this technique, the time taken for dissection is much higher than in other techniques, also the amount of surgical instruments needed.

Our technique, called Hasson Technique Modified or "Tecnica de Cali", aims to preserve the virtues of Dr. Hasson technique, simplifying some steps and the number of instruments used, including a new element, which consists of elevation abdominal wall.

In all cases, a longitudinal incision of 10 to 12 millimeters is done entirely by the umbilicus, which is made on its two side edges with Kelly dissecting forceps and then carefully dissected into the cavity with a third Kelly clamp. After viewing the abdominal cavity is performed in U suture with needle and thread 35 millimeters polyglactin 1. This suture remains lax and served at the end of the procedure to close definitively the fascia. The next step is the introduction into the hole created, a separator or Senn Miller Langenbeck. With this separator abdominal wall is elevated between 5-7 centimeters, separating it completely from the viscera and potentially decreasing the likelihood of injury.

A series of 1000 cases with this technique is presented, including approach to cholecystectomy, appendectomy, exploratory laparoscopy, operations for repair of hernias and oncological resections. No vascular or bowel injury occurred. Extraperitoneal insufflation happened in one case; Trocar site bleeding in seven cases; Trocar site infection in twenty case, related subgroup of appendectomies; minor injuries in the mesentery occurred in 5 patients.

In conclusion, the "Cali Technique", It is a safe, fast and economical method of approach to laparoscopy without major complications and minor complications less than expected in the current literature

### The Evolution of Laparoscopic Liver Resection

Go Wakabayashi, MD, PhD, FACS

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#### Background:

The introduction of laparoscopic liver resection has a great impact on liver surgery because it has changed the basic principle of liver surgery. The liver is surrounded by the rib cage. Therefore, the big incision was needed even for mobilization of the liver. Laparoscopic surgery gives you better exposure with magnified view even behind the liver and pneumoperitoneal pressure reduces bleeding from the vein and the cut surface.

#### Methods & Results:

We started laparoscopy-assisted donor hepatectomy since 2007 and accumulated 39 cases by the end of 2012. Left side grafts were 14, and right lobe grafts were 25 cases. Blood loss, operative time, and morbidity rate are good metrics for the quality of donor surgery. Median blood loss was 195ml for the left and 268ml for the right. Median operative time was 385min for the left and 380min for the right. We experienced bile leakage events (Clavien-Dindo, IIIa) in two left side graft donors (5.1%), which needed to be drained with biliary stentings. We found these data were equivalent to open donor hepatectomy with better satisfaction in donors. Then, we started pure laparoscopic donor hepatectomy since 2013 and experienced 3 left side grafts and 3 right graft donor hepatectomy. All 6 donor hepatectomy went well with less blood loss and better cosmesis.

**Conclusions:** Pure laparoscopic donor hepatectomy can be performed safely with better exposure with magnified view and less blood loss with pneumoperitoneal pressure. The liver resection is evolving from open to hybrid, and from hybrid to pure.

### Progress of Gynecologic Laparoscopy in Mainland China

### Huiqun Wang, Xianbo Fu, Xiaowei Zhang, Heqiong Li, Xiaoming Shao, Yuying Yang

Chinese Journal of Minimally Invasive Surgery (CJMIS)

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In Mainland China, although technology and equipment vary in different area hospitals, laparoscopic surgery has been used widely and developed rapidly in gynecology since 1990's. With advanced instrument, technique and concept, many instruments have been innovated and surgical procedure has been improved based on China clinical practice and Chinese patients' characteristic. Now, laparoscopic surgery is the standard surgical procedure for adnexectomy, ovariocystectomy, tubal pregnancy surgery, which mastered by all gynecologist nowadays. The number of laparoscopic uterine surgery paper have increased from 370 in 2004 to 1797 in 2012, almost 4.8 fold increase in 10 years. We summarize the progress of laparoscopic myomectomy, laparoscopic hysterectomy, and radical laparoscopic hysterectomy in the last 5 years. Radical laparoscopic hysterectomy is very complex and more risky, however it can be performed in many major hospitals, even in several municipal hospitals in China now. In the last 5 years, nearly 200 papers reported over 9000 cases of radical laparoscopic hysterectomy in Mainland China with a largest sample of 641 cases. Recently surgeons focus on pelvic autonomic nerve preservation and peritoneal vaginoplasty in order to improving bladder function and living quality. Three-dimensional laparoscopic surgery and robot assisted laparoscopic surgery are gradually used in major hospitals.

