Expose yourself to some of the most minimal minds around.

No matter what your specialty, as a member of the Society of Laparoendoscopic Surgeons (SLS) you’ll benefit from our unique multidisciplinary perspective on the universe of minimally invasive surgery.

From massively-informative annual meetings showcasing the best minds and latest advancements across the endo horizon, to complimentary practice-building presence in our online Find A Doctor/Member Directory, to our highly regarded JSLS and Laparoscopy Today publications and CME programs – SLS members are exposed to a wider range of ideas and richer cross-reference of experiential knowledge than can be obtained through participation in specialty-based organizations alone.

To join or learn more about specific benefits, please visit www.sls.org/members or call 800.446.2659 today. And start getting the macro view on minimal.
Society of Laparoendoscopic Surgeons

Innovations of the Year

LigaSure®

Vessel sealing instrument

Valleylab is a proud recipient of the 2004 SLS Innovations of the Year for the LigaSure™ V 5 mm sealer/divider.
TABLE OF CONTENTS

FEATURES

8 Excerpt From Prevention and Management, 2nd Edition
Monitoring Devices and Anesthesia for Laparoscopic Surgery
W. Bosseau Murray, MB, ChB, MD

13 Hysterectomy, the Trend Towards Laparoscopic and Laparoscopic-Assisted Techniques
Farr Nezhat, MD
Jyoti Yadav, MD

16 Excerpt From Prevention and Management, 2nd Edition
Safe Use of Electrosurgical Devices During Minimally Invasive Surgery
C. Randle Voyles, MD, MS
Robert D. Tucker, PhD, MD

21 The Emergence of Flexible Endoscopy as Therapy
William O. Richards, MD
Alfonso Torquati, MD
Nik Sekhar, MD
Yassar Youssef, MD

DEPARTMENTS

5 President’s Corner

25 Products for the Laparoscopic Surgeon

31 The Laparoscopy Web

32 Calendar of Events

CONFERENCES

28 2nd AsianAmerican MultiSpecialty Congress of Laparoscopy and Minimally Invasive Surgery
A Unique Exchange of Culture and Education
Honolulu, Hawaii, February 2006

4 15th International Congress and Endo Expo 2006
The Laparoscopy and Minimally Invasive Surgery Event of the Year
Boston, Mass, September 2006

ABOUT THE COVER

Viking System’s EndoSite 3Di Digital Vision System being utilized by Dr. Francesco Corcione, Head of Surgery at Monaldi Hospital in Naples, Italy along with two hospital residents in the removal of a malignant tumor. The surgeons reported that the patient had undergone a rare surgery for a stomach ulcer more than ten years ago, and cutting around those related adhesions to remove a malignant tumor made the gastrectomy extremely difficult. (continued on page 25)
LAPAROSCOPY TODAY
Paul Alan Wetter, MD
Executive Editor
Miami, Florida
Janice Gisele Muller
Administrator of Publications
Linda Collier
Administrator of Operations
Janis Chinnock Wetter
Operations Officer
Ann Conzi Morcos
Copy Editor
Flor Tilden
Director of Membership
Lauren Frede
Administrative Assistant
Connie Cantillo
Executive Assistant

SLS BOARD OF DIRECTORS
Camran Nezhat, MD
President
Palo Alto, California
Raymond J. Lanzafame, MD, MBA
Vice President
Rochester, New York
Harrith M. Hasson, MD
Secretary-Treasurer
Albuquerque, New Mexico
Elspeth M. McDougall, MD
Immediate Past President
Orange, California
Ronald Fieldstone, Esq.
Coral Gables, Florida
Alejandro Gandasas, MD
Baltimore, Maryland
Michael S. Kavic, MD
Youngstown, Ohio
William E. Kelley, Jr, MD
Richmond, Virginia
Charles H. Koh, MD
Milwaukee, Wisconsin
Carl J. Levinson, MD
Menlo Park, California
Richard M. Satava, MD
Seattle, Washington
Gustavo Stringel, MD
Larchmont, New York
Linda Stockley, MBA
Washington DC
Paul Alan Wetter, MD
Chairman
Miami, Florida

SLS MISSION STATEMENT
The Society of Laparoendoscopic Surgeons (SLS) is a non-profit, multidisciplinary and multispecialty educational organization established to provide an open forum for surgeons and other health professionals interested in laparoscopic, endoscopic and minimally invasive surgery.

SLS endeavors to improve patient care and promote the highest standards of practice through education, training, and information distribution. SLS provides a forum for the introduction, discussion and dissemination of new and established ideas, techniques and therapies in minimal access surgery.

A fundamental goal of SLS is ensuring that its members have access to the newest ideas and approaches, as rapidly as possible. SLS makes information available from national and international experts through its publications, videos, conferences, and other electronic media.

LAPAROSCOPY TODAY (ISSN 1553-7080) is published twice per year by the Society of Laparoendoscopic Surgeons, 7330 SW 62nd Place, Suite 410, Miami, FL 33143-4825, USA. It serves as a forum for the exchange of information and ideas among professionals concerned with minimally invasive surgery. The submission of articles, letters to the editor, news about SLS members, and other items of interest to Laparoscopy Today readers is encouraged.

Opinions expressed by authors and advertisers contributing to Laparoscopy Today are solely those of the authors and advertisers and do not necessarily reflect the opinions of the Society of Laparoendoscopic Surgeons.

Postmaster: Send address changes to SLS, 7330 SW 62nd Place, Suite 410, Miami, FL 33143-4825, USA.

Subscription rates: Individuals in the United States, $49; Individuals outside the United States and Institutions, $75.

Reprints: Orders of over 100 copies should be addressed to Heather Edwards, Reprint Sales Specialist, Cadmus Professional Communications, 940 Elkridge Landing Road, Linthicum, MD 21090, USA. Telephone: 410 691 6214, Fax: 410 684 2788, E-mail: EdwardsH@cadmus.com

GUIDELINES FOR LAPAROSCOPY CONTRIBUTORS
Submit articles, case studies, review articles, product reviews, news about minimally invasive surgery, and letters to the editor as an email message or attachment. Materials may also be submitted on 3 1/2 inch diskettes, zip disks, or CDs.

All submissions should include the telephone number, fax number, and e-mail address of the corresponding author. For manuscripts with a single author, a brief biographical sketch and a picture of the author should also be submitted. For manuscripts with multiple authors, please include each author's affiliation.

All material should be prepared in accordance with the American Medical Association Manual of Style with references listed in citation-sequence format. Average article length is 1000 words.

Images may not be embedded in manuscripts. To inquire about specifications for artwork submissions, please contact SLS.

All material is subject to copyediting.

Send materials and editorial inquiries to J. Gisele Muller, Laparoscopy Today, Society of Laparoendoscopic Surgeons, 7330 SW 62nd Place, Suite 410, Miami, FL 33143, USA. Telephone: 305 665 9959, Fax: 305 667 4123, E-mail: Gisele@SLS.org

©Copyright 2005 by SLS. For more information about the Society of Laparoendoscopic Surgeons, please visit our website at www.Laparoscopy.org or www.SLS.org.
FIFTEENTH INTERNATIONAL CONGRESS & ENDO EXPO
SLS ANNUAL MEETING / SEPTEMBER 6TH - 9TH, 2006

FOR MORE INFORMATION TO PARTICIPATE IN THIS CONGRESS AND PRESENTER CONTACT:
WWW.SLS.ORG

Boston
2006
CALL FOR ABSTRACTS

THE LAPAROSCOPY & MINIMALLY INVASIVE SURGERY EVENT OF THE YEAR
THE WESTIN HOTEL COPELEY PLACE
BOSTON, MASS, USA

THE SOCIETY OF LAPAROSCOPY SURGONS
Despite being a relative newcomer to surgery, videolaparoscopy, also known as operative or therapeutic laparoscopy, has ignited a revolution in the surgical approach where it has been utilized for virtually every surgically addressed pathological entity. Videolaparoscopic surgery has the predominant means of performing many common surgical procedures. Operative laparoscopy has largely prevailed over the open approach including more than 95% of cholecystectomies, 90% of fundoplications, 70% of ectopic pregnancies, and 50% of benign ovarian cysts. In addition, this minimally invasive approach has prevailed over more invasive open surgical resections in a diverse number of benign and malignant conditions. For example, gastric cancer can be treated with resection or intragastric surgery if diagnosed in its early stages. Videolaparoscopy affords the benefit of a less invasive and less morbid approach for early diagnosis of gastric cancer, ie, “stage the patient in an attempt to spare the patient.” Similarly, patients with biliary tract and liver malignancies currently benefit from the use of staging laparoscopy for the identification of unresectable disease. Colon resection, cystectomy and bladder reconstruction, adrenalectomy, and treatment of pancreatic abnormalities are now all approached via operative laparoscopy. The use of laparoscopy for radical hysterectomy, prostatectomy, and pelvic and paraaortic lymphadenectomy is now prevalent.

Morbid obesity, once considered a contraindication for laparoscopy, has now yielded to the clear advantages that laparoscopy presents. In one of the few randomized, controlled trials comparing open and laparoscopic approaches, patients undergoing gastric bypass laparoscopically had significantly fewer complications and a shorter length of stay than those patients who had open gastric bypass. In my opinion, laparoscopic surgery should be the procedure of choice for pelvic and abdominal pathologies in obese and morbidly obese patients. In my experience, it is amazing how well these patients do when managed laparoscopically.


Laparoscopy offers better visualization and exposure, therefore, easier identification of anatomical relations. The superiority of laparoscopic surgery extends to several other parameters: reduced perioperative stress, diminished intraoperative and postoperative complications, fewer adhesion formations, lower cost, shorter convalescence period, and improved quality of life. The incisions provide better cosmesis. Surgeons are no longer crouching over while operating with their hands inside the thoracic, abdominal, and pelvic spaces; rather they are watching monitors and working in an enhanced...
and magnified operating field. More striking, as the surgeon benefits, is the patient’s tremendous favorable results.

Open surgery, through a large incision, is associated with considerable tissue injury leading to a potentially harmful stress response. Cardiopulmonary and renal complications are reduced during laparoscopic surgery. Intraoperative complications are significantly lessened with laparoscopic surgery as this tool provides better visualization through significant magnification of the operative field and better illumination. Pneumoperitoneum provides a clearer view of the anatomy because intraoperative bleeding from microvessels is lessened due to increased intraabdominal pressure, minimizing the need for blood transfusion. Postoperatively, the smaller incisions of laparoscopic procedures decrease the rate of wound seromas, infections, hematomas, and ileus with less pain. With early ambulation, the risk of thromboembolic events is decreased.

