

A PRACTICAL MANUAL OF

LAPAROSCOPY

A Clinical Cookbook



Resad P. Pasic M.D. Ph.D.
Ronald L. Levine M.D.

A PRACTICAL MANUAL OF LAPAROSCOPY: A CLINICAL COOKBOOK

RESAD PASIC, M.D., PH.D.

Assistant Professor of Obstetrics, Gynecology & Women's Health
University of Louisville School of Medicine
Louisville, Kentucky

RONALD L. LEVINE, M.D.

Professor of Obstetrics, Gynecology & Women's Health
Director, Section of Operative Gynecologic Endoscopy
University of Louisville School of Medicine
Louisville, Kentucky



The Parthenon Publishing Group

International Publishers in Medicine, Science & Technology

A CRC PRESS COMPANY

BOCA RATON

LONDON

NEW YORK

WASHINGTON, D.C.

CONTRIBUTING AUTHORS

LEILA ADAMYAN, M.D.

Professor of Operative Gynecology
Scientific Ctr for OB/GYN & Perinatology
Moscow, Russia

JEFF W. ALLEN, M.D.

Assistant Professor of Surgery
University of Louisville School of Medicine
Louisville, Kentucky

BERND BOJAHR, M.D.

Department for Gynaecology and Obstetrics
University of Greifswald, Germany

ANDREW I. BRILL, M.D.

Professor and Chief, General Obstetrics and Gynecology
Department of Obstetrics and Gynecology
The University of Illinois at Chicago
College of Medicine
Chicago, Illinois

LAURA CLARK, M.D.

Associate Professor of Anesthesiology
University of Louisville School of Medicine
Louisville, Kentucky

EKATERINA L. IAROTSKAIA, M.D.

Scientific Center for Obstetrics & Gynecology
Moscow, Russia

MIROSLAV KOPJAR, M.D.

Department for Gynaecology and Obstetrics
General Hospital Zabok, Croatia

DANIEL KRUSCHINSKI, M.D.

Institute for Endoscopic Gynaecology
University of Witten/Herdecke, Germany

RONALD L. LEVINE, M.D.

Professor of Obstetrics, Gynecology & Women's Health
University of Louisville School of Medicine
Director, Section of Operative Gynecologic Endoscopy
Louisville, Kentucky

BARBARA LEVY, M.D., P.S.

Assistant Clinical Professor of Obstetrics & Gynecology
Yale University School of Medicine
University of Washington School of Medicine
Seattle, Washington

C. Y. LIU, M.D.

Director of Chattanooga Women's Laser Center
and Advanced Laparoscopic Surgeons of New York
Chattanooga, Tennessee

ANTHONY LUCIANO, M.D.

Professor of Obstetrics and Gynecology
University of Connecticut School of Medicine
Director, Center for Fertility & Reproductive
Endocrinology
New Britain General Hospital
New Britain, Connecticut

THOMAS L. LYONS, M.D.

Director of Health South Surgery Center
Center for Women's Care & Reproductive Surgery
Atlanta, Georgia

DAN MARTIN, M.D.

Associate Clinical Professor of Obstetrics and
Gynecology
University of Tennessee
Memphis, Tennessee

TIMOTHY B. MCKINNEY, M.D.

Clinical Associate Professor
University of Medicine and Dentistry of New Jersey-
SOM and University of Pennsylvania
Director of Urogynecology at Athena Women's Medical
Chief of Urogynecology and Pelvic Reconstructive
Surgery
Stratford, New Jersey

JOHN R. MIKLOS, M.D.

Director of Urogynecology
Atlanta Center for Laparoscopic Urogynecology &
Reconstructive Vaginal Surgery
Clinical Instructor
Medical College of Georgia
Atlanta, Georgia

CEANA NEZHAT, M.D.

Department of Obstetrics & Gynecology
Center for Special Pelvic Surgery
Atlanta, Georgia

FARR NEZHAT, M.D.

Director of Gynecologic Minimally Invasive Surgery
Department of Gynecologic Oncology
Mount Sinai School of Medicine
New York, NY

DAVID L. OLIVE, M.D.

Professor of Obstetrics and Gynecology
Director of Reproductive Endocrinology and Infertility
University of Wisconsin-Madison School of Medicine
Madison, Wisconsin

RESAD PASIC, M.D., PH.D.

