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On this issue’s cover, Penelope is assisting surgeon Spencer E. Amory, MD, FACS, as he removes a lipoma from the forearm at the Allen Pavilion of the New York-Presbyterian Hospital in New York City.

Dr. Amory is Chief of the Division of General Surgery at New York-Presbyterian Hospital/Columbia University Medical Center and Clinical Professor of Surgery at Columbia University College of Physicians and Surgeons.

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INTRODUCTION

Information and communication technology (ICT) has been the driving force behind rapid economic growth around the world. It is “transforming social and economic activity faster than the steam engine, railroads, and electricity did in earlier times,” according to a report from the US Agency for International Development (USAID).

This recent statement by the USAID summarizes the impact of information and communication technology. The healthcare industry and physicians have been slow to adopt ICT. A love-hate relationship has existed between physicians and information technology, especially with the older generations. The rapid evolution of technology has made it difficult to keep pace with the changes. In terms of dealing with ICT, one can quote Mohammed Ali: “You can run but you can’t hide.” Sooner or later, all physicians must develop a sophisticated knowledge of ICT.

It is impossible for any physician to function without a computer. In the past few years, no doctor’s office has been without a computer. It is known that most health organizations spend up to 40% of their capital budgets acquiring and updating information technology. Medical informatics was defined by Edward Shortliffe1 thus:

Medical informatics is the rapidly developing scientific field that deals with the storage, retrieval, and optimal use of biomedical information, data, and knowledge for problem solving and decision making.

It is imperative for the laparoendoscopic surgeon to develop knowledge and expertise in this field to take advantage of the new era of the information age. Virtually all aspects of medicine or health care have been affected by information technology. We now see robots making rounds and dispensing medications. Since the inception of the newly designed PACS (picture archiving and communication system), radiographs can be reviewed at home, in medical wards, in operating rooms, and virtually in every place that has a computer connected to the Internet.

EVIDENCE-BASED MEDICINE

The term “evidence-based medicine” (EBM) has become part of everyday clinical practice. It implies the use of current best evidence in making decisions about the care of individual patients. Patients’ treatment should be based, to the greatest extent possible, on evidence.2,3

In the past, most medical decisions were based on clinical experience, guessing, folklore, tradition, nonscientific clinical observations, and the art of medicine. With evidence-based medicine, it is imperative to have scientific validity.2 The availability of good, reliable information is essential for the practice of EBM.

The principles of EBM were stated in 1980, when the American Cancer Society developed its guidelines for the cancer-related health checkup:

First, there must be good evidence that each test or procedure recommended is medically effec-
tive in reducing morbidity or mortality; second, the medical benefits must outweigh the risks; third, the cost of each test or procedure must be reasonable compared with its expected benefits; and finally, the recommended actions must be practical and feasible. Many medical societies have developed guidelines for EBM since these first principles were stated.

Evidence-based medicine was initially defined as opposite to clinical experience. The importance of complementing the clinical experience with better evidence is now emphasized. One common implementation is the use of clinical practice guidelines in decision making to improve outcomes. The Institute of Medicine (IOM) defines clinical guidelines as "systematically developed statements to assist practitioner and patient decisions about appropriate health care for specific clinical circumstances." Critics of clinical guidelines fear that their use and implementation will lead to "cookbook medicine," which will limit the use of practice experience and thwart clinical innovation. Clinical guidelines have proliferated, and currently guidelines are available for almost every disease, with more than 1000 new clinical guidelines created annually. Guideline implementation demands regular review of the scientific literature for necessary updates.

**COMPUTERIZED PHYSICIAN ORDER ENTRY (CPOE)**

In 1999, the Institute of Medicine (IOM) reported in the article “To err is human” that between 44,000 and 98,000 patients die in hospitals every year because of medical errors. In March 2001, the IOM released a second report on patient safety called “Crossing the quality chasm.” In summary, the IOM report states that despite having the best acute medical services in the world, the overall US healthcare system is broken and fails to deliver consistent quality, especially for patients with chronic illness.

The IOM made several recommendations, including (1) creation of a center for patient safety; (2) establishment of mandatory reporting via state agencies; (3) establishment of safety programs in all healthcare organizations; and (4) passage of legislation.

In March 2003, the US House of Representatives Ways and Means Committee passed the Safety Improvement Act by a wide margin. It stated that within 18 months the Secretary of Health and Human Services had to develop voluntary national standards for interoperability of health and information systems, specify medical terminology, and evaluate technologies like computerized physician order entry (CPOE) and medication bar coding.

Adverse drug effects constitute about 19% of all adverse events, the second category after adverse surgical effects. Approximately 30% of inpatients experience at least one adverse drug effect.

Despite the potential benefits of CPOE, only an estimated 4% to 10% of US hospitals have fully implemented CPOE. Pressure has been increasing from the IOM and other groups to implement CPOE. One of the main groups involved in the implementation of quality parameters including CPOE to improve quality and reduce error is the Leapfrog group. The Leapfrog group is a consortium of more than 130 Fortune 500 companies and other large private and public purchasers of health care, including AT&T, IBM, General Electric, and General Motors. They use their combined pur-
chasing power to drive improvements in health-care quality and safety. This group has continuously applied pressure to health providers to implement CPOE. To obtain Leapfrog certification, a hospital must demonstrate that its CPOE system can intercept at least 50% of common serious medication prescribing errors.

There has been legislative pressure to implement CPOE. The State of California passed legislation for health-care facilities to adopt a plan for reducing medication errors by 2005. In addition, 26 other states have passed legislation to implement health-care safety.

The potential savings of implementing CPOE has been emphasized mainly by reducing the number of medication errors. It has been calculated that an average cost exists of $4,685 per adverse drug event. CPOE should be recognized as a decision-support tool. It can be effective only after a supportive system is implemented; this includes laboratory, pharmacy, and dietary department integration. The human factor, not technology, is the main reason for failure. Physician participation and ownership of the project is essential for effective CPOE implementation.

HIPAA Privacy Standards require physicians to protect the privacy of patients' medical information. Physicians are required to control the ways in which they use and disclose patients' "protected health information." In addition, physicians are required to offer patients certain rights with respect to their information, such as the right to access and copy, the right to request amendments, and the right to request an accounting of their charges. Finally, physicians are required to have certain administrative protections in place (such as a privacy officer, staff training, and implementation of appropriate policies and procedures) to further protect patient information.

Although HIPAA does not require physicians to use electronic transactions, a related law, the Administrative Simplification Compliance Act, does impose such a requirement. The
Administrative Simplification Compliance Act requires that all claims submitted to the Medicare program be submitted in electronic form. The implication of this requirement is that because the claims are submitted electronically, they will also be required to comply with HIPAA.

**Title 45, Code of Federal Regulations (45 CFR), Parts 160 and 164: Standards for Privacy of Individually Identifiable Health Information; Final Rule**

**Statutory Background**

Congress recognized the importance of protecting the privacy of health information, given the rapid evolution of health information systems in the Health Insurance Portability and Accountability Act of 1996 (HIPAA), Public Law 104-191, which became law on August 21, 1996. HIPAA’s Administrative Simplification provisions, sections 261 through 264 of the statute, were designed to improve the efficiency and effectiveness of the health-care system by facilitating the electronic exchange of information with respect to certain financial and administrative transactions carried out by health plans, health-care clearinghouses, and health-care providers who transmit information electronically in connection with such transactions. To implement these provisions, the statute directed HHS to adopt a suite of uniform, national standards for transactions, unique health identifiers, code sets for the data elements of the transactions, security of health information, and electronic signature.

**Health Insurance Portability and Accountability Act of 1996 Summary of Administrative Simplification Provisions**

**Standards for Electronic Health Information Transactions**

Within 18 months of enactment, the Secretary of HHS is required to adopt standards from among those already approved by private standards developing organizations for certain electronic health transactions, including claims, enrollment, eligibility, payment, and coordination of benefits. These standards also must address the security of electronic health information systems.

**Mandate on Providers and Health Plans, and Timetable**

Providers and health plans are required to use the standards for the specified electronic transactions 24 months after they are adopted. Plans and providers may comply directly, or may use a health-care clearinghouse. Certain health plans, in particular workers compensation, are not covered.

