

Laparoscopic surgery for inguinal hernia: Current status and controversies

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Abstract

Repair of inguinal hernia is one of the commonest operations performed by surgeons around the world. The treatment of this common problem has seen an evolution from the pure tissue repairs to the prosthetic repairs and in the recent past to laparoscopic repair. The fact that so many hernia repairs are practiced is a testimony to the fact that probably none is distinctly superior to the other. This review assesses the current status of surgery for repair of inguinal hernia and examines the various controversial issues surrounding the subject.

Key words: Inguinal hernia, laparoscopic repair, open repair, totally extraperitoneal, transabdominal preperitoneal

The subject of repair of inguinal hernia has been full of controversy ever since Eduardo Bassini of Padua University described his method of repair in the manuscript 'Radical Cure of Inguinal Hernias' way back in 1887. The fact that more than a hundred repairs have been described for inguinal hernia and practiced at some time or the other over the past century are a testimony to the fact that none has been considered distinctly superior to the others. In recent years, however, the use of mesh for repair of inguinal hernia has become a norm. Reduction in the recurrence rate from more than 15% with tissue repairs to less than 1%, reduction in the postoperative pain and a shorter convalescence have all contributed to the popularity and widespread use of the tension-free mesh repairs. The laparoscopic repair of inguinal hernia, a relatively newer modality in the armamentarium of the surgeon, has been around only

for a little over a decade. Although perhaps not practiced as widely as laparoscopic cholecystectomy is for gallstone disease, laparoscopic repair of inguinal hernia has established its rightful place in the surgical practice. This review assesses the current status of groin hernia surgery (for repair of inguinal hernia in adults) and examines the various controversial issues surrounding the subject.

Evolution of laparoscopic hernia repair

Nyhus and Stoppa developed the concept of preperitoneal repair of inguinal hernia in an effort to reduce the high recurrence rates associated with the anterior repairs popular around that time - most of which in fact were tissue, as against, prosthetic repairs. Around the same time, Lichtenstein^[1] and others started performing anterior tension-free mesh repairs, also in an attempt to reduce the recurrence rate, postoperative pain and long convalescence associated with traditionally performed Bassini, Shouldice and McVay repairs. Ironically, Lichtenstein's concept of tension-free repair by routine implantation of a mesh, which was scathingly criticized as late as 1990,^[2] is today considered the 'gold standard' in the open treatment of groin hernias.

The laparoscopic repair of inguinal hernia was introduced in early 1990s. Unfortunately, the early attempts included procedures such as intraperitoneal onlay mesh repair and use of a small patches and plugs. These methods, which were in sharp contradiction to the well-founded principles of open tension-free repairs, resulted in an alarmingly high recurrence rates and were instant failures. These were

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Pradeep Chowbey



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Abdominal Wall Hernias Robert Bendavid, Jack Abrahamson, Maurice E. Arregui, Jean B. Flament, Edward H. Phillips, 2012-12-06 Abdominal Wall Hernias is the most up to date comprehensive reference on all aspects of hernia repair The editor a world renowned figure in hernia surgery has assembled a group of more than 120 experts from 16 countries to discuss state of the art approaches to conventional open repairs using both tissue to tissue techniques as well as the use of prosthetic mesh to the various minimally invasive approaches the repair of recurrent and massive hernias the pertinent anatomy basic science and emerging biomaterials The authors present the full spectrum of operations and procedures to enable the reader to gain a broad knowledge of the multifaceted repair of inguinal groin and femoral hernias and chose the best technique Richly illustrated with more than 700 line drawings and photographs this textbook is a must have reference for all practicing general surgeons and surgeons in training

Inguinal Hernia Maurice E. Arregui, Robert Nagan, 1994 Reviews current practice and future developments in the treatment options of inguinal hernia including laparoscopic repairs This text includes clinical and basic research as well as data from pioneering surgeons from Europe North and South America and Australia

Principles of Laparoscopic Surgery Maurice E. Arregui, Robert J. Jr. Fitzgibbons, Namir Katkhouda, J. Barry McKernan, Harry Reich, 2012-12-06 In the five years since laparoscopic methods have gained widespread use in general surgery a wealth of experience has accumulated The surgical pioneers who recognized the potential value of laparoscopy for treatment many years previously certainly deserve a great deal of credit for their farsightedness In a sense however the changes of the past few years amount to the development of a whole new branch of surgery The rate of change has produced an intense demand for the surgical community to gather structure and disseminate the newly acquired knowledge The safety and efficacy of this enormous shift in surgical practice hinges on this process In Principles of Laparoscopic Surgery the editors have asked a select group of expert surgeons to present what amounts to an encyclopedic account of current laparoscopic surgical practice The detailed but varying opinions on the management of gallbladder and complex pancreaticobiliary disease are unique to this volume Not only are varying surgical viewpoints presented but gastroenterologists and radiologists also describe alternative methods of management Because laparoscopic cholecystectomy is the most developed and most common procedure Chapters 11 and 12 give an especially detailed overview including clinical data to support each author's views The editors have also included information from related fields in evolution including minimally invasive urology gynecology and vascular and cardiovascular surgery Aiming to be comprehensive the coverage includes advances as well as basic instrumentation and techniques