The cost of hospitalization could be significantly reduced following laparoscopic surgery, as the hospital stay is markedly shorter. Pain is significantly lessened, and recovery is faster. Videolaparoscopic surgery enables rapid return to normal daily functions, and consequently, better quality of life. More importantly, laparoscopic surgery, when properly executed, is associated with better long-term results than is laparotomy as exemplified by less adhesion formation that translates to less pain, lower risk of bowel obstruction, as well as higher pregnancy rates for women of reproductive age.

In the future, operative laparoscopy will not be limited to abdominal, chest, skull, and endoluminal surgery. I believe that wherever there is a cavity in the body, or a cavity can be created, endoscopic surgery is indicated, and most probably, preferable. Enhanced performance skills and novel instrumentations will lead us in further advancements in endoluminal surgery. This combined with endoscopy will enable the treatment of different diseases, such as gastrointestinal, genitourinary, or vascular disorders, limiting the need for incisions and providing access solely through the natural orifices of the body.

It is important to emphasize that operative laparoscopy remains technically challenging. The steep learning curve, demanding skill, availability of proper instrumentation, and experience of the surgeon all remain major limiting factors for operative laparoscopy. In turn, these limitations are precisely where the opportunities lie for innovative surgeons, engineers, and entrepreneurs to make their contributions. Novel technologies, such as telerobotics, can enable surgeons to reach new frontiers. Surgical simulators will help pave the way for more efficient surgical training. Advancement in equipment should be directed toward the development and invention of safer, faster, and easier to use cost-effective devices. For example, we would benefit from flexible devices that provide superior imaging that at the same time allow tactile feedback. Such instruments would greatly improve the current limitations of maneuverability in some laparoendoscopic tasks and together with more sophisticated thermo-chemical, nanotechnology, and physical ablation devices may ultimately render surgery truly noninvasive. Such innovations would allow us to endoscopically address even the most emergent surgical conditions like acute hemorrhage.

The challenge remains not only in the instrumentation, but also the teaching methods for laparoscopic surgery to address the learning curve. We are already using computer-based virtual reality simulators to aid the training process and proficiency of laparoscopic techniques. We certainly could benefit from borrowing simulation techniques from other fields such as aeronautics as well as combine advanced computer technologies, telecommunications, and virtual reality to introduce state-of-the-art laparoscopy...
teaching aids. Further, we need to improve how to measure surgical competency. Objective measures of surgical skill in laparoscopy are yet to be devised, and specific benchmarks for minimum surgical competency are still not set. Successful operative outcome correlates with a flattened learning curve, and we should precisely define the level of operative efficiency to be achieved by all newcomers to the field. Once the quality of surgical skill is defined, we will be able to ascertain the effectiveness of endoscopic surgery in respect to clinical outcome, patient satisfaction, and cost by performing multi-center, randomized trials. I strongly believe that the results of such studies will render many open surgeries obsolete.

Knowledge enhancement and its application is a time-dependent process that always leads to a change in existing paradigms and unthinkable innovations. At the beginning of the last millennium, a relatively unknown man by the name of Ibn al-Haytham, in the town of Basra, resolved the mystery of vision through simple empirical observations by determining that light originated outside the eye and reflected into it. His discovery of this visual dynamic led him to develop the “camera obscura,” a device that transformed many aspects of today’s knowledge and ultimately paved the road to tele- and robotic vision, enabling the invention and evolution of videolaparoscopic surgery almost 1000 years later. As video-assisted endoscopic surgery transformed operative laparoscopy from a “one man band” to an “orchestra,” the technological revolution has begun and will continue to run to its final course of eliminating the need for open surgery. In other words, almost all the surgeries (not only a small fraction like today) will be performed on images on TV screens! No more surgeon’s hands in the body cavities! It is only a matter of TIME.


Address reprint requests to: Camran R. Nezhat, MD, 900 Welch Rd, Ste 403, Palo Alto, CA 94304, USA. Tel: 650 327 8778, Fax: 650 327 2794, E-mail: camran@nezhat.com

Camran Nezhat, MD, is Clinical Professor of Gynecology and Obstetrics and Clinical Professor of Surgery at Stanford University Medical School, Stanford University, Director of the Center for Special Minimally Invasive Surgery, and President of the Society of Laparoendoscopic Surgeons. Dr Nezhat pioneered the technique of operating endoscopically directly off the video monitor (videolaparoscopy) which revolutionized modern day endoscopic surgery and has performed many procedures laparoscopically for the first time.

Hernias as a Source of Abdominal Pain: A Matter of Concern to General Surgeons, Gynecologists, and Urologists • Kavic MS 2005;9(3):249-251. Hernias may present in diverse and subtle ways. It is important that all surgeons who explore the abdominal and pelvic cavities be aware of the many possible presentations of hernias and the significance of that symptomatology.

JOURNAL WATCH: JSLS

Robotics in Reproductive Medicine • Dharia et al 2005;84:1-11. In this modern trends article, Drs Dharia and Falcone review the history of robotics in surgery and detail the roles (including training, telemonitoring, and telepresence) of these complex machines in gynecology and its subspecialties. Several types of robots and their current applications in gynecology are discussed.

JOURNAL WATCH: Fertil Steril
This chapter will emphasize the differences in monitors required and anesthesia techniques used (compared with those of open abdominal surgery), based on the physiological challenges presented by laparoscopic surgery.

**CHOICE OF ANESTHETIC TECHNIQUE**

For laparoscopic surgery, 3 types of anesthesia are available: local, regional, and general anesthesia.

Local anesthesia involves infiltrating the surgical sites with a local anesthetic agent (bupivacaine, lidocaine, and others) to enable a pain-free incision. The abdominal cavity is not anesthetized, and the surgeon needs to minimize manipulation and pneumoperitoneum pressure to avoid patient discomfort. Intravenous agents, such as narcotics (fentanyl and morphine) and sedatives (typically midazolam), can be used for patient comfort.

Regional anesthesia involves injecting a local anesthetic near the spinal cord (epidural space) or the cauda equina (lumbar subarachnoid space.) By manipulation of the amount of local anesthetic and patient positioning, the height of the block can be varied. Typically, the block needs to extend to a thoracic level (T4 or nipple level) for laparoscopic surgery.

During local and regional anesthesia, intravenous agents may be used to keep the patient calm and comfortable: this is called monitored anesthesia care (MAC) or local standby (LOSTBY.) It is useful to be aware that laparoscopic surgery can be performed with the patient under local or regional anesthesia. For instance, a patient with a recent lung transplant (or pneumonia or lung abscess) may need a laparoscopic appendectomy.

The vast majority of laparoscopic surgeries are performed with the patient under general anesthesia. The classical triad of general anesthesia was originally described as unconsciousness, analgesia, and muscle relaxation. Further goals include lack of awareness (lack of patient remembering events during surgery), and attenuation of sympathetic as well as parasympathetic nervous system hyperreactivity.

**CHOICE OF MONITORS**

The monitors used by anesthesiologists for laparoscopic surgery are similar to the monitors used for any surgery and anesthesia. However, the implications of monitor variations, and the interpretation of such changes are often different during laparoscopic surgery.

The American Society of Anesthesiologists (ASA) has developed standards for monitoring of a patient who is under any form of anesthesia: local, regional, or general anesthesia. These standards include:

1. a vigilant anesthesiologist. This is the most important monitor;
2. monitors of a patient's ventilation, oxygenation, circulation, and temperature;
3. automated noninvasive blood pressure monitor (NIBP);
4. end-tidal carbon dioxide analyzer (capnograph); and
5. a temperature probe (esophageal or skin.)

Due to the many erroneous measurements and false alarms caused by electrical cautery (diathermy) and movement, continued observation of the patient's skin color is advisable.

The required monitors of anesthesia machine function include an analyzer of delivered gaseous inspired oxygen concentration and a ventilator-disconnect alarm. Most manufacturers add several machine-specific monitors of anesthesia machine function.

**Capnography**

Laparoscopic surgery necessitates a special understanding of the interaction of physiology and the monitors. For instance, the capnograph may be the earliest of the standard 5 monitors to detect a venous gas embolism. Due to the obstruction, the gas embolism occludes pulmonary arterial blood flow to a number of alveolar-capillary lung units, leading to the development of alveolar (parallel) dead space. (Physiological [total] dead space consists of the anatomical [serial] dead space [eg, trachea, nonperfused conducting airways] and the alveolar [parallel] dead space [poorly or nonperfused alveoli].) The specific alveolar units are not perfused and therefore do not receive carbon dioxide. During exhalation, these physiological dead-space alveolar units “dilute” the carbon dioxide exiting from normally perfused alveoli, leading to a decrease in end-tidal carbon dioxide tension (and an increase in the arterial to end-tidal carbon dioxide gradient.) A biphasic response (first increased expired carbon dioxide followed by decreased concentration) has been described.

However, the brief increase may not be present or go unnoticed. Prompt therapy of a gas embolism is necessary (Table 1).

The capnograph can also give a false, low reading when high inspiratory ventilation pressures are required. The change from spontaneous to controlled ventilation leads to a change in the distribution of ventilation and perfusion (Va/Q ratio) within the lung: more ventilation goes to the upper lung with controlled ventilation. The upper lung regions have less perfusion and therefore are part of West lung zone I (high Va/Q ratio). The result is an increase in the total physiological (anatomic and alveolar) dead space.

---

A **Model for Validation of Simulation Based Medical/Surgical Training**

<table>
<thead>
<tr>
<th>Team Member</th>
<th>Responsibilities</th>
</tr>
</thead>
</table>
| **Anesthesiologist** | Diagnose and announce critical event  
|                   | Administer 100% oxygen (switch off air or nitrous oxide)  
|                   | Switch off volatile agent  
|                   | Support ventilation  
|                   | Place patient head down (Trendelenburg) |
| **Surgeon**       | Diagnose and announce critical event  
|                   | Discontinue gas insufflation  
|                   | Evacuate pneumoperitoneum |
| **Nursing personnel** | Indicate and announce critical event  
|                   | Call for help |
| **All Team members** | Assist with resuscitation  
|                   | Turn patient to left lateral position, head down if feasible  
|                   | Assist with right heart catheterization for aspiration of gas |

*The table shows the role and actions of each team member as well as team actions. It is useful for the whole operating room team to have a prior discussion of the team’s role and actions. All team members have the responsibility to indicate any abnormal readings on the monitors.*
The effects of the increased dead space can be minimized by increasing the tidal volume, thereby forcing more ventilation to the lower (better perfused) alveoli. The decrease of lung compliance due to the pneumoperitoneum and consequent requirement for higher inspiratory pressures aggravates this dead space effect, necessitating even greater increases in tidal volume and minute ventilation. However, the increases in minute ventilation required to maintain stable arterial carbon dioxide (PaCO2) values vary from 12% to 55% and may require unacceptably high ventilatory pressures. Accepting an increased carbon dioxide level (“permissive hypercapnia”) might be the prudent choice.