Assistant Professor of Obstetrics, Gynecology &
Women's Health
University of Louisville School of Medicine
Louisville, Kentucky

TANJA PEJOVIC, M.D.

Department of Gynecologic Oncology
Yale University School of Medicine
New Haven, Connecticut

JOHN Y. PHELPS, M.D.

Assistant Clinical Professor of Obstetrics & Gynecology
Division of Reproductive Endocrinology & Infertility
University of Texas Medical Branch

JAY REDAN, M.D.

Attending Physician
St. Vincent's Hospital and Medical Center of New York
Community Medical Center
Scranton, Pennsylvania

HARRY REICH, M.D.

Attending Physician, Wyoming Valley Health Care
System
Wilkes-Barre, Pennsylvania
Community Medical Center, Scranton, Pennsylvania
St. Vincent's Hospital and Medical Center of New York
Lenox Hill, New York, NY

LISA M. ROBERTS, M.D.

Fellow
Advanced Gynecologic Endoscopic Surgery
Wilkes-Barre, Pennsylvania

ROBERT ROGERS, JR., M.D.

Attending Physician
The Reading Hospital & Medical Center
West Reading, Pennsylvania
Clinical Assistant Professor of Obstetrics and
Gynecology
University of Pennsylvania
Philadelphia, Pennsylvania

GERARD ROY, M.D.

Attending Physician
Clinical Instructor of Obstetrics and Gynecology
Center for Fertility and Women's Health
New Britain General Hospital
New Britain, Connecticut

BENJAMIN D. TANNER, M.D.

Surgical Resident
Department of Surgery
University of Louisville School of Medicine
Louisville, Kentucky

CLAIRE TEMPLEMAN, M.D.

Clinical Associate in Pediatric Gynecology & Endoscopy
Reproductive Specialty Center
Milwaukee, Wisconsin

PREFACE

Few fields in medicine have experienced as explosive an increase in knowledge and techniques as endoscopy, and, in particular, gynecologic laparoscopy. Just a few short years ago the formal teaching of laparoscopy in residency programs was virtually non-existent. Even today, the instruction in this modality of surgery is very inconsistent with the result that many gynecologists finish their training with only a minimal exposure to the multiple procedures that are not only acceptable now, but are rapidly becoming the standards of care. Indeed, many practicing gynecologists have had no additional training in current laparoscopic techniques.

As instructors in many postgraduate courses, both in the United States and in countries around the world, we have realized that, not only gynecologists in training, but also practicing physicians would benefit from an instructional book that utilized simplified illustrations to enhance their surgical knowledge. We believe that in combining the knowledge and experience of many of the leading laparoscopists with simplified, clear drawings to illustrate their written words, that we will add a significant contribution to the edification of both young and experienced gynecologic laparoscopists.

We wanted a book that was in the vein of a 'how to book' that would have material across the entire spectrum of operative laparoscopy. We thought that even the novice cook, to the most advanced gourmet chef, sometimes refer to a well written 'cook book'— hence the title.

With this in mind, we engaged the services of two graphic designers, Branko Modrakovic and Zvonimir Bebek to digitally create images that were submitted by the multiple authors, to a standard format used throughout the entire book. These digital drawings are clear and easily followed to supply the optimal information to the reader regarding the various procedures that are described. Mr. Modrakovic, a native of

Sarajevo, is well qualified to produce these drawings as he was the leading designer for the Sarajevo Olympics in 1984 and presently works on various designing projects in Washington, D.C. where he currently resides (artico99@msn.com). Mr. Zvonimir Bebek, is also a graphic designer from Sarajevo, and he worked as the graphic designer and technical editor for the book.

FOREWORD

Another book on laparoscopy? Do we truly need it? What is new and advanced that warrants a new book?

The combination of Dr. Resad Pasic, a well experienced laparoscopist and Dr. Ronald Levine, the American father of operative gynecologic laparoscopy, and teacher extraordinaire ensures a worthwhile book. They have produced a truly unique text.

They have brought together many of the leading laparoscopists in the world with a truly capable graphic artist to present to the reader an easily understandable series of chapters on the relevant significant endoscopic state of the art that are easily digestible.