**Privacy**

The Secretary is required to recommend privacy standards for health information to Congress 12 months after enactment. If Congress does not enact privacy legislation within 3 years of enactment, the Secretary shall promulgate privacy regulations for individually identifiable electronic health information.

**Pre-emption of State Law**

The bill supersedes state laws, except where the Secretary determines that the state law is necessary to prevent fraud and abuse, to ensure appropriate state regulation of insurance or health plans, address controlled substances, or for other purposes. If the Secretary promulgates privacy regulations, those regulations do not pre-empt state laws that impose more stringent requirements. These provisions do not limit a state’s ability to require health plan reporting or audits.

**Penalties**

The bill imposes civil money penalties and prison for certain violations.

Failure to comply with HIPAA can result in civil
and criminal penalties (42 USC § 1320d-5).

Violations of the Administrative Simplification Regulations can result in civil monetary penalties of $100 per violation, up to $25,000 per year.

In June 2005, the US Department of Justice (DOJ) clarified who can be held criminally liable under HIPAA. Covered entities and specified individuals, as explained below, who “knowingly” obtain or disclose individually identifiable health information in violation of the Administrative Simplification Regulations face a fine of up to $50,000, as well as imprisonment up to one year. Offenses committed under false pretenses allow penalties to be increased to a $100,000 fine, with up to 5 years in prison. Finally, offenses committed with the intent to sell, transfer, or use individually identifiable health information for commercial advantage, personal gain, or malicious harm permit fines of $250,000, and imprisonment for up to 10 years.

**ELECTRONIC MEDICAL RECORDS (EMR)**

For many years, physicians have used paper-based medical records. Some of the weaknesses of paper-based medical records are obvious and have become more evident in the information age. Paper-based medical records are often illegible because of poor penmanship. They are often ambiguous and contain incomplete information; the clinical data are often fragmented. In addition, paper records are not readily available and require a large space for storage. Paper-based medical records are difficult to use to coordinate care, routinely measure quality, or reduce medical errors.

Information technology is increasingly recognized as an important tool for improving patient safety and quality of care, and for promoting the practice of evidence-based medicine. Electronic medical records have great potential for improving quality. Some of the benefits of electronic documentation are easy viewing, accurate and easy prescription and test ordering, and messaging. Other potential benefits of implementing EMR include analysis and reporting to improve quality and efficiency; patient-directed functionality and billing, which can yield financial benefits through more complete capture of services provided; more defensible Medicare coding at higher coding levels; and reductions in data-entry staff.

Despite this potential for quality improvement, few physician practices or health-care facilities have embraced the use of Electronic Medical Records. Interest in EMR is increasing among physician groups. In a survey of 1200 mostly solo/small physician groups, less than 13% of respondents said that their practices had EMRs. Thirty-two percent expressed interest in EMRs, and half of these were “very interested.” Clearly, EMR is of growing importance for many physician practices.

Some of the barriers to EMR implementation include high initial cost and uncertain financial benefits, high initial physician time investment, difficulties with technology, complementary changes and support, and problems with electronic data exchange. Other problems include lack of incentive and physicians’ attitudes. The support and encouragement from physician champions is extremely important to successful implementation of EMR.

**CONCLUSION**

The information age has had a major impact on medical practice. It is essential for the laparoscopic surgeon to continue to learn and actively participate in this process to ensure the best possible delivery of care to their patients and ensure compliance with new regulations.
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Laparoscopic Versus Open Proctocolectomy with Ileal Pouch-Anal Anastomosis. Zhang H et al. 2007;16(3):187-191 • The authors note that advances in MIS now allow for the laparoscopic proctocolectomy with ileal pouch-anal anastomosis and that the literature typically describes laparoscopic mobilization of the colon but open proctectomy and ileal pouch-anal anastomosis. Zhang et al used only a small left flank incision to exteriorize the sample and construct the pouch. They retrospectively compared one group of 21 patients who underwent laparoscopic proctocolectomy with ileal J-pouch anastomosis to a group of 25 patients who had undergone the open procedure. The authors found that the laparoscopic approach is technically feasible and provides the advantages of less blood loss, shorter hospitalization, quicker return of bowel function and better cosmetic results.
MANAGEMENT OF INTRAABDOMINAL PELVIC CATASTROPHES

RAYMOND J. LANZAFAME, MD, MBA

INTRODUCTION

The subject of this chapter is Herculean in scope. Entire texts have been devoted to this topic.17-22 This chapter will provide an overview of potential perioperative catastrophes and a philosophy for approaching minimally invasive surgical procedures and their complications.

MANAGING COMPlications

Although the best method for managing complications is to avoid them, the surgeon must remain vigilant during laparoscopy to recognize and address complications immediately. As minimally invasive surgical techniques continue to develop, it is likely that specialty boundaries will continue to blur. The surgical laparoscopist should have a range of skills that permits safe handling of common complications encountered during the course of surgery regardless of the organs involved. By the same token, the surgical laparoscopist should recognize his or her limitations and request a consultation or the assistance of a colleague when necessary.

TROCAR AND BOWEL RELATED COMPLICATIONS

Trocar-related complications generally involve inadvertent laceration or perforation of intraabdominal organs or vascular structures during initial access. The method of gaining access is an independent variable regarding the incidence of these problems. The surgeon should choose the method of access with which she or he is most comfortable and insert all secondary trocars under direct vision. The abdomen should be carefully inspected for serosal injuries or tears due to adhesiolysis or traction. Using alternative puncture sites in patients with abdominal incisions (including previous laparoscopies) will reduce the possibility of bowel injury during initial puncture.10 A secondary advantage of these techniques is the ability to perform careful adhesiolysis under direct vision.

Laparoscopic surgery is no different from open surgery in that significant serosal injuries should be repaired. Full thickness injuries of the small bowel can be oversewn with different endoscopic techniques. Repair of small defects can be accomplished with the use of suture, linear GIA staplers, or with the use of certain versions of endoscopic hernia staples. Serosal tears or simple lacerations are easily repaired with seromuscular sutures of 3-0 polyglycolic acid or polydioxanone. Extracorporeal or intracorporeal knots can be used depending on intraoperative findings. Wedge resections of the bowel can be accomplished and subsequently repaired with interrupted sutures of 3-0 polyglycolic acid or polydioxanone. The Endo-GIA can be used with the triangulation technique to affect an anastomosis and can be applied perpendicularly to the long axis of the bowel to resect and repair segmental injuries without compromising the diameter of the bowel lumen. Small defects can also be repaired by careful approximation of the wound by using Ethicon Endo-hernia staples to close the seromuscular layer.

Repair of colorectal injuries remains more controversial.33,34 However, the trauma literature4,5,18,33 would argue strongly for primary closures of minor injuries or lacerations, particularly in
instances where minimal soiling of the peritoneum has occurred. Any questionable large bowel injury should be exteriorized or resected, and sound clinical judgment should prevail as to whether these injuries should be handled with open repair, the creation of a proximal colostomy, or both. Appropriate antibiotic coverage for gram-negative organisms and anaerobic bacteria should be administered.

**GENITOURINARY TRACT INJURIES**

Injuries to the genitourinary system frequently involve the bladder or ureters. Bladder lacerations may occur with the initial puncture or pelvic dissection, particularly in cases complicated by dense adhesions or previous radiation therapy. Bladder injuries related to the initial puncture can be prevented or minimized by routinely using Foley catheterization or ensuring that the patient has voided immediately prior to surgery. The bladder can be instilled with methylene blue or indigo carmine prior to the initial dissection as a means of distinguishing it during a complicated pelvic dissection. Bladder instillation can also be used after or during the dissection to visualize any evidence of leak or injury to the bladder because of surgical trauma. Minor injuries to the bladder can be handled with catheterization or with bladder closure and drainage. Simple lacerations should be closed with a single or double layer using a full thickness suture technique. Most urologists recommend that chromic suture or Monocryl (poliglecaprone) be used for urinary bladder repair because polyglycolic acid and other materials may act as a nidus for stone formation. Bladder injuries can be devastating if they are through and through or involve the trigone area. Cystoscopy may be necessary and should be considered if any question of such an injury exists.

Ureteral injuries are best avoided by locating the ureters prior to division of pelvic vessels or prior to mesenteric division during colectomy. The use of fiberoptic or other stents has been advocated by some surgeons in both open and laparoscopic procedures. Careful placement of surgical clips and suture ligatures will diminish the risk of injury. Simple lacerations of the ureter may be successfully managed with ureteral stenting. Segmental defects require urologic consultation and may require ureteroureterostomy or renal autotransplantation.