The typical desired “normal” end-tidal carbon dioxide concentration with the patient under general anesthesia is 32 to 36 mm Hg. During laparoscopic surgery, carbon dioxide is absorbed from the pneumoperitoneum and end-tidal carbon dioxide values of 40 to 50 mm Hg are not uncommon. The elevated (higher) levels of carbon dioxide may lead to increased venous oozing as carbon dioxide has a direct vasodilatory effect on the microvasculature. Although it is possible to increase minute ventilation using higher than normal ventilatory pressures, these higher pressures increase the risk of barotrauma. The relative danger of barotrauma versus the risk of increased bleeding needs to be evaluated and discussed by the operating room team.

The capnograph is usually considered a “ventilation” monitor, but, given a relatively constant tidal volume as with a ventilator (in volume controlled mode), the capnograph can be used as a cardiac output monitor. The constant tidal volume eliminates only the carbon dioxide brought to the lungs by the cardiac output in each time unit. Any sudden decrease in cardiac output leads to a decrease in end-tidal carbon dioxide concentration.

**Pulsatile Oxygen Saturation Monitor (SpO2)**

The anesthesiologist should be aware of the temporal relationships between changes in monitor readings and the progress of the laparoscopic surgery. For instance, a sudden decrease in oxygen saturation during initial insufflation of gas into the peritoneal space might be due to a gas embolism (late sign), while a decrease in saturation at a later stage might be due to atelectasis of basal lung units (due to an excessively high setting of the laparoscopic pneumoperitoneum pressure or obstruction of the outflow) (Table 2).

A continual slowly decreasing oxygen saturation is regularly encountered during laparoscopic surgery, and it might be treated with an increased inspired oxygen concentration. However, it is advisable to try to diagnose the cause. For instance, a more physiologically appropriate approach might be to test the effect of an increased level of positive end-expiratory pressure (PEEP) after a few large breaths to

---

**Causes of a relatively sudden decrease in pulse oxygen saturation**

<table>
<thead>
<tr>
<th>Cardiovascular causes</th>
<th>Table 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carbon dioxide (or other gas) venous embolism</td>
<td></td>
</tr>
<tr>
<td>Decreased intravascular volume (hemorrhage, fluid deficit, “shunt effect”)</td>
<td></td>
</tr>
<tr>
<td>Inferior vena cava compression</td>
<td></td>
</tr>
<tr>
<td>Myocardial depression (“deep anesthesia,” excessive hypercapnia)</td>
<td></td>
</tr>
<tr>
<td>Dysrhythmias (hypercapnia, “light anesthesia,” sympathetic stimulation)</td>
<td></td>
</tr>
<tr>
<td>Endobronchial intubation (cephalad shift mediastinum)</td>
<td></td>
</tr>
<tr>
<td>Hypoverilation (decreased compliance, multiple causes - see text)</td>
<td></td>
</tr>
<tr>
<td>Pneumothorax</td>
<td></td>
</tr>
<tr>
<td>Aspiration of gastric contents</td>
<td></td>
</tr>
<tr>
<td>Circuit disconnect with esophageal bougie manipulation (Nissen fundoplication)</td>
<td></td>
</tr>
<tr>
<td>Mediastinal emphysema</td>
<td></td>
</tr>
</tbody>
</table>

*Many causes of hypoxia exist in a patient undergoing anesthesia. These are fully discussed in standard textbooks. This table addresses causes specifically related to laparoscopic surgery.*
recruit alveoli. Another remedy to consider is to lengthen the inspiratory pause of the ventilator to allow the overventilated “fast” alveoli (with short time constants) to equilibrate with the “slow alveoli” (with long time constants).

**Ventilation Monitoring**

By monitoring both the peak inspiratory pressure (PIP) as well as the inspiratory plateau pressure during the inspiratory pause, the anesthesiologist gains information about:

1. the inspiratory flow resistance as indicated by the difference between the peak and plateau pressures. The resistance may be increased due to equipment factors, such as a kinked or obstructed (blood, secretions) endotracheal tube or by patient factors like bronchospasm;

2. the compliance of the lung can be approximated by the following: tidal volume divided by the plateau pressure. The compliance might be decreasing due to barotrauma or due to fluid shifts (eg, Shire's Third Space') during prolonged surgery. A decreasing compliance might also be an early indicator of a relative fluid overload. The compliance might also be used as one of the factors in the decision to extubate the patient after prolonged surgery.

The decreased compliance of the lung (due to the pneumoperitoneum) influences the ventilator parameters monitored by the anesthesiologist:

1. for volume-controlled mechanical ventilation, with a preset tidal volume, the parameters to be monitored are peak and plateau pressures. Excessively high values may indicate the need for adjustment (decrease) of the preset tidal volume;

2. for pressure controlled ventilation (PCV), the maximum inspiratory pressure is set (fixed).

The parameter to be monitored is the tidal volume, which will decrease as the compliance decreases. Adjustments of the “set pressure,” respiratory rate (both upwards), or both, might be required in order to avoid excessive hypercapnia.

**Neuromuscular Blockade Monitor**

Monitoring of the neuromuscular blockade throughout the surgery gives the anesthesiologist an idea of how rapidly this specific patient reverses a given dose of muscle relaxant. Due to the requirement for adequate muscle relaxation during laparoscopic surgery until deflation of the pneumoperitoneum and the rapid closure of the small laparoscopic incisions, it is necessary to know the state of muscle relaxation with the aim of rapid reversal of the neuromuscular blockade.

**Urine Output**

The urine output may be used as a monitor of fluid balance and adequacy of intravolume volume. The pneumoperitoneum decreases the cortical and medullary renal perfusion and hence the total renal perfusion is also decreased. This leads to a decreased glomerular filtration rate (GFR), decreased sodium excretion, and decreased creatinine clearance. The monitor affected is the urine output. This “normal” or typical decrease in urine production needs to be considered when calculating intravenous fluid requirements. Accumulation of gas in the urinary catheter bag during insufflation may indicate a bladder injury.

**Temperature**

A temperature monitor is necessary, as all but the shortest laparoscopic surgeries require some form of external heating (eg, a forced warm air blanket.) The evaporation of liquid carbon dioxide in the gas cylinder cools the insufflating gas. Further cooling occurs due to the expansion of the compressed gas (Joule-Thompson effect.) The dry insufflated gas is humidified in the...
abdominal cavity, and the most cooling is caused by the latent heat of vaporization of water, which far exceeds the energy needed to heat the gas. (One liter of gas requires ±24 cal to be fully humidified (±4 mg water vapor per liter at 37°C); one liter of gas requires ±7 cal to be heated from 20°C to 37°C)

**Precordial (Esophageal) Stethoscope**

The precordial or esophageal stethoscope may be one of the first monitors to give an indication of surgical emphysema (mediastinal, subcutaneous, neck) by the development of audible “crackles.” Palpation of the patient may also reveal the presence of surgical emphysema. Due to the possibility of airway obstruction by the surgical emphysema, the endotracheal tube may be left in situ until the surgical emphysema has started to dissipate.

W. Bosseau Murray, MD, is Professor, Department of Anesthesiology, and Associate Director, Simulation Development and Cognitive Science Laboratory and works within the Departments of Anesthesiology and Nursing and Surgery at Pennsylvania State University College of Medicine at the Milton S. Hershey Medical Center, Hershey, Pennsylvania. Dr. Murray has over two-dozen areas of expertise including laparoscopy, anesthesiology, physiologic monitoring, computer simulation, hemodynamic processes, and teaching.

**References:**


**FROM THE 13TH INTERNATIONAL CONGRESS AND ENDO EXPO**

**MULTIDISCIPLINARY PLENARY SESSION ACCOMMODATING THE NEW MALPRACTICE ENVIRONMENT**

**Legal Perspective.** In today’s litigious society, it pays for every doctor to become well-informed about the risks of lawsuits, as well as knowing the proper way to structure both personal and professional assets to be 100% protected.

– Jay W. Mitton, MBA, JD

**The Liability Crisis Costs Us All.** Seven of 10 lawsuits filed against physicians will be dismissed, and 80% will be won by the physician. Billions of dollars are spent on “defensive medicine,” and on liability insurance premiums that make it more difficult for hospitals and rural practices to recruit new physicians, purchase new equipment, or make system-wide changes to improve patient safety.

– J. Edward Hill, MD

**Insurance Perspective.** Malpractice rate increases across the country are inversely proportional to the presence of effective tort reform. In California, where the Medical Injury Cap Reform Act was passed, approximately $402,500 is awarded annually in malpractice suits, whereas in New York, where no such legislation exists, the award averages $1,000,000.

– Richard E. Anderson, MD

**Asset Protection.** If you are financially successful, it is only a matter of time before you are sued. A physician can be sued today for a surgery performed 20 years ago. The best way to protect and organize your medical practice is with the family limited partnership.

– G. Kent Mangelson, Certified Financial Planner, Sr. Advisor
Hysterectomy is the most frequently performed major gynecologic procedure with approximately 600,000 cases in the United States each year. In this era of advanced operative laparoscopy and minimally invasive surgery, where almost all types of procedures have been performed endoscopically, a considerable number of hysterectomies are still being performed through large abdominal incisions. However, a slow but gradually increasing trend has occurred towards laparoscopic or laparoscopic-assisted vaginal hysterectomies, 0.3% in 1990 to 9.9% in 1997. The extent of laparoscopic involvement has ranged from simply before vaginal hysterectomy to evaluate the peritoneal and pelvic cavity and to assess the feasibility of vaginal hysterectomy, to performing the most advanced and complicated procedures, such as total laparoscopic radical hysterectomy with pelvic and paraaortic lymphadenectomy.

As per data from the nationwide Inpatient Sample of the Healthcare Cost and Utilization Project, the indications for laparoscopic hysterectomies have been leiomyomas (28%), endometriosis (19%), menstrual irregularities (15%), prolapse (13%), malignancy (5%), and pelvic inflammatory disease (3%). The advantage of a laparoscopic approach over the open abdominal route in terms of intraoperative blood loss, short- and long-term postoperative morbidity, and recovery has been demonstrated repeatedly. However, little benefit over the vaginal approach has been seen.

The indications for laparoscopic and laparoscopic-assisted vaginal hysterectomy are generally those that would preclude a vaginal approach, ie, similar to those for abdominal hysterectomy. Notably, the 9% increase in laparoscopic hysterectomies from 1990 to 1997 corresponds to the decline in the rate of abdominal hysterectomies during the same period. Broadly, the considerations are prior surgery or pelvic inflammatory disease necessitating lysis of adhesions, endometriosis and a coexistent pelvic mass requiring evaluation. Considerations like large uteri, adnexectomy, surgery in an obese patient and the role of laparoscopy in gynecologic malignancies are a matter of debate and are dependent on the surgeon’s experience. Moreover, as experience in vaginal surgery continues to decline with each consecutive batch of graduating residents, with rapid technological developments in the field of laparoscopy, and as data regarding various outcomes mature, increasing numbers of indications for the laparoscopic approach to hysterectomy will continually be defined.