### Improve the Outcomes for Six Million Surgical Patients – ORReady

Paul Alan Wetter, MD

Over Two Hundred and Thirty Million Operations are performed worldwide each year. Experts estimate that by following a series of safety guidelines, 2-3 % (roughly Six Million surgical patients around the world) could have better surgical outcomes each year. While this may help only a small number of patients in a small local hospital, cumulatively it has the potential of being beneficial to an enormous number of patients worldwide. Research has confirmed that multiple industries benefit by applying the safety steps presented here. When applied in the operating room, these same steps can and do reduce complication rates and improve outcomes for our patients. Top centers, leading surgeons, nurses and OR teams in multiple specialties have adopted various forms of these steps, and have been reducing error rates by 40% and cutting death rates in half. Regrettably, many hospitals and surgeons worldwide have not yet instituted these good-outcome-producing principles. Our goal is to encourage worldwide use of the *ORReady* Steps in all hospitals within Six Years. Once followed, this could improve the outcomes for 6,000,000 patients worldwide annually.

### Laparoscopic Surgery for Pancreatic Diseases in Children

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#### Objective:

To evaluate efficacy of laparoscopy in the treatment of pediatric pancreatic diseases.

#### Methods:

Nine children with pancreatic diseases underwent laparoscopy surgery between October 2005 and December 2010. The procedures included internal drainage of pancreatic pseudocyst(n=1), excision of islet cell tumor(n=1), distal pancreatectomy for diffuse islet cell hyperplasia( n=2)and solid-pseudopapillary tumor of pancreas( n=3), lateral pancreaticojejunostomy for pancreatic duct dilatation(n=2).

**Results:**

All patients recovered uneventfully. Only one patient was converted to open surgery. Operative time ranged from 140 to 210 minutes. No blood transfusion was required. No duodenal injury was encountered. One patient required redo open surgery for bile leak and recovered. Postoperative hospital stay was 3-20 days. Follow-up period ranged from 3 to 24 months. No complication was observed.

**Conclusions:**

Laparoscopic surgery for pancreatic diseases in children is safe, feasible and effective.

**Human Menses and Surgical Management of Endometriosis**

Kiyohiko Yamada, MD, PhD

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The modern human female acquired regular menstrual cycles since 18th centuries, quite recently in the million years' human history since *Australopithecus aphaensis*. The menses are consequences of failure to conceive after ovulation, occur not only within the uterine cavity, but also in the peritoneal cavity, that is, the endometriosis. Thus the medical treatment of the endometriosis has been concentrated to inhibit ovulation during the reproductive age; the GnRH, pseudo-pregnancy agents such as gestagens and birth control pills.

To manage the endometriosis surgically, one should firstly familiar with the laparoscopic removal of the deep pelvic endometriosis for relieving pain symptoms. Secondly, complicated pathological conditions such as chocolate cysts, fibroids and adenomyosis should be successfully removed while preserving fertility for those hoping childbearings. Furthermore, some patients need supracervical or total hysterectomy and/or salpingo-oophorectomy. Because the endometriosis usually makes severe adhesions in the pelvic cavity, meticulous adhesiolysis is required in any conditions of the endometriosis. To make it possible, the two-dimensional detaching technique to the three-dimensional adherent organ conglomerate is presented.

**Introduction of the First Single Site Laparoscopic Surgery in the Philippines at the Medical City Hospital**

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**Background:**

Innovations in various laparoscopic approaches have allowed significant advances in benign gynecological cases. The objective was to introduce single site surgical techniques to colleagues, residents and the facility in the Philippines. The technique provides alternative surgical options to treat persistent pelvic pain from severe adenomyosis, treatment of chronic endometriosis and control dense pelvic adhesions secondary to pelvic inflammatory disease. These were the complaints and problems of the first three patients that underwent single site laparoscopic surgery in the Philippines at the Medical City Hospital.

**Methods:**

The Department of Obstetrics and Gynecology of The Medical City Hospital prepared several patients for surgical and medical consultation on various gynecological problems prior to arrival. Appropriate surgical candidates were prepared for single site laparoscopic surgery using a trans-umbilical approach. The three cases presented report the ability to address three common complex procedures encountered in practice using the approach.

**Results:**

The use of single site surgery allowed the surgeon to visualize anatomical landmarks more readily, to facilitate better anatomical access, to shorten patient hospitalization and to decrease recovery time. The patients stayed overnight for observation and discharged to home the following day. Patients returned to work in less than two weeks and had minimal scars with the umbilical incision of less than 2 cm in length. The surgeons were introduced to the concept of reduced site laparoscopy with an exchange of knowledge, expertise and open communication.

**Conclusions:**

Through extensive pre-operative preparation, discussion and communication the logistics to bring new knowledge and exchange medical innovations can be accomplished.

**Transumbilical LESS Laparoscopic Common Bile Duct Exploration**

Linhai Yu, MD

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(201600)To report the initial clinical experience with transumbilical plus one subxiphoid port laparoscopic common bile duct exploration (CBD).

**Purpose:**

To report the initial clinical experience with transumbilical plus one subxiphoid port laparoscopic common bile duct exploration (CBD).