**RETROPERITONEAL INJURIES**

Injury to the retroperitoneum and its structures can result in significant morbidity or mortality, particularly if injury to these structures is unrecognized and not properly addressed. Many retroperitoneal injuries occur due to trocar insertion or traumatic insertion of other instrumentation. The careful placement of trocars and instruments in a controlled fashion and under direct vision will prevent the vast majority of these potentially lethal complications. As with open surgery, a suspected injury requires careful and meticulous control. The decision for conversion to an open procedure should be based on the type and location of the injury. A pelvic hematoma can be managed initially by packing or pressure application with fan-type retractors or the use of vaginal packing or gauze sponges. An expanding hematoma will require exploration. An apparently stable hematoma should be observed carefully as the abdomen is desufflated. Exploration, endoscopic ultrasonography, or angiography is warranted if the hematoma expands as the abdominal pressure returns to baseline. A similar strategy is useful for the management of hematomas at the root of the mesentery and in other areas. Blind suturing and mass ligature techniques should not be used under any circumstances. Injuries to the retroperitoneum in the area of the duodenum or pancreas deserve particular attention and should always be explored due to the significant mortality associ-
ated with untreated injuries to the duodenum and adjacent structures.

**ELECTROSURGICAL AND LASER INJURIES**

Injuries may occur from the use of electrosurgical or laser devices during minimally invasive surgical procedures. Many of these injuries can be prevented by meticulous technique and the careful application of these devices. The minimum amount of energy necessary to coagulate or cut should be used irrespective of the source of that energy. The entire active portion of the electrode or delivery instrument should be in clear view prior to the use of an electrosurgical or laser device. The instrument should not be in contact with any other structure than the desired target. Electrosurgical device injuries may occur as a result of insulation breakage and current leakage, direct coupling as current travels to or from the electrode to the laparoscope or other instruments, or capacitance coupling because the endoscopic instrument and metallic cannula store energy and function as a capacitor. Electrical energy may cause isolated tissues or tissues placed under tension to overheat and secondarily injure adjacent structures as electrical energy heats tissue with the greatest resistance to the flow of current to the grounding electrode. The instrument itself may remain hot for a brief time after current application, particularly after protracted use. Contact of adjacent tissues can produce a thermal burn under these circumstances. Bipolar instruments and the Harmonic scalpel are also capable of inflicting contact thermal burns to adjacent structures because these devices also become heated during prolonged use.

Laser devices of various types have been used for minimally invasive surgical procedures. These tools can be a valuable addition to the surgeon's armamentarium when plied by a skilled laparoscopist conversant with laser technology and its limitations. Both free-beam and fiberoptic applications are possible. For most surgeons, fiberoptic lasers are the simplest to master and apply. The surgeon should have a thorough understanding of the particular laser's wavelength and delivery system and carefully consider the depth of penetration, tissue effects, and visual appearance of the tissue after laser energy has been applied. Selection of the appropriate wavelength and delivery system is key to the safe and successful use of these technologies. The same basic care as is described for electrosurgical devices should be observed when using lasers. The surgeon should prevent inadvertent injury due to reflected or stray laser energy. This is accomplished by proper orientation of the device relative to the target, the use of optical backstops during dissection and careful retraction and displacement of adjacent structures. Contact laser devices convert light energy to heat and as such can cause thermal injury to adjacent tissues after the laser has been disengaged.

Injuries due to the use of electrosurgical devices, the Harmonic scalpel, or lasers should be treated aggressively if noted at the time of surgery. This is particularly important because the visible appearance of the lesion may grossly underestimate the full extent of injury and subsequent tissue necrosis. Serosal injuries should be oversewn. Unfortunately, injuries may only be recognized after tissue necrosis and perforation occur. A high index of suspicion should be raised in the postoperative patient who presents with severe or increasing discomfort, fever, or "ileus" after surgery. Prompt assessment and management of these complications are required in order to avert significant morbidity or mortality.

**BILIARY TRACT INJURIES**

Special mention of biliary tract injuries is necess-
sary. Laparoscopic cholecystectomy brought with it an increased incidence of injuries to the extrahepatic biliary tree, including segmental defects considered unique to laparoscopic cholecystectomy.38,57 Although many of these complications were thought to occur only during the "learning curve," any patient who presents with severe postoperative pain, ileus, or increased discomfort should be considered to have a bile duct injury or leak until proven otherwise.57,58,59 Diisopropyl iminodiacetic acid (DISIDA) scanning and endoscopic retrograde cholangiopancreatography (ERCP) can elucidate the presence of an injury or leak. Minor injuries or leaks can be managed with nasobiliary drainage. However, major injuries require operative repair. Definitive repair should be taken early. The surgeon should seek the assistance of surgeons conversant with biliary reconstruction techniques if he or she is not experienced in these techniques.

Way and colleagues57 analyzed the causes and prevention of laparoscopic bile duct injuries based on their review of 252 cases. They noted that the primary cause of error was visual perceptual error in 97% of the cases, with faulty technical skills accounting for the remaining 3% of injuries. These authors also found that only 25% of the injuries were recognized at the initial operation. More sobering was the fact that only 6% of the injuries were recognized early enough to limit further iatrogenic injury. A rather comprehensive list of rules of thumb is enumerated to help prevent these injuries from occurring.57

LIVER LACERATIONS

Liver lacerations can often be controlled with gentle pressure and patience.17,22,28 A fan retractor may be used to compress the parenchyma against the abdominal wall or back muscles. Hemostatic agents, such as Surgicel or Avitene, may be quite useful. Bleeding that persists following 5 to 10 minutes of compressions should be reassessed.36,43 Any specific bleeding point should be dealt with cautery, argon beam coagulator, laser, hemoclips, or suture ligation. Packing major injuries with omentum and drainage of the subhepatic and subphrenic spaces may be used to control major problems. However, major injuries should not be oversewn. The use of vaginal packing or Kerlix for temporary control of persistent bleeding from a large injury has its place when bleeding is ongoing.

INJURY OF FALLOPIAN TUBES, OVARIAS, OR UTERUS

Management of disease or injury to the fallopian tubes or ovaries should be assessed as to its severity and the likelihood of salvageability. Severe disease or injury will often require resection.14 The Endo-GIA and similar devices have made resection quite simple. Alternatively, the surgeon can use Endoloops or hemoclips for serial ligation of the vascular pedicle and control the fallopian tube at the level of the infundibulum. Great care must be taken to avoid iatrogenic injury to the ureters during dissection. Identification of the ureters prior to ligation or stapling is important. Minor injury or bleeding from the ovary can generally be controlled with compression, cautery, laser photocoagulation, or suture ligation. Simple perforation of the uterus can generally be managed conservatively as has been demonstrated in the literature on dilatation and curettage.9,18,21,25. Contiguous involvement of the uterus with tumor or disease may require hysterectomy. A variety of techniques for laparoscopic assisted vaginal hysterectomy (LAVH) have been described.9,25 The use of staplers has facilitated these procedures. Management of the vaginal cuff will depend on the clinical circumstances. However, the cuff may be oversewn with polyglycolic acid or chromic sutures or stapled with titanium or absorbable staples. To facilitate removal, the large uterus can be sectioned or morcellated and delivered vaginally or through a mini-laparotomy incision.
CONCLUSION

Knowledge of anatomy and strict attention to detail will prevent many complications. However, it must be recognized that anatomic conditions in vivo are rarely as depicted in textbooks. The keys to management of catastrophic or minor complications are careful, methodical assessment and appropriate action without panic. The surgeon should feel comfortable in converting an MIS procedure to an open one when necessary and should endeavor to cooperate with colleagues in the best interest of the patient.

References

Hernias as a Cause of Chronic Pelvic Pain in Women

C. Paul Perry, MD, Juan Diego Villegas Echeverri, MD

INTRODUCTION

Inguinal, abdominal, and pelvic floor fascial defects cause pain in many patients, male and female. Pain patterns are very specific to the location and hernia type. However, women are subject to delayed diagnosis and treatment because they may present to their gynecologists with chronic pelvic pain due to a condition formerly relegated to the discipline of general surgery. Physicians treating chronic pelvic pain patients should be knowledgeable in the diagnosis and surgical treatment of these women.