Some of the factors that have limited the widespread adoption of the laparoscopic approach have been concerns regarding cost, complications, learning curve, operative time and the lack of well-defined indications. In terms of cost, several studies over the last decade have
demonstrated that with the use of reusable instruments, shorter length of stay with laparoscopic procedures, and decreasing operative times with experience, the cost of a laparoscopic hysterectomy is comparable to the cost of a vaginal or an abdominal hysterectomy.  

The incremental savings from quicker recovery and return to work and fewer postoperative visits certainly reduce the overall cost following laparoscopic hysterectomy.

As for the complication rate and length of the procedure, these are dependent on surgeon experience and expertise in laparoscopic procedures. Nezhat et al13 in their series of 361 laparoscopic hysterectomies had no mortality, major vessel, or urinary tract injury, and one case of small bowel perforation. Wattiez et al14 in their series of over 1600 laparoscopic hysterectomies over 10 years demonstrated a significant decline in major complication rates, conversion rates to laparotomy, and operative time from 5.6% to 1.3%, 4.7% to 1.4%, and 115 minutes to 90 minutes, respectively, with increasing surgical experience. A large Finnish study15 attempted to define the learning curve for laparoscopic hysterectomies by demonstrating a significant drop in all major complications beyond 30 procedures. The rate of conversion to laparotomy has been described as ranging from 4% to 11%, for reasons like large uteri, diminished uterine mobility, excessive dense abdominal adhesions, and uncontrolled hemorrhage.

Recently, there has been a resurgence of interest in the supracervical hysterectomy for benign conditions. Proponents of this approach tout the preservation of neurovascular integrity, and as a result less bowel, bladder, and sexual dysfunction, as well as complications, as reasons for offering supracervical hysterectomy, although none of the retrospective and prospective randomized studies so far has substantiated this contention.17,18 Limited data are available on the outcome of this procedure via laparoscopy and how it compares with total laparoscopic or assisted vaginal hysterectomy.

In conclusion, the vaginal approach should be preferred for hysterectomy, whenever feasible. Laparoscopic, or laparoscopic-assisted vaginal hysterectomy can diminish the need for laparotomy in more than 90% of cases. Defining guidelines for training, credentialing, and improvement in instrumentation will help in minimizing complications, decreasing operative time, and improving patient satisfaction.

References:

Address reprint requests to: Farr Nezhat, MD, 25 Columbus Cir, Apt 60B, New York, NY 10023, USA. Tel: 212 241 9434, Fax: 212 987 6386; E-mail: Farr.Nezhat@mssm.edu

Farr Nezhat, MD, is a Past President of the Society of Laparoendoscopic Surgeons. He is the Director and Fellowship Director of the Gynecologic Minimally Invasive Surgery Division, and a Professor of Obstetrics and Gynecology at the Mount Sinai School of Medicine in New York. A pioneering leader in the application of minimal access surgery to pelvic malignant and benign gynecologic pathologies, he is nationally and internationally known for his research, teaching and clinical contributions to the field of gynecologic and pelvic surgery.

Jyoti Yadav, MD, is an Instructor at New York Medical College and an Attending Physician in Obstetrics, Gynecology and Gynecologic Minimally Invasive Surgery at Our Lady of Mercy Medical Center in Bronx, New York. In 2004, Dr. Yadav completed a fellowship in Gynecologic Minimally Invasive Surgery at Mount Sinai Hospital in New York, New York. She has expertise in advanced hysteroscopic and laparoscopic procedures for challenging conditions like fibroids and severe endometriosis.


JOURNAL WATCH: Surg Endosc

The Impact of Laparoscopy on Bariatric Surgery • Cottam DR et al 2005;19(5):621-627. As compared with the open approach, the laparoscopic approach to bariatric surgery elicits different biologic responses and offers clinical advantages that the authors suggest have contributed to the growing popularity of the surgery. In this review, the authors attempt to understand the differences between and advantages of the open and laparoscopic approaches.

JOURNAL WATCH: J Am Coll Surg

The Contribution of Laparoscopy in Evaluation of Penetrating Abdominal Wounds • Ahmed N et al 2005;201(2):213-216. The use of laparoscopy in the evaluation of stab and gunshot abdominal wounds was prospectively studied in a teaching hospital with a Level II trauma center seeing a high percentage of penetrating injuries. Having analyzed the laparoscopic and open laparotomy findings, injuries repaired, postoperative complications, and hospital and ICU days, the authors concluded that laparoscopy for penetrating abdominal injuries in a defined set of conditions was safe and accurate.

JOURNAL WATCH: Contemporary Surgery

Capsule Endoscopy: A New Tool for the Work-up of Occult GI Bleeding • Schmitt TM et al 2004;60(7):312-316. The authors outline two cases in which the use of wireless gastrointestinal endoscopy with a swallowable camera assisted in localizing bleeding in the small intestine beyond the duodenum bulb. Indications, limitations, and complications of capsule endoscopy are discussed, and the authors provide readers with a “When to Use Capsule Endoscopy” flow chart.

JOURNAL WATCH: J Reprod Med

Intravaginal Electrical Stimulation for the Treatment of Chronic Pelvic Pain • de Oliveira Bernardes et al 2005;50(4):267-272. Twenty-four women participated in this study in which treatment consisted of ten 30-minute sessions 2 to 3 times per week with a Dualplex 961 that has a frequency of 8 Hz, a variation in intensity and frequency of 1 msec pulse length, and adjustment to the bearable intensity of each patient. Pain scores were evaluated before treatment, at 2 wks, 4 wks, and 7 months. At 7 months 66.7% of participants had no pain, and 8.3% had slight pain.
EXCERPT FROM NEW TEXTBOOK PREVENTION AND MANAGEMENT OF LAPAROSCOPIC SURGICAL COMPLICATIONS, 2ND EDITION

Safe Use of Electrosurgical Devices During Minimally Invasive Surgery

C. Randle Voyles, MD, MS, Robert D. Tucker, PhD, MD

Though a wide variety of energy sources have been used in laparoscopy, electrosurgery with monopolar or bipolar applications remains the most versatile, most economical, and most widely available energy source for abdominal and pelvic surgeons.

FOUR TECHNIQUES FOR DELIVERING MONOPOLAR ELECTROSURGERY

The 4 specific surgical techniques of electrosurgery were originally described by Cushing and Bovie. These specific techniques include cutting, arc-fulguration, contact desiccation, and coaptive desiccation.

The optimal cutting tissue effect (vaporization) is provided by the cut mode with a fine electrode edge or needle near but not touching tissue. Given ample power density, cut causes intense heating and boiling of intracellular contents by the to-and-fro motion of an alternating electrical field. The cells “explode” and vaporize giving the cutting effect. When the electrode is held near tissue but not in contact, hemostasis is poor as superficial cells are vaporized without significant desiccation of deeper tissue and arterioles.

Arc-fulguration is an extremely useful technique that provides superficial desiccation of tissue by arcing current from the electrode through the air to nearby tissue. The most effective arcing occurs with higher voltage generators operated in the coag mode. Note that the maximum coag voltage varies by company, by generator, and by the mode that is selected. Superficial tissue effects occur because tissue contact is not made with the electrode and the arcing process dissipates much of the energy. After the first “bolt” strikes a specific tissue point, that tissue is desiccated and loses its conductivity. Thus, the next bolt strikes the next most conductive area. Fulguration is a useful modality as it allows desiccation without physical contact with the tissue. This superficial noncontact effect cannot be achieved by either bipolar or the ultrasonic dissector. Although spray fulguration may be improved with the use of argon gas, caution is advised as acutely elevated intraabdominal pressures, hypotension, and air embolism have been reported as a result of the instilled gas.

Contact desiccation occurs when the electrode is activated in contact with tissue, providing hemostasis as successive layers of tissue are desiccated. As superficial tissue is desiccated, generator voltage output automatically increases and facilitates deeper tissue effects. Contact desiccation leads to development of eschar, which may be desirable in some settings, but eschar formation may distort anatomic planes. With broad contact between the electrode and tissue, desiccation without cutting occurs within either the cut or coag mode. Desiccation in the cut mode takes a bit longer than that in the coag mode but is associated with lower voltage and, perhaps, a more superficial tissue effect, depending on the time of contact. If the power density
is high enough, tissue transection may be achieved with either cut or coag mode.

**Coaptive coagulation** occurs when tissue is compressed within a grasper and current applied; excellent desiccation occurs with development of a “collagen weld” of the compressed tissue. This tissue effect can be obtained with either cut or coag mode. The benefit of the cut mode is that less voltage is used.

Bipolar electrosurgery provides a more effective coaptive desiccation than monopolar. With the bipolar electrodes, the current flows from 1 tine of the electrode to the other, transversing the tissue within the graspers. The heating may be slower but the transition from desiccated to nondesiccated tissue is larger, leading to more effective hemostasis with larger vessels. The enhanced bipolar devices provide a desiccating effect that is superior to that of the Harmonic scalpel. When bipolar devices are used, tissue transection must be accomplished by mechanical means because the current density is not great enough to allow thermal transection.

**POTENTIAL PROBLEMS WITH ELECTROSURGERY**

The incidence of complications related to the use of electrosurgery is unknown. When complications occur, it is generally impossible to reconstruct the precise mechanism of injury. For example, bowel injury and peritonitis may be related to either thermal injury from either direct or stray currents or mechanical injury from a trocar. Specific histologic changes within injured intestine may suggest thermal injury if the intestine is examined in the early postoperative course. However, the histologic changes may diminish after local infection occurs. Certain complications occur with any operative experience, but delays in recognition, diagnosis, and treatment seemed to be increased after laparoscopic operations. Any patient who is not making daily progress after laparoscopic surgery should be carefully evaluated for a missed laparoscopic injury.

Because of inherent difficulties in retrospectively studying mechanisms of laparoscopic injuries, it is important to categorize potential mechanisms of unintended energy transfer in order to prevent bowel injuries. Several problems are inherent in the use of any energy source during laparoscopy. First, because of “minimal invasion,” the surgeon must rely more heavily on the energy source for hemostasis and cutting than in open operations. No longer can the surgeon place a finger on a bleeder or rapidly place a suture for better hemostasis. Relatively minor bleeding—a minor nuisance with open operations—may completely obscure the laparoscopic view and prevent safe dissection. Also, because of the conductive properties of blood or saline, laparoscopic control of energy may be less precise than that during an open procedure where a dry operative field is more readily maintained. Overzealous application of energy in a “wet” field will distort anatomic planes. In spite of the significant advances with videoscopic surgery, the surgeon still has less tactile feedback and less depth and color perception on the 2-dimensional screen compared with that in the open procedures. Thus, it is important that the surgeon learn to use energy sources to their fullest potential in order to improve precision of application and avoid unnecessary tissue injury.