The artist has taken many of the photographs from the contributors and has a continuous understandable sequence of techniques. The authors have produced the text that goes with the art. This proximity of subject to pictures makes it both easy to follow and to comprehend.

'University of Louisville duo' Drs. Pasic and Levine have certainly fulfilled the requirements for a new book.

Every active gynecologic endoscopist must have this book in his library available for references.

Jordan M. Phillips, M.D.

Founder

Emeritus Chairman of the AAGL

ACKNOWLEDGEMENTS

When planning this book, we assembled some of the most outstanding laparoscopists to contribute their expertise. We are extremely grateful for the time and energy expended by all of our chapter contributors, for without their dedication, knowledge and skill, this book would not have come to fruition.

This book would not be possible without the financial support and encouragement from some of the leaders in producing new and innovative instrumentation in the field of operative laparoscopy. Our sincere thanks go to:

ACMI Circon Corporation
Cook OB/GYN
Ethicon Endosurgery
Gynecare, A Division of Ethicon, Inc.
Karl Storz Endoscopy
Lexion Medical

We also have to thank our University and the Department of Obstetrics, Gynecology and Women's Health for their support and encouragement, for without an environment that provides an exceptional milieu for teaching, writing and research, this book would not be possible.

Last, but certainly not least, we must thank Ms. Leta Weedman who was our editorial assistant and Ms. Laura Lukat-Coffman who was our secretarial support, for their enthusiasm, patience and ideas in order to bring this book to its completion.

CONTENTS

| | |
|--|------|
| CONTRIBUTING AUTHORS | VI |
| PREFACE | VIII |
| FOREWORD | X |
| ACKNOWLEDGEMENTS | XI |
| Chapter 1 PATIENT PREPARATION | 1 |
| Chapter 2 PELVIC ANATOMY SEEN THROUGH THE LAPAROSCOPE | 7 |
| Chapter 3 INSTRUMENTATION AND EQUIPMENT | 19 |
| Chapter 4 ANESTHESIA IN LAPAROSCOPY | 37 |
| Chapter 5 CREATION OF PNEUMOPERITONEUM AND TROCAR INSERTION TECHNIQUES | 55 |
| Chapter 6 USING ELECTROSURGERY AND ULTRASONIC ENERGY DURING OPERATIVE LAPAROSCOPY | 73 |
| Chapter 7 ALL YOU NEED TO KNOW ABOUT LAPAROSCOPIC SUTURING | 95 |
| Chapter 8 LAPAROSCOPIC TUBAL STERILIZATION | 107 |
| Chapter 9 ENDOMETRIOSIS | 117 |
| Chapter 10 LAPAROSCOPIC SURGERY FOR ADHESIONS | 127 |
| Chapter 11 ECTOPIC PREGNANCY | 157 |

| | | |
|------------|--|------|
| Chapter 12 | ENDOSCOPIC SURGERY FOR CHRONIC PELVIC PAIN | .173 |
| Chapter 13 | EVALUATION AND MANAGEMENT OF ADNEXAL MASSES | .183 |
| Chapter 14 | LAPAROSCOPIC HYSTERECTOMY | .197 |
| Chapter 15 | LAPAROSCOPIC SUPRACERVICAL HYSTERECTOMY (LSH) | .211 |
| Chapter 16 | LAPAROSCOPIC MYOMECTOMY & LAPAROSCOPICALLY ASSISTED MYOMECTOMY | .225 |
| Chapter 17 | LAPAROSCOPIC TREATMENT OF STRESS URINE INCONTINENCE AND ANTERIOR VAGINAL WALL PROLAPSE | .233 |
| Chapter 18 | PELVIC FLOOR SURGERY | .241 |
| Chapter 19 | LAPAROSCOPIC PRESACRAL NEURECTOMY | .257 |
| Chapter 20 | LAPAROSCOPY IN PEDIATRIC PATIENTS | .263 |
| Chapter 21 | ENDOSCOPIC DIAGNOSIS AND CORRECTION OF MALFORMATIONS OF FEMALE GENITALIA | .271 |
| Chapter 22 | LAPAROSCOPIC BOWEL SURGERY | .291 |
| Chapter 23 | GASLESS LAPAROSCOPY | .303 |
| Chapter 24 | LAPAROSCOPIC LYMPHADENECTOMY IN GYNECOLOGIC ONCOLOGY | .319 |
| Chapter 25 | COMPLICATIONS OF LAPAROSCOPY | .329 |
| | INDEX | .345 |

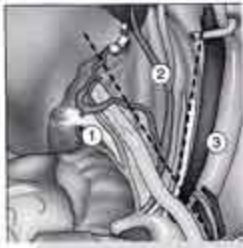
PATIENT PREPARATION



Ronald L. Levine, M.D.