A hernia is an abnormal opening or defect through which organs or tissue may protrude. The actual mechanism by which these defects produce pain is debatable. Incarceration and ischemia notwithstanding, the majority of painful hernias produce pain by mechanical distortion transduced into an electrochemical impulse transmitted by peripheral nerves to the central nervous system where it is perceived.1 Symptoms produced by hernias are usually aching, sharp, shooting, and radiating. The location of the pain is specific for the location of the hernial defect and its neuralgia. Not all hernias are symptomatic. In one study, 4 of 54 (7%) inguinal hernias in women diagnosed laparoscopically were producing no symptoms.

Hernias are classified by anatomical location: ventral, inguinal, and pelvic floor. Ventral hernias can be either spontaneous or incisional. Midline, epigastric, and umbilical hernias are usually easy to detect. A Spigelian hernia is congenital and occurs at the lateral border of the rectus abdominis muscle and just below the semilunar line of the posterior rectus fascia. Pain and tenderness over the area may be accompanied by a palpable mass. Patients with symptomatic ventral hernias complain of sharp intermittent pain aggravated by activity and decreased by lying down. The tenderness on examination is exacerbated by having the patient raise her head. An incisional hernia is usually due to midline incisions, but may be due to a Pfannenstiel. Diagnosis of these transverse incisional hernias may be more difficult. Ilioinguinal neuralgia from entrapment will produce a similar history and physical findings.

Inguinal hernias are much more difficult to diagnose in women than in men. It is typical for women to have nonpalpable or occult inguinal hernias. These can only be adequately evaluated laparoscopically4,5 Diagnosis is suspected by pain distribution and tenderness over the internal ring. Symptoms include pain in the lower abdomen or groin when lifting, coughing, and sneezing with radiation into the labia majora and anterior thigh. The neurological nociceptors include the genital branch of the genitofemoral nerve, the ilioinguinal nerve, the femoral nerve, or all of these. Patients may have indirect, direct, femoral, or a combination of any of these three.

Indirect inguinal hernia is the most common hernia in women. It is congenital and due to nonclosure of the processus vaginalis. Tissue protrudes through the internal ring and passes down the inguinal canal a variable distance with the round ligament. Direct inguinal hernia is acquired and is the second most common inguinal hernia in women. Femoral hernias occur more commonly in women than in men. They are produced by a protrusion of preperitoneal fat or viscus through a weak transversalis fascia and into the femoral ring.
Pelvic floor hernias include sciatic, obturator, paravesical, and perineal. All pelvic floor hernias are more common in women due to the broader pelvic inlet and the stresses of pregnancy, labor, and delivery. Sciatic hernias result from the protrusion of a peritoneal sac through the greater or lesser sciatic foramen. These patients will have typical sciatica with a negative MRI for disk herniation. Findings at laparoscopy are a sac in the lateral pelvis that deviates the ureter medially toward or onto the uterosacral ligament. Ovarian incarceration can occur in these defects.

Obturator hernia results from a protrusion of preperitoneal fat or an intestinal loop through the obturator foramen alongside the obturator vessels and nerve. It is considered rare (0.07% of all hernias), but it may be the most common in the pelvic floor. These patients present with pain in their lower pelvis and inner thigh, which radiates into the hip and behind their knee. Pain increases when standing, lifting, and crossing the legs. Three types of obturator hernias are described based on the anatomical defect that is present. Type I occurs when preperitoneal fat and connective tissue (pilot tag) enter the pelvic orifice of the canal. Type II causes dimpling of the peritoneum over the canal leading to the formation of an empty peritoneal sac. Type III occurs on the entrance of an organ (bowel, ovary, or bladder) that eventually fails to reduce spontaneously. A small proportion of patients may present only with chronic pelvic pain and inner-thigh neuralgia. Diagnosis is made by vaginally palpating the obturator foramen reproducing the symptoms as a result of compression of the obturator nerve in its tunnel (Howship-Romberg sign).

A paravesical hernia may pass through the supravesical fossa of the anterior abdominal wall or into spaces around the urinary bladder. Increased lower pelvic pressure may be the only symptom. These hernias are easily diagnosed laparoscopically.

Perineal hernias are extremely rare and can be either anterior or posterior to the superficial transverse perineal muscle. They can be spontaneous or occur after abdominoperineal resection.

The treatment of chronic pelvic pain due to hernias is surgical. It can be performed by open or laparoscopic techniques. The laparoscopic approach is either transabdominal or extraperitoneal. We strongly favor the laparoscopic approach due to its minimally invasive nature and its diagnostic capabilities. For most patients with chronic pelvic pain, surgical trauma increases spinal cord upregulation and potentiates their associated neuropathies and reflex myalgias. Many patients will have multiple pain generators and the transabdominal approach allows concomitant diagnosis and surgical management. However, the technical ease and improved visibility of the extraperitoneal access to the obturator space makes this technique preferable for obturator hernia repairs.

Recently, our preference for laparoscopic treatment of inguinal hernias in women has been challenged by a large randomized, controlled study in male patients. By comparing recurrence and complication rates in open and laparoscopic repairs, the conclusion was that the open technique gives super-
rior results. The study did emphasize that the results are experience dependent. After a surgeon had performed a large number laparoscopically, there was no significant difference in recurrences or complications.

An issue not addressed by this study was the difference in patients with acute pain versus chronic pain. Chronic pain causes complex neuroplasticity, centralization, and neuroupregulation that may not be seen in the usual hernia patient. Most of our patients have multiple visceral pain generators in addition to hernias. These include endometriosis or ovarian and tubal pathologies, which require treatment along with their hernias. Therefore, this all-male study may have limited value for those who treat chronic pelvic pain in women.

To test our hypothesis that hernia pain could be effectively treated by laparoscopic repair in women with chronic pelvic pain, we undertook this retrospective study. An attempt was made to identify all pain generators preoperatively, visceral and somatic, and to specifically evaluate the surgical treatment outcomes based on that portion of the patient’s symptoms produced by the hernial defect. Alleviation of site-specific groin, sciatic, abdominal, and obturator pain was the end point for successful surgical treatment. Relief of concurrent dysmenorrhea, dyspareunia, pelvic floor tension myalgia, irritable bowel syndrome, vulvar vestibulitis, painful bladder, iliopsoas and quadratus lumborum muscle spasm, trigger points and a host of other pathologies were evaluated and treated independently as indicated.

METHODS

Our patient population comes from a referral-based practice dedicated to the diagnosis and treatment of chronic pelvic pain in women. All patients completed an extensive pelvic pain questionnaire designed to detect multiple pain generators both visceral and somatic. This instrument is available at the International Pelvic Pain Society website, www.pelvicpain.org. All previous operative reports were obtained and reviewed.

A detailed, pain-focused, physical examination was conducted including a careful search for hernial defects, which might be suspected from the patient’s history. Lower pelvic pain complaints were investigated by careful palpation of the internal rings for tenderness and impulse both lying and standing. Pain in the pelvis and medial thigh with referral to the hip and posterior knee had palpation of the obturator canals. Palpation of abdominal scars with and without head raising was routine. Sciatic hernias were suspected by the patient’s complaints of buttock pain referred down the posterior thigh in the absence of herniated disks.

Laparoscopic repairs were performed by the trans-abdominal preperitoneal technique, except for obturator hernias, which were done entirely extraperitoneally.Standard tension-free mesh techniques were used in all cases. All repairs were performed by the primary author. All 16 obturator hernia patients underwent bilateral repair. This was due to the high incidence of contralateral recurrence and the fibrosis from the initial repair limiting future access to the retropubic space in these patients.

RESULTS

From January 13, 1999, through December 17, 2003, 386 hernial defects were repaired by the primary author on 264 patients referred to a chronic pelvic pain program. The results are shown in Table 1.