![Diagram of laparoscopy zones](image-url)
better understanding of the science will improve the art of delivery.

Another problem inherent in the laparoscopic use of monopolar electrosurgery is that the surgical electrode may not be completely within the surgeon’s view during use. The active tip may be visualized but the electrode shaft may be lying on viscera outside the view of the scope. It is possible for a tiny defect in the insulation of conventional instruments to deliver (unobserved) 100% of the current to nontarget tissue. In addition, most instruments (especially the articulating scissors and grasper-dissectors) have been designed with a significant amount of exposed metal at the distal tip. At best, the instrument may “ground out” on nontarget tissue; however, it is also possible that the bowel or other structures could be burned outside the immediate view of the scope. It is also possible for the exposed metal of the active instrument to be in contact with other conductive instruments (the laparoscope or a metal clip), and 100% of the current may be conducted to tissue outside the visualized field. Finally, it must be noted that the electrodes that deliver energy to target tissue are inserted through other conductive tubes, such as cannulas, suction-irrigation devices, or operating laparoscopes. Under some circumstances, it is possible that up to 70% of the intended current can be induced through completely intact insulation to the outer conductor by a process called capacitive coupling.

Electrosurgical injuries outside view of the laparoscope may occur secondary to insulation failure, capacitive coupling, and direct coupling. Burns at the return pad site (the most common electrosurgical injury 15 years ago) have been virtually eliminated by dynamic electronic monitoring of the adequacy of skin-to-return pad interface.

Problem 1: Insulation Failure

Insulation defects in the shaft of electrodes can be acquired from mechanical trauma, repeated sterilization, manufacturing flaws, and capacitive coupled meltdown (Figure 2). Insulation failure is commonplace and represents one of the most prevalent reasons reusable instruments are returned to manufacturers.

The hazard of insulation failure is dependent on the location of the failure (Figure 3). Exposed metal in the handle of the instrument (zone 4) may burn the surgeon. The tips of most articulating electrodes (scissors and atraumatic grasper-dissectors) are incompletely insulated. These devices may have several centimeters of exposed metal that can cause injury to nontarget tissue, ie, the liver during laparoscopic cholecystectomy. A defect in the shaft of the electrode (zone 2) may cause a nondetectable injury to

Figure 3. The potential for recognition and injury of stray current depends on the zone of the defect. Zone 1 is within the view of the laparoscope. Zone 4 defects burn the surgeon; zone 2 burns the patient.
bowel outside the view of the surgeon. The signs of insulation failure within zone 3 (within the cannula) depend on whether a metal or plastic cannula is used. If a metal cannula is used, oftentimes current flows between metal of the electrode to metal of the cannula. The resulting arcing of current may create a lower frequency current (referred to as a “demodulated frequency”), which can be as low as a few cycles per second. Lower frequency electrical currents can cause neuromuscular “stimulation” and jerking of the abdominal wall or diaphragm. A distinct pattern of video interference (“lightning artifact”) is common when current arcs from metal to metal. These indirect signs suggest that insulation failure exists. In this circumstance, metal cannulae are of benefit to the informed surgeon as there are no clues to insulation failure if the active electrode is passed through a plastic cannula.

All forms of conventional insulation are based on a passive system that incorporates layers of nonconductors around the electrode. Defects in insulation may deliver 100% of the current to tissue outside the view of the surgeon and yet remain imperceptible to visual inspection. Some instruments have been constructed with an integrated electronic monitoring system (Encision, Boulder, CO) that assures the surgeon that energy is being delivered only in zone 1.

**Problem 2: Capacitive Coupling**

Capacitive coupling is a mechanism whereby electrical current in the electrode induces a current in nearby conductors (unintended) despite otherwise intact insulation. Some degree of capacitive coupling occurs with all standard monopolar electrosurgical instruments. Whether the “stray energy” of capacitive coupling causes clinical injury depends on 1) the total amount of current transferred and 2) concentration of the current (ie, the power density) as it makes its way back to the patient return electrode. Higher voltages increase capacitive coupling. The low voltage “cut” mode exhibits less capacitive coupling than coag does. Low voltage generators (such as the Valleylab SSE2L) exhibit very little coupling compared with that of higher voltage generators (Valleylab Force 2, 4B or 40). However, higher voltage generators are useful because they offer more effective cutting and desiccation. Surgeons must recognize that open circuit activation (electrode not touching tissue) dramatically increases voltage and the possibility of capacitive coupling. It is

---

**Figure 4.** A “capacitance injury” may occur as a result of induced currents through intact insulation when a hybrid cannula (metal cannula with plastic gripper) is used.

**Figure 5.** Direct coupling can transfer 100% of the current to bowel outside the field of view when a plastic cannula is used around the laparoscope.
desirable to use as low wattage as possible and to limit noncontact activation of the generator. The use of high-voltage generators in the open circuit coag mode, however, provides a useful tissue effect for the laparoscopic surgeon if potential hazards are recognized and controlled.

Four conditions exist where capacitive coupling can cause sufficient current to cause an injury:

1) Hybrid cannulas consist of a metal cannula within a plastic tissue anchor (Figure 4). 2) If a conventionally insulated electrode is passed through a metal suction-irrigator, approximately 70% of the current may be induced in the suction-irrigator. This instrument combination is particularly dangerous when a plastic cannula is used, because all of the stray current may be transmitted through a narrow contact to bowel. An all-metal cannula through the abdominal wall will “bleed off” stray current through the abdominal wall. 3) When a surgical electrode is passed through the operating channel of a laparoscope, 70% of the current may be induced into the laparoscope. 4) Thin insulation decreases the effective separation of the electrode from the surrounding conductor and will increase the amount of induced current. The potential for injury from capacitive coupled currents can be reduced with an understanding of the biophysics but can be eliminated by active electrode monitoring systems that “collect” stray current and confines capacitive coupling to the surgical instrument.

**Problem 3: Direct Coupling**

Direct coupling refers to that condition where the activated electrode touches other metal instruments (ie, the laparoscope) creating a situation whereby energy can be transferred to tissue outside the laparoscopic field of view (Figure 5). Cannulas housing conductive instruments (laparoscope and metal graspers) should be metal cannulas that dissipate directly coupled stray energy through the abdominal wall. A similar “stray current” occurs if the activated electrode is near or touches a metal clip or staple. Sufficient current can be transferred to the metal staple to cause melting and a temperature of 1000 degrees as outlined in earlier sections.

C. Randle Voyles, MD, MS, is a Clinical Associate Professor in the Department of Surgery at the University of Mississippi. He has been researching electrosurgery for over a decade and has made numerous academic contributions to the laparoscopic surgery, electrosurgery, and management of complications.

Robert D. Tucker, PhD, MD, an Associate Professor in the University of Iowa Health Care Department of Pathology, has conducted extensive research in radio frequency electrosurgery and has authored numerous scientific articles on the subject. Dr. Tucker has also developed courses and given national and international lectures on endoscopic electrosurgery.

**References:**


**JOURNAL WATCH: JSLS**

*Robotic Systems and Surgical Education • Di Lorenzo N et al 2005;9:3-12. Robotic systems can serve as tools for resident as well as experienced surgeon education. The use of robotics for surgical training has the potential to reduce the learning period, provide a system to check for errors, and allow for an evaluation of the skills obtained.*

*Portal Vein Thrombosis: An Unusual Complication of Laparoscopic Cholecystectomy • Preventza OA et a 2005;9:87-90. This is a report of portal vein thrombosis following laparoscopic cholecystectomy. The authors explore perioperative measures for thromboprophylaxis in young females on oral contraceptives who require laparoscopic abdominal surgery.*
Endoluminal interventions are indeed evolving, and the endoscopic treatment of gastroesophageal reflux disease (GERD) represents the earliest application of this new surgical revolution. Four major technologies have emerged. Although each uses different approaches to augment the barrier function of the lower esophageal sphincter, the mechanisms may be similar. These technologies include endoluminal gastroplication (ELGP) (EndoCinch, Bard, Murray Hill, NJ), the full-thickness plication device (Plicator, NDO-Surgical, Mansfield, MA), radiofrequency energy delivery to the gastroesophageal (GE) junction (Stretta, Curon Medical, Inc., Freemont, CA), and injectable copolymer Enteryx (Boston Scientific, Natick, MA).

The NDO plicator creates a transmural plication that enhances the competency of the GE junction. The recently published results of the North American open-label trial demonstrate significant improvement in GERD-related quality of life and discontinuation of antisecretory drugs in 70% of patients.

The Stretta procedure delivers radiofrequency energy to the GE junction and to the cardia of the stomach. Treated patients experience decreasing frequency of transient LES relaxation and increased postprandial lower esophageal sphincter (LES) pressure. A randomized sham versus Stretta clinical trial showed a significant improvement in GERD symptoms 6 months after treatment.

Enteryx is a copolymer that is injected under fluoroscopic guidance into the muscularis propria of the lower esophageal sphincter. The material solidifies rapidly in situ and is presumed to alter the distensibility and the compliance of the GE junction. A recent randomized sham-controlled multicenter trial showed a significant reduction in distal esophageal acid exposure and improvement in GERD symptoms.

Endoluminal gastroplication (Endocinch) creates several plications at the GE junction that serve as antireflux barriers. Data from ELGP clinical trials are controversial. Although a recent study demonstrated a significant reduction in GERD symptoms after ELGP, another clinical trial showed unchanged heartburn symptoms or persistent use of proton pump inhibitors in 80% of the patients.

Endoscopic mucosal resection (EMR) is another emerging endoluminal application. EMR has been performed in 479 early gastric cancer patients. After resection, the local recurrence rate was 4.6% with a median follow-up period of 38 months. Although endoluminal ablation of Barrett’s esophagus (BE) with argon plasma coagulation (APC) and photodynamic therapy (PDT)
We are at the dawn of a new era—one in which the surgeon operates in the abdomen with no skin incisions. Endoluminal ablation with radiofrequency energy is promising. The energy applied through a bougie-balloon device (Barrx Medical, Inc., Sunnyvale, CA) results in a mucosal ablation depth of 600 microns to 700 microns that preserves the muscularis propria layer. An early report about this device demonstrates successful BE ablation in 63% of patients with a 0% stricture rate. Even more amazing is the recent development of a device that performs full-thickness resection (FTR) of the intestine. This device allows resecting the bowel endoluminarily without making an abdominal wall incision. Animals that underwent FTR survived for at least 21 days after the procedure.