Endoscopic Repair of Abdominal Wall Hernias (2nd Edn.) Pradeep Chowbey, 2012-11 Endoscopic Repair of Abdominal Wall Hernias crystallizes the enormous experience of a team of minimal access surgeons who are leaders in the field of laparoscopic hernia repair Written in an easy to read format this full colour book equips the general surgeon with do it yourself techniques using a step

by step approach to endoscopic repair of hernias of the groin and abdominal wall This edition has been revised and updated in view of the recognition accorded to herniology in the past decade The highlights of the book include A new simple and practical classification for abdominal wall hernias line diagrams as well as corresponding operative photographs to delineate the endoscopic anatomy innovations to reduce the cost of surgery anaesthetic implications for endohernia repair and sterilization techniques Inguinal Hernia Repair V. Schumpelick,G. E. Wantz,1995-03-09 **EAES Guidelines for**

Endoscopic Surgery Edmund A. M. Neugebauer,Stefan Sauerland,Abe Fingerhut,Bertrand Millat,Gerhard F.

Buess,2007-06-10 This book gathers recommendations of the European Association for Endoscopic Surgery EAES as compiled by leading European laparoscopic surgeons The book offers an overview of current surgical research All recommendations precisely describe the proven benefit of each surgical procedure and technique Chapters follow a structured format to allow quick identification of recommendations This work provides a highly usable and practice oriented overview of the achievements in laparoscopic surgery throughout the last decade *Incisional Hernia* Volker

Schumpelick,Andrew N Kingsnorth,2012-12-06 All general surgeons and especially hernia surgeons will benefit from this book It contains a complete update on the research and pathogenesis of the incisional hernia The volume describes all important diagnostic and therapeutic procedures and evaluates the appropriate use of each procedure for each particular case Pitfalls and unresolved issues are discussed in depth and experts of international standing weigh in on each topic

Essentials of Abdominal Wall Hernias V. K. Nigam,S. Nigam,2013-12-30 A concise comprehensive and up to date text on Abdominal Wall Hernias Over 700 colour diagrams and photographs Covers History taking Examination and Investigations Covers all the important aspects of Hernia i e Historical Background Embryology Anatomy Operative Procedures Possible Complications and other necessary topics Key points to remind you what is the most important point in the chapter Chapters Information Patients need from the Surgeon and Famous International Hernia Centers and Clinics give information about the latest treatment of Hernia Chapters Recent Advances and Modern Trends in Hernia Surgery Arguments Controversies and Discussions in Hernia surgery FAQs and MCQs are of immense value to the student as well as practicing surgeon Considerable stress is given to Anatomy especially in the chapters Various ligaments in relation to Groin Hernia Other Important Structures in Groin and Laparoscopic Groin Anatomy Both Open and Laparoscopic procedures for Abdominal Wall Hernias are described with essential steps and diagrams Chapters Difficulties in Hernia Surgery Important things to remember and Statistics of Hernia are important for the beginner and practicing surgeon Thought provoking Quotations and extensive References in each chapter **Mesher: Benefits and Risks** Volker Schumpelick,Lloyd M. Nyhus,2012-12-06 The 3rd Suvretta meeting in January 2003 was intended to give an overview of the of meshes in hernia operations After the first meeting in 1995 on Ingui current use nal Hernia and the second on Incisional Hernia in 1998 the current congress was focused on the benefits and risks of hernia meshes the reason being that meshes have more and more become the standard

in open as well as in laparoscopic hernia operations During the past 10 years new indications for the use of mesh as well as new types of mesh have been developed Considerable experience with meshes has been published in the literature including controlled trials of different results different techniques and last but not least case reports of complications We therefore felt it was timely and appropriate to hold a state of the art meeting on meshes used in hernia curative procedures During 3 intense working days which included presentations demonstrations and extensive discussions the current role and the future potential development of artificial mesh implants were discussed by both traditional and laparoscopic surgeons The most renowned hernia specialists of the world came together to discuss the use of meshes relating to construction material technique experimental studies and clinical results Each participant was invited to give a special talk on his favorite subject for discussion among the attending specialists