Laparoscopic surgery, although minimally invasive, is and must always be considered as major surgery. Therefore, it is important to carefully prepare the patient for surgery, psychologically as well as physically. The surgeon must also be prepared by adequate training and practice in the techniques that will be necessary to complete the procedure in a safe and efficient manner. Patient preparation begins with the initial decision to perform laparoscopic surgery. Although it is tempting to convert most procedures to a minimally invasive route, the surgeon must consider if the particular pathology should be approached in this manner and is in the best interest of the patient. The surgeon must honestly evaluate his/her own ability and training.

PELVIC ANATOMY SEEN THROUGH THE LAPAROSCOPE



Robert M. Rogers, Jr., M.D.

For laparoscopists, female pelvic anatomy is that of surfaces and underlying abdominal and retroperitoneal structures. Surface landmarks on the anterior abdominal wall locate safe areas in which to pass laparoscopic trocars to establish ports through which laparoscopic instruments can be passed into the pelvic cavity to perform the planned surgery. Superficial peritoneal landmarks within the pelvis alert the operator to key anatomic structures in the retroperitoneal spaces. A sure knowledge of surgical and laparoscopic anatomy is a requisite for performing laparoscopic procedures that are safe for the patient and achieve the desired goal of the surgery. The three-dimensional field of pelvic anatomy as seen through the two-dimensional plane of the laparoscope is a difficult challenge to master. The diligent laparoscopic gynecologist must always study and then observe carefully in order to gain this sure, working knowledge. Just as technical

INSTRUMENTATION AND EQUIPMENT



Ronald L. Levine, M.D.

Many modern operating rooms have been designed to accommodate operative endoscopies; however, there are many variations depending upon the individual requirements of the operating surgeon. Herein we describe the general requirements of both the setup and the basic equipment that is necessary to perform safe and efficient gynecologic endoscopic surgery.

GENERAL ROOM SETUP

The setup should be designed to optimize efficiency using the team concept. The team usually consists of the surgeon, a first assistant, a scrub nurse and a circulating nurse. The most recent addition to the traditional team is the biomedical technician. He/she may not be required for the entire case, but it is helpful if they are in attendance at the start, as well as intermittently, and at the end of the case. The

ANESTHESIA IN LAPAROSCOPY



Laura Clark, M.D.

Many surgical procedures dictate the management of anesthesia. For example, in an abdominal aortic aneurysm repair, clamping of the aorta creates a significant impact on the inherent physiology of the individual patient in addition to their particular medical factors. The procedure of laparoscopy also creates its own subset of factors unique to the procedure itself. The impact of laparoscopy on the human body went relatively unnoticed in its infancy because the majority of cases initially were laparoscopic tubal sterilizations on young, healthy individuals.

Barring complications, these individuals could adjust quite well to the changes that occur during laparoscopy. Only when the technique expanded, both in use and type of operations, was the full impact apparent. Now laparoscopic operations are longer and the population

CREATION OF PNEUMOPERITONEUM AND TROCAR INSERTION TECHNIQUES

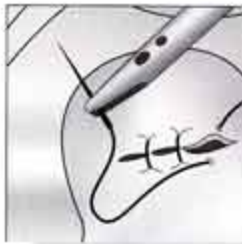


Resad Pasic M.D., Ph.D.