Endoluminal treatment of esophageal leaks has also been successful. Leak closures have been achieved with endoscopic debridement/cleaning, application of fibrin sealant, endoclip placement, plugging, endoscopic suturing, and stenting of the esophagus.

A recent report has shown the promise of endoscopic therapy for pancreatic necrosis and pancreatic abscess. Successful pancreas debridement through a gastrotomy was achieved in a small number of patients by using a therapeutic gastroscope. Transgastric gastropexy and hiatal hernia repair were also performed in a pig model. This technique requires endoscopic ultrasound (EUS) guidance. The use of EUS allowed extension to anatomical structures outside the wall of the gastrointestinal tract.

In the field of bariatric surgery, endoscopic restrictive procedures started with the creation of a vertical banded gastroplasty in animal models. Recently, Fogel reported his experience with endoscopic vertical gastroplasty in humans. He demonstrated weight loss in all the 10 treated patients but noted that most sutures were gone 6 months to 9 months after the procedure. Thompson has recently used the endoluminal approach to treat gastric bypass patients who had weight regain secondary to dilated gastrojejunostomy. He has performed endocinch tightening of the dilated gastrojejunostomy in 8 patients that has resulted in additional weight loss.

Another chapter in endoluminal therapies has recently opened, demonstrating the feasibility of the transgastric approach to the peritoneal cavity for diagnostic and therapeutic purposes. Liver biopsies, manipulation of intraabdominal organs, gastrojejunostomy, ligation of fallopian tubes, and transgastric cholecystectomy and cholecysto-gastric anastomosis have been performed in pigs. The feasibility of advanced transgastric abdominal surgery has actually been proven by Drs. Rao and Reddy in India (personal communication). They performed transgastric appendectomies in 2 patients.

The search is now on for innovative designs and engineering improvements that have the potential to facilitate these interventions. New endoscopes are being developed. One device, called “Cobra” (USGI Medical), may provide additional benefits, such as a stable platform for triangulation of instruments and camera and the ability to use multiple instruments at the same time. This device should facilitate endoluminal and transgastric surgery. Although all these studies demonstrate the feasibility of the endoluminal approach, they also highlight many limitations of the present techniques. These include difficulty in exerting sufficient forward force and keeping the retroflexion view when the endoscope is in an unsupported position in the peritoneum, not to mention the risks of peritoneal infection from the gastrostomy site, the difficult visual orientation, and the present limits in endoscopic instrumentation.

In summary, it appears that we are at the dawn of a new era or another minimally invasive surgery “revolution,” one in which the surgeon operates in the abdomen with no skin incisions.
William O. Richards, MD, is Professor of Surgery and Director of Laparoendoscopic Surgery at Vanderbilt University Medical Center in Nashville, Tennessee. His interests include minimally invasive and endoluminal surgery for GERD, Achalasia, and obesity.

Alfonso Torquati, MD, MSCI, is Assistant Professor of Surgery and Director of Foregut and Bariatric Surgery Research Program at Vanderbilt University Medical Center in Nashville, Tennessee. Minimally invasive and endoluminal surgery are his primary interests.

Nik Sekhar, MD, is an Instructor of Surgery and Laparoscopic Surgery Fellow at Vanderbilt University Medical Center in Nashville, Tennessee. His interests include minimally invasive and endoluminal surgery.

Yassar Khalil Youssef, MD, is a Laparoscopic Surgery Fellow, Division of GI and Laparoscopic Surgery, at Vanderbilt University Medical Center in Nashville, Tennessee. His interests include minimally invasive and endoluminal transgastric surgery.

**References**


The Excel Award is given each year to surgeons who have made outstanding contributions to laparoscopy, endoscopy, and minimally invasive surgery. The Society of Laparoendoscopic Surgeons’ Advisory Board selects the nominees and then votes to determine who is to receive the award. Excel Award recipients are invited to present to the attendees at the Society’s annual meeting. This year’s recipients are Michael S. Kavic, MD, and Carl J. Levinson, MD.

Michael S. Kavic, MD

Michael S. Kavic, MD, is Program Director of General Surgery at St. Elizabeth Health Center, Youngstown, Ohio. He is Professor of Surgery and Vice-Chair Department of Surgery at Northeastern Ohio Universities College of Medicine and Adjunct Professor of Surgery at the University of Pittsburgh School of Medicine.

A graduate of Meharry Medical College, Nashville, Tennessee, Dr. Kavic completed his surgical residency at St. Elizabeth Hospital and Medical Center, Youngstown, Ohio. He is a Diplomate of the American Board of Surgery, a Fellow of the American College of Surgeons and is certified by the American Board of Laser Surgery. Dr. Kavic is a founding member of the Society of Laparoendoscopic Surgeons and of the American Hernia Society. He is also a member of the Alpha Omega Alpha Honors Medical Society, the Association of Academic Surgeons, the American Society of Abdominal Surgeons, the Society of American Gastrointestinal Surgeons, The Central Surgical Association, and the European Endoscopic Association of Surgeons.

Dr. Kavic is Editor-in-Chief of JSLS, the peer-review journal of the Society of Laparoendoscopic Surgeons, which is indexed and abstracted in Index Medicus and MEDLINE and included in the MEDLARS system. He authored the textbook, Laparoscopic Hernia Repair and is an editor of Prevention and Management of Laparoendoscopic Complications. He has written and published numerous book chapters, journal articles, and editorials and has lectured nationally and internationally on laparoscopic surgery. He was the 1997 President of the Society of Laparoendoscopic Surgeons (SLS) and is the 2005 President of the American Hernia Society.

Carl J. Levinson, MD

Carl J. Levinson, MD, has been involved in the field of laparoendoscopy for nearly five decades. His interest in endoscopy began in 1957 with culdoscopy and was rejuvenated in 1971 with the formation of the American Association of Gynecologic Laparoscopists (AAGL). Dr. Levinson was a member of the AAGL board and eventually President. During these years he engaged in simple laparoscopy, moving onto hysteroscopy and microsurgery and, subsequently, hysterectomy.

Dr. Levinson has served as President of the Society of Laparoendoscopic Surgeons (SLS) and currently serves as Scientific Chair. He is an editor of the SLS book Prevention and Management of Laparoendoscopic Surgical Complications. Endoscopy has been the focus of Dr. Levinson’s clinical practice and academic career.
PRODUCTS FOR THE LAPAROSCOPIC SURGEON

Intuitive Surgical's EndoWrist HotShears for the da Vinci Surgical System are the first fully wristed cautery scissors. The combination of a sharp, curved cutting blade and monopolar cautery with a tapered tip profile allow for clean tissue cutting, precise hemostasis, and fewer instrument exchanges resulting in faster procedures. The instrument's primary applications are prostatectomy, pyeloplasty, myomectomy, and hysterectomy. Contact Intuitive Surgical, www.IntuitiveSurgical.com

With MEGADYNE’s reusable MEGA 2000 Soft Patient Return Electrode pad, pressure, shear, and friction are reduced to help protect against Decubitus Ulcer formation, and metal prostheses, body hair, and fragile skin are of less concern. The MEGA 2000 extends the length and width of the adult torso, and the patient simply lies on the pad to achieve full and safe contact so that resistance is minimized and heat build-up is eliminated. It can replace thousands of disposable sticky-pad electrodes, decreasing waste and disposal costs. Contact MEGADYNE, www.megadyne.com

Olympus’ EndoEYE Operating Surgical Videoscope, designed for greater precision and efficiency during gynecologic and thoracic surgical procedures, was developed to make operative laparoscopy easier to master. Its single-piece design facilitates the passage of hand instruments through its 5 mm working channel, makes it easier to work with laser beams and fibers, and features a 10 mm outer diameter. The videoscope provides advanced digital image processing. Contact Olympus America, www.OlympusAmerica.com/endoeye

GENICON’s Bladeless Trocar System is designed to reduce wound defect size and insertion force and to minimize abdominal wall and vessel trauma. When accompanied by a laparoscope during insertion, the optical tip provides direct visualization. The radiolucent cannula is anchored with anatraumatic fascia thread and has a beveled distal tip for smooth insertion without peritoneal tenting. Air-tight dual seal valve technology maintains pneumoperitoneum during instrument exchanges. Contact GENICON, www.GeniconEndo.com

Chlorascrub antimicrobial Chlorhexidine Gluconate swabs and swabsticks by Professional Disposables International feature 3.15 percent Chlorhexidine Gluconate, the most effective level of CHG available for health care professionals. Chlorascrub may be used for antiseptic skin preparation before peripheral IVs, blood cultures, minor surgical procedures, etc. Available in October 2005. Contact PDI, the Healthcare Division of Nice-Pak Products, www.NicePak.com

(continued from page 2)

The EndoSite 3Di Digital Vision System, created to enable surgeons to utilize a minimally invasive approach while operating with an open surgery feel, helped the surgeons to recognize and to navigate through the difficult anatomy.

The system’s ergonomic head-mounted displays developed out of Vista Medical Technologies’ and Rockwell Collins Electro-Optics’ head-mounted displays originally created for military fighter pilots and other commercial applications. Serving as personal monitors for each member of the surgical team, the head-mounted display provides high-resolution, stereoscopic, three-dimensional visualization within the natural line of site. The displays also house the microphone that allows the wearer to access the voice-activated command system to request the display of existing diagnostic reference images and patient information such as x-rays, scans, and medical history. Real-time secondary video in a picture-in-picture format can be viewed as well. Other key features of the EndoSite 3Di Digital Vision System include: EndoSite Digital Video Recorder that records MPEG2 video directly to DVD; a 23-inch flat-panel LCD monitor; EndoSite 3Di digital stereo camera with dual, three-chip CCDs for high resolution and accurate color; the 300-watt EndoSite Xenon light source to provide brilliant illumination.

Viking Systems is headquartered in La Jolla, California and has distributors in Italy, Germany, Sweden, Taiwan, Turkey, India, and the United Arab Emirates. Learn more at www.VikingSystems.com.
Introducing the definitive, all-new technique guide to complications of minimally invasive surgery. The medical and legal communities continue to need up-to-date information on negotiating the learning curve of minimally invasive, image-guided surgery. *Prevention and Management of Laparoscopic Surgical Complications, 2nd Edition* comprehensively addresses specific complications of individual procedures as well as general issues and complications that arise in all applications of laparoscopic surgery.

There’s no other reference like it: a comprehensive multidisciplinary reference text assembled by the editors of SLS, containing the cumulative experience and perspective of 93 noted experts in laparoscopy from all relevant specialties.

**A broader focus helps narrow the unknowns.** *Prevention and Management's* unique multispecialty approach opens the window to nuances and techniques otherwise missed when focus is restricted to an individual specialty. It provides a highly-efficient means of gathering the best information from the best minds working in laparoscopy today.