### Table 1

<table>
<thead>
<tr>
<th>Hernia Type</th>
<th>Right Side</th>
<th>Left Side</th>
<th>Bilateral</th>
<th>No. of Hernias</th>
<th>Complications</th>
</tr>
</thead>
<tbody>
<tr>
<td>Indirect Inguinal</td>
<td>142</td>
<td>84</td>
<td>62</td>
<td>226</td>
<td>3*</td>
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<tr>
<td>Direct Inguinal</td>
<td>32</td>
<td>22</td>
<td>10</td>
<td>54</td>
<td></td>
</tr>
<tr>
<td>Femoral</td>
<td>22</td>
<td>8</td>
<td>6</td>
<td>30</td>
<td></td>
</tr>
<tr>
<td>Sciatic</td>
<td>26</td>
<td>7</td>
<td>6</td>
<td>33</td>
<td>1†</td>
</tr>
<tr>
<td>Obturator</td>
<td>32‡</td>
<td></td>
<td></td>
<td>16</td>
<td></td>
</tr>
<tr>
<td>Paravesical</td>
<td>1</td>
<td></td>
<td></td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Umbilical</td>
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<td></td>
<td></td>
<td>9</td>
<td></td>
</tr>
<tr>
<td>Incisional</td>
<td>17</td>
<td></td>
<td></td>
<td>17</td>
<td>1§</td>
</tr>
</tbody>
</table>

*One patient with persistent neuropathic pain from left inguinal hernia repair; one patient with postoperative bleeding managed conservatively; one patient with postoperative urinary retention from blood clot in catheter.
†Vaginotomy with repair.
‡All obturator hernias were bilateral repairs.
§One cystotomy with repair.
pelvic pain clinic. There have been no recurrences. Surgical results were excellent and complications were rare. Length of follow-up is 1.53 years (range, 2 months to 5.5 years). One patient (0.4%) with an inguinal hernia had persistent inguinal pain from an ilioinguinal neuropathy, and all other complications resulted from concomitant surgeries. Symptoms referable to their hernias resolved in 263 patients (99.6%). Other laparoscopic surgeries were performed at the same time as hernia repairs in 235 (90%) patients. Laparoscopic hysterectomy, excision of endometriosis, lysis of adhesions, uterine suspension, presacral neurectomy, and other procedures all had separate, but well-defined, potential pain relief benefits. Pain relief from the specific repaired hernial defects was easily discriminated. The pain produced by the hernia was the only symptom evaluated in this study. Four patients experienced complications from concomitant surgeries (1.5%) (Table 1).

Postoperatively, patients with persistent nonhernial pain (dyspareunia, dysmenorrhea, muscle spasms, and others) were treated in the recommended multidisciplinary fashion. Many continue to be followed in our clinic with the necessary pharmacological, physical, therapeutical, and psychological support. Their treatment is tailored to accomplish maximal reproductive and sexual function with minimal pain. While the percentage of patients requiring continued care was not calculated, all were more easily managed after surgical treatment and resolution of their hernia-generated pain components.

CONCLUSION

Hernias are responsible for chronic pelvic pain in some women. To obtain symptomatic relief, this diagnosis must not be missed by clinicians treating women with chronic pelvic pain. Hernias should be suspected by a thorough history and physical examination. They can be confirmed and treated laparoscopically along with other concomitant visceral pathologies. Laparoscopic treatment of these fascial defects has a low recurrence and complication rate in the hands of an experienced laparoscopist.


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References
INTRODUCTION

Endoscopic thyroidectomy has joined the ranks of surgical procedures being performed via a minimally invasive approach. Since its first reported performance in 1996, cervical minimally invasive procedures have been deemed safe and effective for treating benign thyroid and parathyroid disease. Endoscopic approach to the thyroid and parathyroid gland may be performed through a direct or indirect (remote) technique. The direct approach places the access ports within the cervical region and is considered the least invasive. The indirect approach provides access to the neck through a remote site from the target area. Though this approach provides superior cosmesis, it is the most invasive, requiring a relatively large working space to access the thyroid region.

Of the indirect procedures, the transaxillary technique approaches the gland from a remote lateral site to completely hide the surgical scars. Because this is a lateral approach, its primary application has historically been treatment of unilateral thyroid and parathyroid disease. In this study, we examined the safety and feasibility of the transaxillary technique to dissect and remove both sides of the thyroid gland in performing near total to total thyroidectomy for benign thyroid disease.

METHODS

From August 2003 to August 2005, we successfully performed endoscopic transaxillary thyroid and parathyroidectomy surgery for unilateral and parathyroid disease in 41 patients. In this study, we set out to explore the feasibility of an endoscopic transaxillary approach in performing near total to total thyroidectomy for benign thyroid disease. Before performing this technique in humans, technical and safety data confirming its feasibility were obtained in animal and human cadaver models. The challenge of this approach was the ability to visualize and safely dissect the contralateral lobe while adequately identifying and avoiding injury to the recurrent laryngeal nerve (RLN) and parathyroid glands.

In this study, 3 human cadaver models were initially used to validate the technical feasibility. Following affirmation of the technical feasibility of the procedure, we used the animal (pig) model for live tissue study before attempting it on a human patient. Technical feasibility was arbitrarily defined as the ability to adequately visualize the target gland and its adjacent vital structures (i.e., RLN, parathyroid glands, carotid artery, jugular vein, and others), the ability to safely dissect and mobilize, and the ability to complete the procedure within a time period commensurate with a learning curve model.

Cadaver Model Operative Technique

Three 5-mm incisions were made in the anterior axillary line beneath the pectoralis major muscle. Using two 2-mm Steinman pins, blunt dissection beneath the platysma and superior to the pectoralis major muscle was performed to develop the initial working space. The working space was insufflated with CO₂ insufflation of 10 mm Hg, and dissection of the connective tissue continued with the Harmonic scalpel and scissor cautery. The sternocleidomastoid muscle was identified, and the plane between the sternocleidomastoid and the sternohyoid muscle was dissected. After elevating the sternohyoid muscle, the sternothyroid muscle was visualized and retracted anteriorly exposing the ipsilateral thyroid gland. The inferior
pedicle was bluntly dissected while the RLN was identified. The vessels were then clipped and divided. Smaller vessels were divided by using the Harmonic scalpel (Ethicon Endo-Surgery, Cincinnati, OH) exposing the ligament of Berry. This ligament was divided to mobilize the gland and to allow exposure of the superior thyroid pedicle. The superior thyroid vessels were dissected, clipped, and divided from within the capsule of the gland. Dissection of the gland completely from the anterior trachea facilitated retraction of the gland medially exposing the contralateral side. Under direct visualization, the vessels of the contralateral inferior pole were dissected near the thyroid capsule, ligated, and divided. This maneuver allowed further medial and cephalad retraction of the thyroid gland. Using the 45-degree 5-mm endoscope, the contralateral RLN was identified. On the second cadaver, the nerve could not be adequately identified until the trocar housing the 5-mm 45-degree scope was placed medial to the anterior axillary line (Figure 1) on to the anterior chest wall location to thoroughly inspect the contralateral tracheoesophageal groove. Subsequently, the nerve and parathyroid glands were visualized by using this additional maneuver. After nerve and parathyroid identification, the Harmonic scalpel was used to dissect and transect the remainder of the thyroid gland up to the contralateral superior pole. Due to some difficulty exposing this portion of the gland, division of the sternothyroid muscle was necessary. After division of the superior pole, the total gland was extracted through an extended axillary incision.

Pig Model Operative Technique

The operative procedure was performed with the pig under general anesthesia. After positioning the animal to extend the neck, three 5-mm trocars were placed along the lateral chest wall near the axilla. Dissection along the anterior chest wall directed toward the animal’s cervical region was accomplished using the Harmonic scalpel. The sternocleidomastoid muscle and the thyroid gland were identified in the fashion previously described. After dissection of the ipsilateral gland, the opposite lobe was explored. The isthmus of the gland was grasped and dissected, freeing the posterior gland from the anterior surface of the trachea. Using gentle traction on the gland, the contralateral inferior lobe was retracted superiorly exposing the inferior vascular pedicle as it penetrated into the thyroid gland. Gentle dissection of the surrounding areolar tissue isolated the vessels that were clipped and divided. This increased the mobility of the gland and allowed further retraction of the gland superiorly and medially. The recurrent laryngeal nerve was now easily appreciated with the 5-mm 45-degree endoscope. Staying within the capsule of the gland, dissection of the middle thyroid vein was accomplished. The 5-mm Harmonic scalpel was used to dissect, clip, and divide smaller vessels to the thyroid. This maneuver allowed complete mobility of the gland exposing the superior thyroid pedicle. The superior vessels were then clipped and divided freeing the entire gland, all the while protecting the recurrent laryngeal nerve. The gland was removed through an extended lateral incision.