PATIENT POSITIONING AND PREPARATION

The patient is placed in a dorsolithotomy position with the buttocks extended over the end of the table. The thighs should be flexed (120°) to allow good instrument manipulation (Figure 1). Attention should be given to proper positioning of the patient's legs to avoid peroneal nerve injury during lengthy procedures. Shoulder braces may be used to make the steep Trendelenburg position possible during surgery. If shoulder braces are used they should be placed over the acromion to avoid possible brachial plexus injury. It is advisable that both arms should be tucked along the patient's body to prevent brachial plexus injury and provide more space for the surgeons. If electrosurgery is to be used during the procedure, a ground electrode for the unipolar instruments must be properly placed over the patient's thigh, and full surface contact of the electrode must be assured.

ALL YOU NEED TO KNOW ABOUT LAPAROSCOPIC SUTURING



Resad Pasic, M.D., Ph.D.

Why do laparoscopic surgeons avoid suturing?

The perception is that it is cumbersome to learn and perform.

Surgeons are unfamiliar with:

- principles of needle introduction,
- principles of needle positioning and suturing, and knot tying techniques.

As laparoscopic hysterectomies, bladder suspensions, pelvic wall reconstructions and other advanced endoscopic procedures are becoming the accepted method of treatment, there is an increasing need for laparoscopic suturing techniques. Laparoscopic ligation and suturing is used for approximation of tissue planes and effectively provides hemostasis and prevents bleeding in laparoscopic surgery.

LAPAROSCOPIC TUBAL STERILIZATION

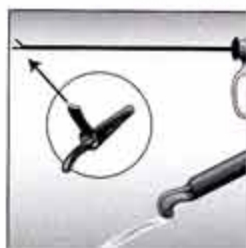


Ronald L. Levine, M.D.

Laparoscopic sterilization is the most common type of female sterilization surgery performed in the United States. There are essentially three major methods, however, occasionally a surgeon may still use thermal coagulation.

1. Electrosurgical:
 - a. Monopolar
 - b. Bipolar
2. Clips:
 - a. Hulka
 - b. Filshie
3. Bands (Fallope ring)
4. Thermal coagulation

ENDOMETRIOSIS



Dan Martin, M.D.

INTRODUCTION

Endometriosis presents in many fashions. Some of these are readily treated at laparoscopy while others may be better approached at laparotomy. The purpose of this chapter is to describe the recognition and treatment of those lesions which are most readily found at laparoscopy.

GOALS OF SURGERY

The type of surgery planned depends on the goals of treatment. For infertility, limited dissection and/or coagulation may help decrease adhesions. This may be better for fertility as it can cause fewer adhesions than extensive dissection. For pain, extensive dissection and complete removal of endometriosis appears to be a better approach for deep infiltration.

LAPAROSCOPIC SURGERY FOR ADHESIONS



Harry Reich, M.D.

Lisa M. Roberts, M.D.

Jay Redan, M.D.

INTRODUCTION

Postoperative adhesions occur after almost every abdominal surgery and are the leading cause of intestinal obstruction. In one study, 93% of patients who had undergone at least one previous open abdominal operation had post surgical adhesions. This was not considered surprising, given the extreme delicacy of the peritoneum and the fact that apposition of two injured surfaces nearly always results in adhesion formation.

Adhesions are the most common cause of bowel obstruction and most likely result from gynecologic procedures, appendectomies, trauma and other intestinal operations. Adhesions have also been proposed to cause infertility and abdominal and pelvic pain. Although nerve fibers have been confirmed in pelvic adhesions, their presence is not increased in those patients with pelvic pain. In addition, there

ECTOPIC PREGNANCY



Gerard Roy, M.D.

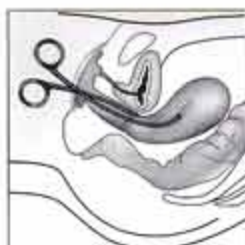
Anthony Luciano, M.D.

INTRODUCTION

Pregnancy outside the confines of the uterine cavity has been described for hundreds of years. In the 1800s, the mortality associated with ectopic pregnancy was $>60\%$. Today it accounts for 9% of pregnancy related mortality and less than 1% of overall mortality in women. Figure 1 depicts this data from 1970-92. Here we see a greater than 90% reduction in mortality despite more than a 5-fold increase in the overall incidence.

Although ectopic pregnancy has been recognized for over 400 years, it continues to be an ever-increasing affliction affecting greater than 2% of all pregnancies. The rising incidence of ectopic pregnancies in the past 25 years has been attributed to a number of different risk factors, listed in Table 1. Theoretically, anything that impedes migration of the conceptus to the uterine cavity may predispose a woman to

ENDOSCOPIC SURGERY FOR CHRONIC PELVIC PAIN



David L. Olive, M.D.