To report the initial clinical experience with transumbilical plus one subxiphoid port laparoscopic common bile duct exploration (CBD).

**Methods:**

The medical records of 76 patients who underwent transumbilical plus one subxiphoid port laparoscopic CBD exploration between March 2010 and February 2013 were reviewed retrospectively. The basic demographic data, clinicopathologic and surgical outcomes were assessed.

**Results:**

The median diameters of the CBDs was 9.9 mm, the number of stones ranged from 1 to 12 and the diameter of stones ranged from 1 to 20 mm. The routine procedures including cholecystectomy, choledochoscope and intraoperative cholangiography guidance were performed. The CBD stones were removed successfully without severe bleeding. There were 5 cases bile leakage after exploration and no perioperative deaths. Surgery was performed in all cases through the transumbilical and subxiphoid incisions. Only one patients were converted to open surgery due to Mirizzi syndrome IV. The mean operating time was 120.3 minutes and the mean hospital day was 15.3 days. All patients were satisfied with abdominal cosmetic results.

**Conclusions:**

Transumbilical plus one subxiphoid port laparoscopic surgery successfully applied to CBD exploration as an alternative to the conventional laparoscopic approach. The method we developed has overcome both external instrument interference around the umbilicus and the angle limitations. It is relatively simpler than a typical transumbilical endoscopic surgery (TUES) and also offers a better cosmesis.

**The Clinical Application of Hybrid Laparoscopic Vaginoplasty**

Prof. Juanjuan Zhang, Prof. Guangnan Luo

Center of minimally invasive gynecology, Luohu hospital attached to shenzhen university, China, 518001

**To introduce the operative method of "Hybrid" Laparoscopic vaginoplasty(Luohu type II) for congenital**

**absence of vagina syndrome.**

390 cases with the laparoscopic peritoneal vaginoplasty were successfully completed. Only 1 case transformed to open operations. Operation time was 40 min~120 min (mean, (55±15) min), the mean intra operative hemorrhage was (20±10) ml. No severe complications. The average vaginal length at 21 days to 28 days after operation was 9.5 cm (range 8 cm-12 cm).

Luohu type II laparoscopic vaginoplasty with peritoneum has the advantages of simplicity, minimal wound, less blood loss during operation, without bladder and rectum injuries, not damaging vulvar morphology and fast postoperative recovery, the artificial vagina is like to normal vagina in terms of physiology and anatomy; at present, Luohu type II laparoscopic vaginoplasty with peritoneum is the optimal vaginoplasty, which is worthy to be popularized.

**The advantages and disadvantages of Hybrid laparoscopic techniques****Advantages :**

1. The lack of complications and contraindications due to pneumoperitoneum
2. The use of fingers to feel fibroids.
3. Simple open surgical techniques can be used.
4. Conventional instruments can be used.

**Disadvantage:**

Operating system field is not wild enough

**The Brief Introduction of Peking University Third Hospital and Its Minimally Invasive Surgery Progress**

Xiaowei Zhang, MD, PhD

Peking University Third Hospital  
Chinese Journal of Minimally Invasive Surgery

There are 1425 beds in Peking University Third Hospital now. The daily outpatients may reach about 15,000. The annual surgery operations are more than 40,000.

There are 140 beds for general surgery. Since 1991, the first laparoscopic cholecystectomy has been carried out in the hospital. The country's first laparoscopic radical resection of rectal carcinoma completed in the hospital in 1994. Minimally invasive surgery cases currently reach about 1200 per year. Laparoscopic surgeries include: left or right hemihepatectomy, the whole and partial splenectomy, radical gastrectomy for gastric cancer, radical resection of colorectal cancer, endoscopic thyroidectomy, hernia repair, distal pancreatectomy, radical resection of hilar cholangiocarcinoma, choledochojunostomy.

There are 51 beds for gynecology. Laparoscopic techniques have been applied to endometriosis diagnosis since 1991. Currently the annual gynecological laparoscopic surgery cases are 1700. Laparoscopic surgeries include: fertility-preserving radical hysterectomy early-stage cervical cancer, nerve-sparing radical hysterectomy, comprehensive staging operation for early ovarian cancer under laparoscope, cytoreduction for advanced ovarian cancer, diagnosis and treatment of complicated deep infiltrated endometriosis, highuterosacral ligament suspension, feticide by radiofrequency ablation, umbilical cord ligation, TTTS laser photocoagulation of communicating vessels.

There are 95 beds for Urology. The annual surgeries are 2200. The laparoscopic surgery has been carried out since 1998. Currently the laparoscopic surgeries include: laparoscopic decortication, laparoscopic adrenalectomy, laparoscopic radical cystectomy, orthotopic neobladder construction, laparoscopic nerve-sparing radical prostatectomy. 100 cases of kidney transplantation can be annually completed, which is restrained by the kidney donation number.