Human Patient Operative Technique

After IRB approval and informed patient consent, 3 female patients were selected for endoscopic near total thyroidectomy each with a history of enlarging multinodular goiter. All 3 patients had been followed on an average of 7 years (range, 4 to 19) with a history of a gradual increase in size of the gland before consideration for surgical extirpation. Average age in this group was 31 years (range, 18 to 61). Fine needle aspiration was...
performed in all patients. Preoperatively, no clinical or pathological evidence of malignancy was present.

The patient was placed on the operating table and general anesthesia was administered. The patient's arm was abducted at 90 degrees to the vertical axis of the body to expose the axilla (Figure 2). Three 5-mm incisions were made, and initial dissection of the working space was accomplished with blunt 3-mm Steinman pins beneath the platysma and anterior to the pectoralis major muscle. Three 5-mm trocars were placed through the incisions and directed towards the thyroid gland (Figure 3). Insufflation of CO₂ at an initial pressure of 7 mm Hg pressure was used to maintain the working space. Dissection was then carried out to reach the sternocleidomastoid muscle and thyroid gland.

The ipsilateral thyroid lobe was identified and mobilized. After mobilization of the isthmus from the anterior surface of the trachea, the gland was grasped and gently retracted anteromedially. This maneuver was facilitated by division of the sternothyroid muscle leaving the more superficial sternohyoid muscle intact. This allowed greater anterior retraction, exposing the contralateral inferior thyroid pole. Complete dissection of the junction between the thyroid capsule and the contralateral inferior thyroid vessels was accomplished. These vessels were then clipped and divided. Complete mobility of the gland was accomplished, and the contralateral superior thyroid pedicle was exposed (Figure 4). The superior vessels were then clipped and divided, freeing the entire gland while protecting the recurrent laryngeal nerve. The gland, completely detached, was placed in an Endocatch (Ethicon Endo-Surgery, Cincinnati, OH) retrieval bag and removed through an extended lateral incision within the axilla. The paratracheal spaces were inspected for hemostasis. A 7-mm Blake drain was placed within the thyroid bed and anterior chest wall, and brought out through one of the 5-mm axillary port sites (Figure 5).

RESULTS

Before initiating the present study, we successfully completed 32 unilateral thyroidectomy proce-
dures for benign thyroid disease by using an endoscopic transaxillary approach. The operative time for these procedures averaged 142 minutes (range, 57 to 327) and has remained relatively stable over the last 15 cases.

In the cadaver and pig models, optimal magnified visualization was achieved using the endoscopic approach. Although identification of the thyroid gland and adjacent vital structures was easier in the porcine model, the cadaver model more accurately represented the anatomy as seen in live patients. Dissection of the ipsilateral and contralateral thyroid lobes was accomplished with good visualization of the RLN and parathyroid glands. Combined operating times in both models averaged 112 minutes (range, 109 to 327). Following successful completion of total thyroidectomy using cadaver and live animal models, we proceeded to evaluate safety and efficacy in humans. In this clinical study, 3 live human subjects presented with a diffusely enlarged multinodular goiter that had clinically increased in size over the past year. All 3 patients had unilateral lobe sizes of 4 cm or less as determined by preoperative thyroid ultrasonography. Fine needle aspiration revealed benign colloid cells in all 3 individuals.

Upon operative dissection, as described above, we were successful at visualization of the ipsilateral thyroid gland in all models. Further dissection allowed clear visualization of the contralateral lobe and its adjacent major structures. The recurrent laryngeal nerve and parathyroid glands were clearly identified. The operative time for these patients averaged 128 minutes (range, 99 to 195) (Table 1). The axillary incision had to be extended to an average 35 mm (range, 18 to 49) to adequately extract the thyroid specimen. All incisions were covered with the subject's arm in the normal anatomic position (Figure 6). There were no injuries to the recurrent laryngeal nerve or parathyroid glands. Dissection in a parallel plane to the anterior axillary line and above the pectoralis major muscle avoided injury to other structures within the axilla, including the long thoracic, thoracodorsal, and brachial plexus nerves. There were no postoperative complications, such as bleeding or hoarseness, and no adverse sequelae of CO₂ insufflation. There were no postoperative complaints of dysphagia or stridor. All patients were discharged on postoperative day 2, and all drains were removed within 72 hours of surgery.

**DISCUSSION**

Endoscopic thyroidectomy provides a minimally invasive approach to the thyroid gland, resulting in improved visualization of anatomic structures for the surgeon and superior cosmetic results for the patient. The most commonly performed endoscopic approach places the trocars anteriorly within the neck region to directly access the thyroid. Though this direct approach has been shown to be the least invasive, the cosmetic results may prove less than optimal in patients with large thyroid lesions that require extension of the neck incision for extraction. Furthermore, if it becomes unsafe to proceed endoscopically using the direct approach (bleeding, poor visualization, and other complications), conversion to
the open approach would result in several visible neck incisions in addition to the open cervical incision, giving an unsatisfactory cosmetic outcome.

The endoscopic transaxillary approach conceals the incisions within the axilla, allowing removal of larger lesions without compromising cosmesis. The remote transaxillary technique provides access to the thyroid gland by subcutaneously traversing the chest wall via a lateral videoscopic approach avoiding any incision in the cervical area. Because of the amount of tissue dissected to reach the target area, this procedure is the most invasive of the minimal access techniques to the thyroid gland. Such an approach minimizes any perceived cosmetic deformity and possible anxiety concerning the cosmetic outcome of the surgery. Because there is no difference in hospital stay between this procedure and the direct cervical approach, and because postoperative pain may be increased with this maximally invasive technique, better cosmesis and possibly safer dissection through improved visualization may be the only perceived benefits of this particular approach. Although the endoscope provides excellent visualization and magnification, the unconventional approach from the lateral fields requires thorough knowledge of the anatomy in this area. This technique has been previously described for benign unilateral thyroid disease with safety and excellent cosmetic results. Although the transaxillary approach has been deemed safe and effective in patients with unilateral disease, its application in bilateral disease has not been explored. Possibly inadequate visualization of the contralateral anatomy, resulting in inadequate and precarious dissection, may be the reason.

CONCLUSION

Although endoscopic thyroid surgery has been shown to be safe and effective, its use remains limited. Advantages of this technique include superior visualization of local anatomy and improved cosmesis. Most endoscopic techniques that approach the gland from the anterior neck or chest surface limit the size of gland that can be removed to avoid unsatisfactory cosmetic results. A significant percentage of patients presenting with thyroid disorders will harbor multifocal disease that may require total or near total thyroidectomy. To date, this approach has not been studied for malignant disease of the thyroid gland and is therefore not recommended.

In our study, visualization of the recurrent laryngeal nerve and parathyroid glands was clear, detailed, and without doubt. For an endoscopic approach to be a viable alternative to open surgery, it should be a feasible approach for a majority of surgical diseases involving the thyroid gland. This study shows that endoscopic transaxillary thyroidectomy is safe and feasible in select patients with multifocal and bilateral thyroid disease. For select patients with multinodular goiters transaxillary thyroidectomy a useful and cosmetically superior alternative to open thyroidectomy.


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References
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Hit the beach for surfing, boogie boarding, and swimming (surfboards, boogie boards, kayaks, ocean rafts, snorkel sets, and umbrella-and-beach-chair sets can be rented on the beach). Outrigger canoes and catamarans offer rides from the beach. Catch an underwater discovery tour on the Atlantis Submarine from the Village’s pier. Skydiving, parasailing, helicopter/airplane sightseeing, and nature/wildlife tours are available in the area surrounding the hotel. Enjoy a game of golf or tennis, horseback riding, jet skiing, waterskiing, sailing, fishing, boating, snorkeling, scuba diving, and kayaking – all either on or nearby the resort’s property. Please make your reservations early!

CALL NOW AND MAKE YOUR RESERVATIONS

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

Designation
The SLS designates this educational activity for a maximum of 16.5 AMA PRA Category 1 Credits™. Physicians should only claim credit commensurate with the extent of their participation in the activity.

CONFERENCE FEES

SLS Members, Delegates & Organizing Committee: Register Online at www.SLS.org before December 6, 2007 and save an additional $100 on your conference registration!