Order this indispensable reference guide at www.sls.org
Second Asian American Multispecialty Congress of Laparoscopy and Minimally Invasive Surgery

This event in Honolulu, Hawaii brings together surgical specialists from the Pacific Rim and Asian Oceanic regions. The Congress will provide opportunities for meaningful educational and cultural exchanges between surgeons of different surgical specialties that practice laparoscopic and minimally invasive surgery. Plan now to attend this special event, **February 8-11, 2006** at the Hilton Hawaiian Village Beach Resort & Spa, Honolulu, Hawaii, USA!

Register now at [WWW.SLS.ORG](http://WWW.SLS.ORG)

Delegations of leading laparoscopists will create a unique exchange of cultural information and education in minimally invasive surgical approaches and techniques.

**ORGANIZING COMMITTEE MEMBERS**

- Lawrence Biskin MD, USA
- William Chen MD, TAIWAN
- Chao-Chen Chen MD, TAIWAN
- Joe-Bin Chen, TAIWAN
- Yung-Tai Chen MD, TAIWAN
- Po Hui Chiang MD, PhD, TAIWAN
- K.K Chow, SINGAPORE
- Shih-Chieh Jeff Chueh MD, PhD, TAIWAN
- Mark Erian, AUSTRALIA
- George Fielding MD, AUSTRALIA
- Rob J. Fris MB CHB, NEW ZEALAND
- Nick Gabriel DO, USA
- Sherry Gang MD, HONG KONG
- Anurag Gupta MD, AUSTRALIA
- Makoto Hashizume MD, PhD, JAPAN
- Shoji Hasuda, JAPAN
- Satoshi Hata MD, JAPAN
- Masayuki Higashino, JAPAN
- Woo Jin Hyung MD, KOREA
- Shridhar Iyer MD, SINGAPORE
- Lileswar Kaman MD, INDIA
- Sonia Kamboj, INDIA
- Nobuyasu Kano MD, PhD, JAPAN
- Hisayuki Kaseki MD, PhD, JAPAN
- Dongho Kim MD, PhD, KOREA
- Hyoung-Ho Kim MD, PhD, KOREA
- Seigo Kitano MD, JAPAN
- Michiya Kabayashi MD, PhD, JAPAN
- Paul B.S. Lai, HONG KONG
- Wai Lun Law MS, HONG KONG
- Doo Yun Lee MD, KOREA
- Paul Lee MD, KOREA
- Zhong Liang PhD, MD, CHINA
- Davide Lomanto, SINGAPORE
- Ravinder Singh Malhotra, INDIA
- Minoru Matsuda MD, JAPAN
- Yasunori Matsuoka MD, JAPAN
- Hirotaka Ota MD, JAPAN
- Sidda Reddy Anireddy Palli MD, INDIA
- Taehan Park MD, KOREA
- Prasanna Reddy MD, INDIA
- Koon-Ho Rha MD, PhD, KOREA
- Manjula Rohatgi MD, INDIA
- Vinay Sabharwal, INDIA
- Mitsuru Shiotto MD, JAPAN
- Reyaz M. Singaporewalla MD, SINGAPORE
- Lakhvinder Singh, INDIA
- Gyung Tak Sung MD, KOREA
- Dr. Takehara, JAPAN
- Khoon Hean Tay MBBS, SINGAPORE
- F.H. Maurine Taok MD, SINGAPORE
- Kiyohiko Yamada MD, PhD, JAPAN
- Hideo Yamada MD, JAPAN
- Moto Yamagata MD, JAPAN
- Shigeki Yamauchi MD, JAPAN
- Manabu Yamamoto MD, JAPAN
- Kazuhiko Yoshimura MD, PhD, JAPAN
- Chang Sik Yu MD, KOREA

**Register now at**

[WWW.SLS.ORG](http://WWW.SLS.ORG)

Delegations of leading laparoscopists will create a unique exchange of cultural information and education in minimally invasive surgical approaches and techniques.

**Register now at**

[WWW.SLS.ORG](http://WWW.SLS.ORG)

Delegations of leading laparoscopists will create a unique exchange of cultural information and education in minimally invasive surgical approaches and techniques.

**Register now at**

[WWW.SLS.ORG](http://WWW.SLS.ORG)

Delegations of leading laparoscopists will create a unique exchange of cultural information and education in minimally invasive surgical approaches and techniques.
ORGANIZATIONS
Chinese University of Hong Kong
University of Hong Kong and Queen Mary Hospital
Vardaan Medical Center
Kyushu University
Japan Society of Gynecologic Obstetric Endoscopy
Kinki University School of Medicine
Surugadai–Nihon University Hospital
Shizuoka Cancer Center
Korean Laparoscopic Gastrointestinal Study Group
Yonsei University
The Obesity Surgery Society of Australia and New Zealand
National Taiwan University Hospital

CONGRESS OBJECTIVES
The objectives of this program are to provide attendees with:

• A multidisciplinary learning environment.
• New knowledge and applications in minimally invasive surgery.
• A clearer concept of new and standard laparoscopic and endoscopic techniques.
• An exchange of information between surgeons representing their country or a professional organization on the challenges they face practicing and teaching minimally invasive surgery.

REASONS TO ATTEND
• Experience a unique conference offering a multispecialty approach to minimally invasive surgical techniques and procedures.

• Expand your knowledge of the use of laparoscopic diagnostic and treatment techniques taught by acknowledged leaders in their respective specialties and countries.

• Learn in a multidisciplinary environment as topics specific to general surgeons, gynecologists, and urologists are presented in general sessions providing a multispecialty approach to minimally invasive surgery.

• Understand how different countries have met the challenges of training and practicing minimally invasive surgery.

• Find out about cultural differences and similarities between neighboring Pacific Rim countries.

CONFERENCE HOTEL / ACCOMMODATIONS
Hilton Hawaiian Village Beach Resort and Spa
2005 Kalua Road, Honolulu, HI 96815
TEL (808) 949-4321 • FAX (808) 947-7898
www.hiltonhawaiianvillage.com

Hilton Hawaiian Village Beach Resort and Spa, Honolulu, Hawaii, located on Waikiki’s widest stretch of beach, features lush tropical gardens, waterfalls, exotic wildlife, and priceless artwork. The resort is a perfect blend of luxurious accommodations, spa facilities, over 20 restaurants and lounges, shopping, recreational and cultural activities, nightly entertainment, and more.

RATES
Special daily rates for conference attendees:

$210.00 Garden/Mountain View
$230.00 Partial Ocean View
$245.00 Ocean View
$265.00 Deluxe Ocean View

All rates are European Plan. No meals are included and applicable taxes will be added.

Make your reservations no later than January 6, 2006. After January 6, 2006, reservations will be confirmed on a space availability basis only. For those attending the congress who require special assistance (accessibility, dietary, etc.), please notify the hotel of special requests upon making your reservations or before January 6, 2006.

CALL NOW AND MAKE YOUR RESERVATIONS

ACREDITATION The Society of Laparoendoscopic Surgeons (SLS) is accredited by the Accreditation Council for Continuing Medical Education to provide continuing medical education for physicians.

DESIGNATION This activity has been approved for AMA PRA credit.

CONFERENCE FEES

<table>
<thead>
<tr>
<th></th>
<th>On or Before December 8, 2005</th>
<th>After December 8, 2005</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physician Members</td>
<td>$495</td>
<td>$595</td>
</tr>
<tr>
<td>Physician Non-Members</td>
<td>$595</td>
<td>$595</td>
</tr>
<tr>
<td>Delegates and Organizing Committee Members</td>
<td>$395</td>
<td>$495</td>
</tr>
<tr>
<td>Residents/Fellows/Affiliated Personnel</td>
<td>Scholarships available. Go online to <a href="http://www.sls.org">www.sls.org</a> for more information.</td>
<td></td>
</tr>
</tbody>
</table>

REGISTER NOW AT WWW.SLS.ORG
**SECOND ASIANAMERICAN MULTISPECIALTY CONGRESS / PROGRAM AGENDA**

**WEDNESDAY, FEBRUARY 8, 2006**

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>3:00 – 6:00 pm</td>
<td>Congress Registration Opens</td>
</tr>
<tr>
<td>6:00 – 7:00 pm</td>
<td>Opening Ceremony and Welcome, Delegation Introductions, Cultural Presentations</td>
</tr>
<tr>
<td>7:00 – 8:00 pm</td>
<td>Welcome Reception</td>
</tr>
</tbody>
</table>

**THURSDAY, FEBRUARY 9, 2006**

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>7:00 – 7:30 am</td>
<td>Continental Breakfast and Visit Exhibits</td>
</tr>
<tr>
<td>7:30 – 7:45 am</td>
<td>Opening Remarks</td>
</tr>
<tr>
<td>7:45 – 8:45 am</td>
<td><strong>LAPAROSCOPY IN CANCER:</strong> Complications of Laparoscopic Radical Hysterectomy and Lymphadenectomy; Laparoscopic Assisted Gastrectomy for Gastric Cancer; Laparoscopic Gastrectomy for Gastric Cancer; Endoscopic Procedures for Breast Cancer</td>
</tr>
<tr>
<td>8:45 – 9:30 am</td>
<td><strong>GYNECOLOGY:</strong> Endoscopic Surgery in Infertility; Hysteroliberescopic Intervention to Placental Polypectomy; Deep Pelvic Endometriosis</td>
</tr>
<tr>
<td>9:00 – 10:15 am</td>
<td><strong>GENERAL SURGERY:</strong> Laparoscopic Splenectomy; VATS and Sympathetic Surgery in Patients With Hyperhidrosis; VATS and Wedge Resection in the Patients With Pneumothorax</td>
</tr>
<tr>
<td>10:00 – 10:15 am</td>
<td>Cultural Presentation</td>
</tr>
<tr>
<td>10:15 – 10:45 am</td>
<td>Break and Visit Exhibits</td>
</tr>
<tr>
<td>10:45 – 11:15 am</td>
<td><strong>HEPATOBILIARY:</strong> Laparoscopic Liver Resection; Laparoscopic Hepatectomy</td>
</tr>
<tr>
<td>11:15 – 12:30 pm</td>
<td><strong>LAPAROSCOPY IN CANCER:</strong> Laparoscopic Gastric Cancer Surgery: How Far Should We Go; Laparoscopic Resection for Rectal Cancer; Intrapleural Hyperthermo-Chemotherapy for Malignant Pleurisy by VATAS; Laparoscopic Gastric Cancer Surgery in Korea</td>
</tr>
<tr>
<td>12:15 – 12:30 pm</td>
<td>Cultural Presentation</td>
</tr>
<tr>
<td>12:30 pm – 1:15 pm</td>
<td><strong>COLORECTAL:</strong> Colorectal Surgery; Laparoscopic Resection of Rectal Cancer; Total Colectomy for Colonic Inertia</td>
</tr>
<tr>
<td>6:30 pm</td>
<td>SLS Fun Event with Faculty</td>
</tr>
</tbody>
</table>