SUMMARY

Chronic pelvic pain should not be considered a primary surgical disease, but in some cases laparoscopic intervention may prove to be of value. Three procedures detailed here have some application to this problem; each can be helpful in specific instances where patients have been thoroughly evaluated and a number of diagnoses excluded. Thus, it is imprudent to think of these procedures as generalized approaches to the problem of chronic pelvic pain. Rather, these surgeries represent highly specialized techniques to combat specific pathologies.

A second aspect these three procedures share is a lack of proven efficacy. While all seem theoretically sound, only the laparoscopic uterosacral nerve ablation has undergone testing via randomized clinical trial, and even here the numbers are small and follow-up is brief. Before these procedures are adopted as routine, more rigorous testing and evaluation are clearly needed.

EVALUATION AND MANAGEMENT OF ADNEXAL MASSES



Resad Pasic, M.D., Ph.D.

It is estimated that 5–10% of women in the United States will undergo a surgical procedure for a suspected ovarian neoplasm during their lifetime, and 13–20% of these women will be diagnosed with an ovarian malignancy. The ultimate question when surgery is planned for an adnexal mass is whether the mass is benign or malignant? If the mass is benign, the laparoscopic approach is preferred. However, if there is suspicion of malignancy, other questions arise, such as:

1. What is the possibility that the entire mass can be removed laparoscopically without intraabdominal spillage?
2. If the spillage does occur, will it compromise the patient's survival?
3. If malignancy is discovered will it be possible to perform adequate surgical staging?

LAPAROSCOPIC HYSTERECTOMY

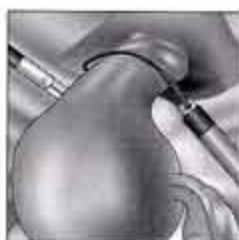


John Y. Phelps, M.D.

C. Y. Liu, M.D.

The advent of advanced laparoscopy has resulted in its frequent use to remove the uterus. The extent to which laparoscopy is used varies depending on the underlying pathology, uterine mobility, vaginal accessibility and the laparoscopic skills of the gynecologic surgeon. The laparoscopic approach is more commonly used to facilitate a vaginal hysterectomy. However, for the advanced laparoscopic surgeon, the uterus can be completely detached from its surrounding structures laparoscopically. In this chapter we will illustrate the various steps of hysterectomy using laparoscopy. We recommend the novice laparoscopic surgeon master the initial, more basic, steps of performing a hysterectomy laparoscopically prior to proceeding with the more advanced steps. Conversion to an abdominal hysterectomy should never be considered a complication; rather it is a prudent surgical decision when the surgeon becomes uncomfortable with the laparoscopic approach.

LAPAROSCOPIC SUPRACERVICAL HYSTERECTOMY (LSH)



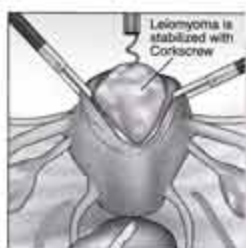
Thomas L. Lyons, M.D.

Hysterectomy is a very effective and efficient procedure with great benefit to those women requiring such surgery. All surgical procedures now in widespread use have undergone thorough clinical evaluation and meet the basic criteria required by ethical physicians for continued usage. As stated by Finley in 1943, hysterectomy must be used to:

1. Save life;
2. Correct deformity;
3. Eliminate suffering.

Historically, the procedure we now term hysterectomy dates only to the turn of the century when it was used predominately to treat large tumors of the uterus (usually fibroids) and catastrophic uterine bleeding. Most of these procedures were performed in a subtotal or supracervical manner and morbidity and mortality (M & M) were sig-

LAPAROSCOPIC MYOMECTOMY & LAPAROSCOPICALLY ASSISTED MYOMECTOMY



Ceana Nezhat, M.D.