<table>
<thead>
<tr>
<th>Membership Type</th>
<th>Fee</th>
</tr>
</thead>
<tbody>
<tr>
<td>Members</td>
<td>$595</td>
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<tr>
<td>Non-Members</td>
<td>$595</td>
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<tr>
<td>Delegates/Organizing Committee Members</td>
<td>$495</td>
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<tr>
<td>Resident/Nurse/Fellow</td>
<td>$695</td>
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</table>

### PRELIMINARY PROGRAM AGENDA

**WEDNESDAY, FEBRUARY 6, 2008**

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
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<tbody>
<tr>
<td>3:00 – 6:00pm</td>
<td>CONFERENCE REGISTRATION</td>
</tr>
<tr>
<td>6:00 – 7:00pm</td>
<td>OPENING CEREMONY AND WELCOME Paul Alan Wetter, MD, Chairman. Delegation Introductions: Organizing Committee Chairs, Cultural Presentations, Entertainment</td>
</tr>
<tr>
<td>7:00 – 8:00pm</td>
<td>WELCOME RECEPTION</td>
</tr>
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</table>

**THURSDAY, FEBRUARY 7, 2008**

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
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<tbody>
<tr>
<td>7:00 – 7:30am</td>
<td>CONTINENTAL BREAKFAST</td>
</tr>
<tr>
<td>7:30 – 7:45am</td>
<td>OPENING REMARKS Paul Alan Wetter, MD, Chairman</td>
</tr>
<tr>
<td>7:45 – 8:00am</td>
<td>MULTIDISCIPLINARY: Moderators: William E. Kelley, Jr, MD &amp; Elspeth M. McDougall, MD</td>
</tr>
<tr>
<td>8:00 – 8:15am</td>
<td>Understanding Endoscopic Anatomy of Inguinal Region, Parveen Bhatia, MD • India</td>
</tr>
<tr>
<td>8:15 – 8:30am</td>
<td>Minimally Invasive Surgery in the Developing World – Obstacles Encountered, Success Achieved, Racquel Bueno, MD • USA</td>
</tr>
<tr>
<td>8:30 – 8:45am</td>
<td>Cultural Presentation</td>
</tr>
<tr>
<td>9:00 – 9:15am</td>
<td>GENERAL SURGERY: Moderators: Michael S. Kavic, MD &amp; Raymond J. Lanzafame, MD, MBA</td>
</tr>
<tr>
<td>9:15 – 9:30am</td>
<td>Cultural Presentation</td>
</tr>
<tr>
<td>9:30 – 10:00am</td>
<td>HYSTERECTOMY: Moderators: Maurice K. Chung, MD &amp; Farr Niezat, MD</td>
</tr>
<tr>
<td>10:00 – 10:15am</td>
<td>Cultural Presentation</td>
</tr>
<tr>
<td>10:30 – 10:45am</td>
<td>NATURAL ORIFICE TRANSLUMENAL ENDOSCOPIC SURGERY: Moderators: Harrith M. Hasson, MD &amp; Michael S. Kavic, MD</td>
</tr>
<tr>
<td>11:15 – 12:00pm</td>
<td>LAPAROSCOPY IN CANCER: Moderators: Tommaso Falcone, MD &amp; Liselotte Mettler, Prof Dr Med</td>
</tr>
</tbody>
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**FRIDAY, FEBRUARY 8, 2008**

<table>
<thead>
<tr>
<th>Time</th>
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<tbody>
<tr>
<td>7:00 – 7:30am</td>
<td>CONTINENTAL BREAKFAST</td>
</tr>
<tr>
<td>7:30 – 7:45am</td>
<td>MULTIDISCIPLINARY: Moderators: Charles H. Koh, MD &amp; Elspeth M. McDougall, MD</td>
</tr>
<tr>
<td>7:45 – 8:00am</td>
<td>Laporoscopic Management of Pelvic Emergencies, Parveen Bhatia, MD • India</td>
</tr>
<tr>
<td>8:00 – 8:15am</td>
<td>Cultural Presentation</td>
</tr>
</tbody>
</table>

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*(program continued on page 30)*
<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
<th>Speaker(s)</th>
<th>Location(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>9:15 – 9:30am</td>
<td>Laparoscopic Repair of Morgagni Hernias in Adults, Atilla Cokmez, MD</td>
<td>Turkey</td>
<td></td>
</tr>
<tr>
<td>9:30 – 9:45am</td>
<td>Colorectal &amp; Hernia, Zameer Pasha, MD</td>
<td>India</td>
<td></td>
</tr>
<tr>
<td>9:45 – 10:00am</td>
<td>Laparoscopic Repair of Ventral Hernias, What We Have Learned From Our Initial Experience, Aslan Sakarya, MD</td>
<td>Turkey</td>
<td></td>
</tr>
<tr>
<td>10:00 – 10:15am</td>
<td>Laparoscopic Colorectal Resection for Malignancy: An evaluation of Oncologic Outcome, Wai Lun Law, MD</td>
<td>China</td>
<td></td>
</tr>
<tr>
<td>10:15 – 10:30am</td>
<td>BREAK</td>
<td></td>
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<tr>
<td>10:30 – 10:45am</td>
<td>Robotic/Laparoscopic Surgery in Korea—Prostate, KH Rha, MD</td>
<td>Korea</td>
<td></td>
</tr>
<tr>
<td>10:45 – 11:00am</td>
<td>Safety of Laparoscopic Cholecystectomy: 1. Bilary Imaging, 2. Robotic Surgery (Preliminary Experiment), Kunihiko Izuishi, MD</td>
<td>Japan</td>
<td></td>
</tr>
<tr>
<td>11:00 – 11:15am</td>
<td>DaVinci-Assisted Low Anterior Resection for Rectal Cancer, Seung Hyuk Baik, MD</td>
<td>Korea</td>
<td></td>
</tr>
<tr>
<td>11:15 – 11:30am</td>
<td>Newer Horizons in Laparoscopic Surgery, Parveen Bhatia, MD</td>
<td>India</td>
<td></td>
</tr>
<tr>
<td>11:30 – 11:45am</td>
<td>Pitfalls in Preoperative Evaluation &amp; General Anesthesia in Laparoscopy Patients, Alp Yentur, MD</td>
<td>Turkey</td>
<td></td>
</tr>
<tr>
<td>11:45 – 12:00pm</td>
<td>Cultural Presentation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>12:00 – 12:15pm</td>
<td>Strategies to Make Total Laparoscopic Hysterectomy Simple as well as Effective, Prashant Mangeshikar, MD</td>
<td>India</td>
<td></td>
</tr>
<tr>
<td>12:15 – 12:30pm</td>
<td>Need for Re-Classification or the Modification of Laparoscopic Hysterectomy, Paul I. Lee, MD</td>
<td>Korea</td>
<td></td>
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</tbody>
</table>