**FRIDAY, FEBRUARY 10, 2006**

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>7:00 – 7:30 am</td>
<td>Continental Breakfast and Visit Exhibits</td>
</tr>
<tr>
<td>7:30 – 8:15 am</td>
<td><strong>COLORECTAL:</strong> Outcomes of Laparoscopic Colorectal Surgery; Laparoscopic Surgery in IBD Patients; Laparoscopic Surgery for Crohn’s Disease</td>
</tr>
<tr>
<td>8:15 – 9:30 am</td>
<td><strong>UROLOGY:</strong> Laparoscopic Radical Cystectomy With Urinary Diversion; Robotic Prostatectomy: Korean Experience; Current Status of Minimally Invasive Donor Nephrectomy; Video Assisted/Laparoscopic</td>
</tr>
<tr>
<td>9:30 – 10:30 am</td>
<td><strong>HERNIA:</strong> Laparoscopic Ventral Hernia Repair; Laparoscopic Ventral Hernia Repair: A series of 100 cases; Totally Endoscopic Hernia Repair With Anatomic Mesh Laparoscopic Gastric Banding for Obesity in Asia; Laparoscopic Ventral Hernioplasty-Present and Future; Laparoscopic Inguinal Hernioplasty-Present and Future</td>
</tr>
<tr>
<td>10:30 – 10:45 am</td>
<td>Break</td>
</tr>
</tbody>
</table>

**SATURDAY, FEBRUARY 11, 2006**

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>7:30 – 8:00 am</td>
<td>Continental Breakfast and Visit Exhibits</td>
</tr>
<tr>
<td>8:00 – 8:15 am</td>
<td><strong>CARDCIOTHORACIC:</strong> Thoracoscopic and Laparoscopic Esophageal Surgery for Malignancy</td>
</tr>
<tr>
<td>8:15 – 9:30 am</td>
<td><strong>UROLOGY:</strong> Laparoscopic Radical Cystectomy With Urinary Diversion; Robotic Prostatectomy: Korean Experience; Current Status of Minimally Invasive Donor Nephrectomy; Video Assisted/Laparoscopic</td>
</tr>
<tr>
<td>9:30 – 10:30 am</td>
<td><strong>HERNIA:</strong> Laparoscopic Ventral Hernia Repair; Laparoscopic Ventral Hernia Repair: A series of 100 cases; Totally Endoscopic Hernia Repair With Anatomic Mesh Laparoscopic Gastric Banding for Obesity in Asia; Laparoscopic Ventral Hernioplasty-Present and Future; Laparoscopic Inguinal Hernioplasty-Present and Future</td>
</tr>
<tr>
<td>10:30 – 10:45 am</td>
<td>Break</td>
</tr>
<tr>
<td>11:00 – 11:15 am</td>
<td><strong>BARIATRICS:</strong> Morbid Obesity is a Genetic and Neurohumoral Disorder of Weight Homeostasis, Not a Matter of “Sloth and Gluttony”</td>
</tr>
<tr>
<td>11:15 – 11:30 am</td>
<td><strong>TECHNOLOGY:</strong> Technical Idea of Hand Assisted Laparoscopic Surgery, Especially About Esophagectomy</td>
</tr>
<tr>
<td>11:30 – 12:15 pm</td>
<td><strong>ROBOTICS:</strong> Robotic Surgery; Robotic Prostatectomy: Korean Experience; Current Status of Minimally Invasive Radical Prostatectomy: Laparoscopic/Robotic Prostatectomy</td>
</tr>
</tbody>
</table>

Faculty, program, and topics subject to change.
ROBOTICPUBLICATIONS.COM, site of the International Journal of Medical Robotics and Computer Assisted Surgery has added a Commercial and Research Database to its on-line subscriber services. The only database dedicated to medical robotics and related technologies it allows efficient access to clinical research and robotics technology development. Search this database by product, keyword, or company to review data on more than 100 commercial and research institutions, details of over 300 products and projects including photos and website links, and contact information for listed institutions and companies.

WEBSURG.COM has added over a dozen new minimally invasive surgery videos on bariatric surgery, splenectomy, common bile duct stones, tracheectomy, parathyroidectomy, and adrenalectomy. Link to www.web surg.com/index.php?url=pda/try.php to view videos on your PDA or pocket PC. A new operative technique chapter on Laparoscopic Instruments is now available, and three short lectures from the International Post-Graduate Course in Minimally Invasive Endocrine Surgery have been posted: Safely Integrating New Technologies Into Active Practice, Imaging in Endocrine Surgery, and Adrenal Incidentaloma.

LAPAROSCOPYHOSPITAL.COM posts educational materials for laparoscopic surgeons and students in ten formats including review and original articles, pictures, videos, presentation slides, news, and frequently asked questions. In addition, 30 plus documents covering instrumentation, troubleshooting, control of bleeding, hernia repair, appendectomy, and other techniques and general topics are available for download. If the numerous materials available don’t answer your question, you can visit the Medical Chat Room.

The final program and meeting abstracts for the International Pediatrics Endosurgery Group 14th Annual Congress for Endosurgery in Children is now available for download at IPEG.ORG.

LAPAROSCOPY.ORG Visit the Society of Laparoendoscopic Surgeons

JOURNAL WATCH: JSLS
A Safer, Simpler Classic Intrafascial Supracervical Hysterectomy Technique • Kim DH et al 2005;9(2):159-162. The authors describe a “new” Classic Intrafascial Supracervical Hysterectomy (CISH) technique that is safer, more convenient, and faster than the conventional technique.

JOURNAL WATCH: JSLS
Carbon-Dioxide Gas Heating Inside Laparoscopic Insufflators Has No Effect • Jacobs VR et al 2005;9(2):208-212. This study demonstrated no difference in gas temperature between insufflators with and without gas heating when temperature was measured at the distal hose end.

JOURNAL WATCH: Outpatient Surgery Magazine
How to Convert to a Four-day Workweek • Geier A. August 2005: 22-23. According to the author, over time a compressed four-day surgical schedule will greatly improve productivity and profitability by decreasing under- and overutilization. The author explains staffing needs and staff preparation for the transition.
## CALENDAR OF EVENTS

### OCTOBER 2005
- **14-17** 13th Annual Congress of the European Society for Gynaecological Endoscopy, Evolution of Surgical Techniques to Improve Women’s Health and Reproductive Function European Society for Gynaecological Endoscopy, Cagliari, Sardinia, Italy
- **16-21** ACS Clinical Congress. American College of Surgeons. San Francisco, California, USA
- **17-21** Advanced Gynaecological Endoscopic Surgery Training Workshop. Sydney, Australia
- **26-29** 18th Annual Techniques in Endoscopic Surgery. Theodor Bilharz Research Institute. Theodorus Gebze, Egypt

### NOVEMBER 2005
- **11** Minimally Invasive Surgery Series 2005—Laparoscopic Nephrectomy. Mayo Clinic. Scottsdale, Arizona, USA
- **11-13** Advanced Laparoscopy Course. University of Iowa Hospitals and Clinics. Iowa City, Iowa, USA
- **12-13** Advanced Laparoscopy. American Association of Urology. Iowa City, Iowa, USA
- **15-16** Fundamentals of Laser Safety. Laser Institute of America. San Francisco, California, USA
- **18-20** Hands-on Urologic Laparoscopy. IMET. Boca Raton, Florida, USA
- **19-20** Hands-on Laparoscopy. American Association of Urology. Houston, Texas, USA

### DECEMBER 2005
- **1-4** Arthroscopy Association of North America Fall Course. Phoenix, Arizona, USA
- **2-4** ISMICS Winter Workshop 2005. International Society for Minimally Invasive Cardiothoracic Surgery. Shanghai, China

### JANUARY 2006
- **14-17** 6th Annual International Meeting on Medical Simulation. Society for Medical Simulation. San Diego, California, USA
- **4-5 or 8-9** Training Course in Robotic Surgery. University of California Irvine. Orange, California, USA

### FEBRUARY 2006
- **8-11** 2nd AsianAmerican Multispecialty Congress of Laparoscopy and Minimally Invasive Surgery. Society of Laparoendoscopic Surgeons. Honolulu, Hawaii, USA

### MARCH 2006
- **2-4** Advanced Videoscopic Surgery Training Course. University of California. San Francisco, California, USA

### APRIL 2006

### MAY 2006
- **5-6** OLC Minimally Invasive Hip and Knee. American Academy of Orthopaedic Surgeons. Rosemont, Illinois, USA

### JUNE 2006
- **1-3** Advanced Videoscopic Surgery Training Course. University of California. San Francisco, California, USA
- **7-10** ISMICS 9th Annual Scientific Meeting. International Society for Minimally Invasive Cardiothoracic Surgery. San Francisco, California, USA
- **20-24** World Congress on Gynecologic Laparoscopy. Croatian Medical Association; Croatian Medical Chamber; Croatian Society for Obstetrics and Gynecology; Croatian Society for Urology; Academy of Medical Science of Croatia; Ministry of Health. Republic Croatia in affiliation with AAGL. Dubrovnik, Croatia

### SEPTEMBER 2006
- **6-9** 15th International Congress and Endo Expo 2006. Society of Laparoendoscopic Surgeons. Boston, Massachusetts, USA

For more information about these and other upcoming events, visit www.laparoscopy.org.
Been waiting for the ultimate prep?  
It’s here, NOW!

Test results of the Fleet® ACCU-PREP™ dosing regimen are so good, there’s little room for improvement. You’ve never seen results like these.

- **Cleansing Efficacy:**
  92% of patients had Excellent or Good cleansing.

- **Patient Acceptance - Ease of taking the prep:**
 88% rated the prep Very Easy, Easy or OK to take.

- **Willingness to repeat the prep:**
  80% were willing to repeat the prep.

**ACCU-PREP, there’s not much room for improvement.**

Encourage your patients to drink large amounts of clear liquids to prevent dehydration. Drinking large amounts of clear liquids also helps ensure that your patient's bowel will be clean for the procedure.

**Fleet® ACCU-PREP**

Visit us at www.phosphoacoa.com
“It’s like a smooth swim through crystal-clear waters”

Introducing Harmonic ACE™ — designed for improved performance*

- **Increased transection speed**—move through tissue quickly while maintaining hemostasis*
- **Expanded use**—seal larger vessels (up to 5 mm) reliably with fewer instrument exchanges*

The NEW Harmonic ACE™ offers the multifunctionality and minimal surrounding tissue damage you trust from the Harmonic™ name.

*When compared with LCS CS.

Advancing Smooth Surgery