Myomas are the most common uterine neoplasm, affecting 20–25% of women of reproductive age. Myomas develop from the benign transformation and proliferation of smooth muscle cells, and can develop in any area with smooth muscle cells of Müllerian origin. Uterine myomas can cause abnormal uterine bleeding, abdominal pressure, urinary frequency, and constipation. The severity of these symptoms is dependent on the number of tumors, their size, and location (Figure 1). Although not primarily the cause of infertility, myomas have been linked to fetal wastage and premature delivery. Indications for treatment are listed below. The number, size, and location of the tumors influence the technique used.

Preoperative evaluation should include assessment of anemia. The use of gonadotropin-releasing hormone (GnRH) is indicated for anemic

LAPAROSCOPIC TREATMENT OF STRESS URINE INCONTINENCE AND ANTERIOR VAGINAL WALL PROLAPSE



John R. Miklos, M.D.

Timothy B. McKinney, M.D.

INTRODUCTION

Since the introduction of the retropubic urethral suspension in 1910, over 100 different surgical techniques for the treatment of genuine stress urinary incontinence (GSUI) have been described. Many have been modifications of original procedures that attempt to improve clinical outcome, shorten operative time and/or reduce surgical morbidity. Despite the number of surgical procedures developed each year, the Burch colposuspension and pubovaginal sling operations have remained the mainstay of surgical correction for GSUI due to their high long-term cure rates. However, these procedures do not address the concurrent anterior vaginal wall prolapse often associated with GSUI secondary to urethral hypermobility. We use a laparoscopic approach to anterior vaginal wall reconstruction utilizing the paravaginal repair and Burch colposuspension for treatment of cystocele and stress urinary incontinence, respectively, due to lateral vaginal wall support defects.

PELVIC FLOOR SURGERY



Timothy B. McKinney, M.D.

John Miklos, M.D.

Throughout hundreds of years of the earliest writings on operative gynecology, the problems of pelvic support have always been referred to as pelvic relaxation. Over the past 25 years, we have witnessed a major shift in our understanding of the concepts of pelvic floor support. Defects in these supports leads to a relationship which, if re-established, will generate the normal anatomical support of the internal pelvic viscera. Terms such as generalized stretching and attenuation have been employed commonly in almost all descriptions. The consensus has been that to repair all support tissue, it was necessary to correct the generalized stretching by way of plicating, resecting or shortening these attenuated tissues. The true causes of genital urinary prolapse are failures of the fibromuscular support system to confine the visceral organs within the pelvic cavity. When this fibromuscular

LAPAROSCOPIC PRESACRAL NEURECTOMY



Ceana Nezhat, M.D.

In 1899, Jaboulay first described presacral neurectomy as the severance of sacral sympathetic afferent fibers using a posterior extraperitoneal approach. In the same year, Ruggi described resections of the utero-ovarian plexus. Leriche advocated periarterial sympathectomy of the internal iliac arteries. Perhaps the most fervent advocate of presacral neurectomy was Cotte, who in 1937 reported excellent results (98% success rate) after transection of the superior hypogastric plexus in 1500 patients. He emphasized that the only nerve tissue that should be resected is that within the interiliac triangle, and that resection of all nerve elements in the triangle is essential. Recent advances in endoscopic surgery have allowed surgeons to perform the technique via laparoscopy.

LAPAROSCOPY IN PEDIATRIC PATIENTS



Claire Templeman, M.D.

INTRODUCTION

In adults, laparoscopy is an established alternative to open surgery. However, concerns regarding proven benefit and adequate equipment have, until recently, limited its use in pediatric patients. The advent of microendoscopic equipment has made pediatric endoscopy more practical but there are some important technical differences between it and adult laparoscopy and they will be the focus of this chapter.

INDICATIONS

There is now considerable experience with laparoscopy for appendectomy, cholecystectomy, exploration of non-palpable testis and trauma in children. Some relevant indications for gynecologists who

ENDOSCOPIC DIAGNOSIS AND CORRECTION OF MALFORMATIONS OF FEMALE GENITALIA

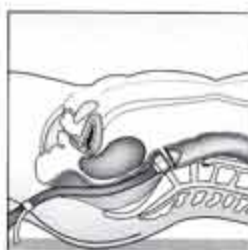


Leila V. Adamyan, M.D.