### Saturday, February 9, 2008

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
<th>Speaker(s)</th>
<th>Location(s)</th>
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<tbody>
<tr>
<td>7:00 – 7:30am</td>
<td>CONTINENTAL BREAKFAST</td>
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<td></td>
</tr>
<tr>
<td>7:30 – 7:45am</td>
<td>Bariatric Surgery in the Developing World, Racquel Bueno, MD</td>
<td>USA</td>
<td></td>
</tr>
<tr>
<td>7:45 – 8:00am</td>
<td>Obesity in the Asian Population, Racquel Bueno, MD</td>
<td>USA</td>
<td></td>
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<tr>
<td>8:00 – 8:15am</td>
<td>Cultural Presentation</td>
<td></td>
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<tr>
<td>8:15 – 8:30am</td>
<td>Laparoscopic Cholecystectomy in Tuberculosis of Abdomen, When to Operate? Venugopa Venkatesh, MD</td>
<td>India</td>
<td></td>
</tr>
<tr>
<td>8:30 – 8:45am</td>
<td>Laparoscopic Cholecystectomies in Patients Over 65 Years of Age, Aslan Sakarya, MD</td>
<td>Turkey</td>
<td></td>
</tr>
<tr>
<td>8:45 – 9:00am</td>
<td>Laparoscopic Liver Resections for the Lesions in the Different Locations, Ho-Seong Han, MD</td>
<td>Korea</td>
<td></td>
</tr>
<tr>
<td>9:00 – 9:15am</td>
<td>Cultural Presentation</td>
<td></td>
<td></td>
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<tr>
<td>9:15 – 9:30am</td>
<td>Endoscopic Breast Surgery—Scarless Excision, Brij Bhushan Agarwal, MD</td>
<td>India</td>
<td></td>
</tr>
<tr>
<td>9:30 – 9:45am</td>
<td>Who Should Be Doing Surgery in Pelvic Endometriosis? Is There a Need to Certify Such Surgeon? Paul I. Lee, MD</td>
<td>Korea</td>
<td></td>
</tr>
<tr>
<td>9:45 – 10:00am</td>
<td>Laparoscopy in Emergency Surgery, Venugopa Venkatesh, MD</td>
<td>India</td>
<td></td>
</tr>
<tr>
<td>10:00 – 10:15am</td>
<td>Management of the Surgical Center for Smooth Endoscopic Surgery and Efficient Use of Operative Rooms, Hisashi Usuki, MD</td>
<td>Japan</td>
<td></td>
</tr>
<tr>
<td>10:15 – 10:30am</td>
<td>Break</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10:30 – 10:45am</td>
<td>Laparoscopic Cholecystectomy Without Using Any Energy Source—Ensuring Better Results, Brij Bhushan Agarwal, MD</td>
<td>India</td>
<td></td>
</tr>
<tr>
<td>10:45 – 11:00am</td>
<td>Approach and Management of Bile Leaks After Laparoscopic Cholecystectomies, Atilla Cokmez, MD</td>
<td>Turkey</td>
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<tr>
<td>11:00 – 11:15am</td>
<td>Cultural Presentation</td>
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<tr>
<td>11:15 – 11:30am</td>
<td>Laparoscopic Salpingectomy for the Patients With Hydroosalpinx Before IVF, Erdal Akkan, MD</td>
<td>Turkey</td>
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</tr>
<tr>
<td>11:30 – 11:45am</td>
<td>Ten Years Review of Chronic Pelvic Pain Via Laparoscopy in Siriraj Hospital, Thailand, Pongsakdi Chaisilwattana, MD</td>
<td>Thailand</td>
<td></td>
</tr>
<tr>
<td>11:45 – 12:00pm</td>
<td>Laparoscopic Endometrioma Cystectomy Before IVF, Aygul Demir, MD</td>
<td>Turkey</td>
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<tr>
<td>12:00 – 12:15pm</td>
<td>Cultural Presentation</td>
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<tr>
<td>12:15 – 12:30pm</td>
<td>DELEGATES MEETING</td>
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</tbody>
</table>
WEBSURG.com has partnered with McMaster University to offer the opportunity to obtain up to 41 CME credits through videos, techniques, and lectures.

ISMICS.org, website of the International Society for Minimally Invasive Cardiothoracic Surgery, now offers highlights from the 2007 Annual Scientific Meeting. Archives and highlights featuring abstracts and video and audio presentations are available starting with the 2001 conference.

UROLOGYTIMES.com / CONTEMPgaryurology.com Always offering the latest in urology news, recent issues featured “Robotic Radical Prostatectomy Shows Good Oncologic, Functional Outcomes;” “Robotic Prostatectomy: Is It Fulfilling Expectations?;” and “Endoscopy May be Effective in Select TCC Patients.”

MEDPAGETODAY.com Use the sites RSS feeds to stay abreast of news across numerous specialties and to earn CME credits. Recently posted teaching briefs include “When a Robot Does Rounds Patients Get Faster Discharge,” “Bariatric Surgery Appears Safe for Selected Older Patients.” And, if you couldn’t make it to a conference in person or just couldn’t get to all the lectures on your hot topic of choice, take a look at the conference reports. From the ACS meeting to the World Transplant Congress, this site has it covered.

ASLMS.org, home of the American Society for Laser Medicine and Surgery, contains standards of practice, provides patient information and now allows site visitors to view annual meeting posters through the ImageStore for healthcare.

SLS.org / LAPAROSCOPYTODAY.com are your gateways to free access. Visit these sites to download the full text of all the articles published in JSLS, Journal of the Society of Laparoendoscopic Surgeons and Laparoscopy Today. SLS Annual Meeting and Multispecialty Summit information as well as the complete text of the first edition of Prevention and Management of Laparoendoscopic Surgical Complications are also available.

JOURNAL WATCH: PROTO
The Body in Pain. Gorman RM. Spring 2007:23-27 • Gorman points out that 10% of Americans suffers chronic pain lasting at least a year and that pain is the reason for 20% of doctor visits; but why is an ache to one person, complete agony to another, why does one type of analgesic work well for person A and offer no relief to person B? In an effort to come close to answering these questions, the author explores the role of genetics, explains the nature and types of pain, and gives readers an overview of how different types of drugs target pain.

JOURNAL WATCH: Minim Invasive Therapy
Minimally Invasive Therapy. Buess GF and Kanehira Eiji eds. 2007;16(2):75-126 • The issue focused on Microsystems in Medicine and included an overview of microtechnologies. Other articles included Microrobotics for Future Gastrointestinal Endoscopy, an article on MEMS for enhanced optical diagnostics, and MST development for medical application.

JOURNAL WATCH: Surg Endosc
Transvesical Thoracoscopy: A Natural Orifice Translumenal Endoscopic Approach for Thoracic Surgery. Lima E et al. Spring 2007;21(2):854-858 • After performing endoscopic transvesical diaphragmatic thoracoscopy with lung biopsy on six pigs, the authors concluded that the procedure is technically feasible in the porcine model. They note that more work and new instruments are needed before the procedure could be translated to humans.
Events Presented by the Society of Laparoendoscopic Surgeons

Hyatt Regency San Francisco.
San Francisco, California, USA

February 6–9, 2008 AsianAmerican MultiSpecialty Summit III Laparoscopy and Minimally Invasive Surgery.
Hilton Hawaiian Village Beach Resort and Spa. Honolulu, Hawaii, USA

Hyatt Regency McCormick Place.
Chicago, Illinois, USA

Disney's Contemporary Resort.
Orlando, Florida, USA

For more information about these and other upcoming events, visit www.Laparoscopy.org

OCTOBER 2007

4–7 Innovations or EBM in Urology. Hellenic Urological Association.
Athens, Greece

7–11 ACS 93rd Clinical Congress. American College of Surgeons.
New Orleans, Louisiana, USA

12–17 The ACG Annual Scientific Meeting and Postgraduate Course. American College of Gastroenterology.
Philadelphia, Pennsylvania, USA

Xian, China

20–Nov 3 25th World Congress of Endourology and SWL. Endourological Society.
Cancun, Mexico

24–27 70th Annual Colon and Rectal Surgery Conference. University of Minnesota Division of Colon and Rectal Surgery.
Minneapolis, Minnesota, USA

San Diego, California, USA

NOVEMBER 2007

8–11 The 2nd Asia Pacific Congress on Controversies in Obstetrics, Gynecology & Infertility. Comtechmed Medical Conferences.
Shanghai, China

15–17 Global Congress of Minimally Invasive Gynecology. AAGL 36th Annual Meeting. AAGL.
Washington, DC, USA

Houston, Texas, USA

Antalya, Turkey

DECEMBER 2007

8–10 9th International Workshop on Therapeutic Endoscopy. European Society of Gastrointestinal Endoscopy/American Society for Gastrointestinal Endoscopy.
Cairo, Egypt

JANUARY 2008

Rome, Italy

FEBRUARY 2008

6–9 AsianAmerican MultiSpecialty Summit III Laparoscopy and Minimally Invasive Surgery. Society of Laparoendoscopic Surgeons.
Honolulu, Hawaii, USA

Florida. Coral Gables, Florida, USA

MARCH 2008

11–14 10th World Congress on Endometriosis. World Endometriosis Society.
Melbourne, Australia

APRIL 2008

Philadelphia, Pennsylvania, USA

MAY 2008

New Orleans, Louisiana, USA

JUNE 2008

Bari, Italy

7–12 ASCRS Annual & Scientific Meeting. American Society of Colon & Rectal Surgeons (ASCRS).
Boston, Massachusetts, USA

SEPTEMBER 2008

12–16 ACS 94th Clinical Congress. American College of Surgeons.
San Francisco, California, USA

Las Vegas, Nevada, USA

OCTOBER 2008

Orlando, Florida, USA
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*

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

*When compared with LCSCS.

Now available for open and laparoscopic surgery