Ekaterina L. Iarotskaia, M.D

Congenital malformations of female genitalia comprise about 4% of all congenital anomalies. These malformations are associated with extragenital anomalies in about 74% of cases manifesting as skin marks and skeletal defects, as well as breast, heart, renal and digestive system anomalies. Diagnosis of malformations of the uterus, and/or vagina present significant difficulties that may confuse the character of the disease and cause incorrect, and sometimes, unwarranted or aggressive radical surgery in 24–34% of patients. The high rate of diagnostic mistakes may be due to absence of a universal classification of genital malformations. Suggested classifications do not reflect all clinical-anatomic features of malformations, which are essential for an optimal treatment strategy that will be beneficial for the patient's health, reproductive and sexual function, and general quality of life.

LAPAROSCOPIC BOWEL SURGERY



Jeff W. Allen, M.D.

Benjamin D. Tanner, M.D.

After mastering basic laparoscopic techniques such as tissue handling, intracorporeal suturing, and optical facility with 0° and 30° telescopes, operations that are more difficult can be performed using a minimal access approach. This includes many operations on the small and large bowel. This chapter will review some advanced laparoscopic procedures such as colon resection and also some of the problems encountered during operations such as closure of iatrogenic enterotomy.

COLON RESECTION

The laparoscopic approach to colon resection for benign disease is now preferred over the open operation in many circumstances. With malignant disease, there are unanswered issues of port site recurrences, inadequate oncologic resections, and intraperitoneal tumor spread with pneumoperitoneum. Benign diseases treated by laparoscopic partial colectomy include diverticular disease, some polyps, arterial venous mal-

GASLESS LAPAROSCOPY



Daniel Kruschinski, M.D.

Bernd Bojahr, M.D.

Miroslav Kopjar, M.D.

PREFACE

Gasless laparoscopy is a system that does not require a pneumoperitoneum. Instead, it uses an abdominal wall lifting system. One such system is the AbdoLift® (Karl Storz Endoscopy, Tuttlingen, Germany). With a special design of the retractors, the AbdoLift® mechanical elevation of the abdominal wall provides the surgeon with the necessary space comparable with that of pneumoperitoneum laparoscopy. As no gas is needed, flexible and valveless trocars can be used. This technique avoids several typical intraoperative problems of pneumoperitoneum laparoscopy such as gas leakage, rinsing and suction as well as removal of tumors and organs out of the abdominal cavity.

By utilizing conventional instruments and standard surgical techniques and avoiding disposables, gasless laparoscopy is a cost effective procedure with benefits for the patients, surgeons, hospitals, and the

LAPAROSCOPIC LYMPHADENECTOMY IN GYNECOLOGIC ONCOLOGY



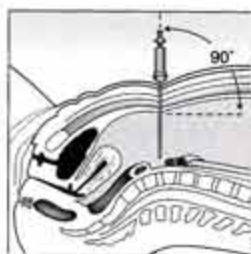
Farr Nezhat, M.D., FACOG

Tanja Pejovic, M.D.

In patients with gynecologic cancer, prognosis correlates with the extent of the disease according to the established FIGO classification systems. Surgical staging is superior because it provides histologic verification of tumor extent. Lymph node status is the most important prognostic factor in gynecologic cancer and surgical removal of pelvic and/or paraaortic lymph nodes for histologic assessment, is a part of staging of gynecologic malignancies. Additionally, removal of bulky lymph nodes may have therapeutic benefit.

Lymphadenectomy has generally been performed via laparotomy, leading to large incisions and significant intra- and perioperative morbidity. Dargent and Salvat were the first to describe laparoscopic lymphadenectomy for the management of gynecologic malignancies in 1989. In 1991, Querleu et al. reported transperitoneal pelvic lym-

COMPLICATIONS OF LAPAROSCOPY



Barbara Levy, M.D.

Complications are inherent in any surgical encounter. Unfortunately, the only way to avoid all complications is to become a writer or editor and never enter the operating room as either a surgeon or a patient. It is easy to write about those circumstances which tend to predispose to surgical mishaps, however, the art of surgery is a clinical one that requires acute attention to detail, a lot of practice and the experience to sense trouble before it happens. These are not things any of us can teach.

Successful surgical outcomes depend on the anatomy of the patient, the severity of the abnormality to be corrected, the overall health status of the patient, and most particularly, the goals established by surgeon