Operative Strategies in Laparoscopic Surgery Edward H. Phillips, Raul J. Rosenthal, 2012-12-06 Addressing young surgeons and surgical residents this text atlas gives a quick overview of how to perform advanced laparoscopic procedures The main steps of the operations are richly illustrated and the text provides detailed information on technical aspects of these procedures

General Surgery Kirby I. Bland, Michael G. Sarr, Markus W. Büchler, Attila Csendes, Oliver James Garden, John Wong, 2008-11-12 General Surgery Principles and International Practice is organized over two volumes into ten Sections each representing an important branch of surgical science Amply supported by line drawings and photographs algorithms and anatomical depictions it provides illustrative instructive and comprehensive coverage depicting the rationale for the basic operative principles mandated by state of the art surgical therapy

British Military and Naval Medicine, 1600-1830, 2015-06-29 Standing armies and navies brought with them military medical establishments shifting the focus of disease management from individuals to groups Prevention discipline and surveillance produced results and career opportunities for physicians and surgeons All these developments had an impact on medicine and society and were in turn influenced by them The essays within examine these phenomena exploring the imperial context nursing and medicine in Britain naval medicine as well as the relationship between medicine the state and society British Military and Naval Medicine challenges the notion that military medicine was in all respects a good thing The so called monopoly of military medicine and the authoritarian structures within the military were complex and at times successfully contested Sometimes changes were imposed that cannot be characterised as improvements British Military and Naval Medicine also points to opportunities for further research in this exciting field of study

Handbook of Reoperative General Surgery Mark P. Callery, 2008-04-15 The Handbook of Reoperative General Surgery offers a technical overview of one of surgery's greatest challenges reoperation Emphasizing the complications of each disease as well as reoperative procedures this indispensable text is extensively referenced with pertinent current and classical literature Organized primarily by body system the Handbook of Reoperative General Surgery covers the spectrum of conditions faced by general surgeons today including Diagnoses and operative strategy critical for breast cancer Coverage of reoperative of the liver

biliary tract and pancreas Approaches to dealing with reoperations on all areas of gastrointestinal tract Strategies for care of the patient with recurrent hernias and pain An overview of reoperative bariatric surgery Combining the expertise and advice of over thirty practicing surgeons from some of the finest medical centers in the United States the Handbook of Reoperative General Surgery offers a practical instructive manual for residents attending and surgery practitioners The Handbook of Reoperative General Surgery includes the essential information for dealing with the unusual complications of reoperation and provides a basis for innovation and insight usually required to achieve the best operative and perioperative care

Management of Abdominal Hernias Karl A. LeBlanc, Andrew Kingsnorth, David L. Sanders, 2018-04-16 The fifth edition of this well received book contains all the latest information on surgical techniques in abdominal hernia surgery and has been updated to reflect progress in robotic hernia surgery and minimally invasive approaches as well as new materials used such as fully resorbable synthetic meshes With chapters on management of complications and laparoscopic repair among others the book also contains newly added accounts of the Milos technique laparoscopic primary closure of defects and mesh For each of the surgical techniques described the reader will find information on pre and post operative management instructions on theatre set up and patient positioning an account of the incision and access as well as detailed operative steps and closure and finally tips and pitfalls From financial aspects to operative techniques and materials this book provides a very comprehensive account of abdominal hernia management Richly illustrated to demonstrate the surgical procedures in detail this book is written by a team of world leaders in herniology This is an indispensable guide to herniologists and hernia surgeons worldwide Principles and Practice of Geriatric Surgery Ronnie Ann Rosenthal, Michael E. Zenilman, Mark R. Katlic, 2011-07-12 In the preface to this impressive and well produced book the editors state that their aim is not to describe a new surgical specialty since most surgeons will soon need to be geriatric surgeons but to assemble a comprehensive account that will allow all providers of healthcare to the elderly to understand the issues involved in choosing surgery as a treatment option for their patients This is a useful book that deserves to do well I hope that the editors and their publisher will have the stamina to make this the first of several editions as it is clear that updated information about surgery in the elderly will be required to keep pace with this important field NEJM Book Review Laparo-endoscopic Hernia Surgery Reinhard Bittner, Ferdinand Köckerling, Robert J. Fitzgibbons, Jr., Karl A. LeBlanc, Sumeet K. Mittal, Pradeep Chowbey, 2018-06-25 This book is distinctive in that it focuses exclusively on current laparoscopic and endoscopic techniques for inguinal primary and incisional abdominal wall and hiatal hernias Individual steps in diagnosis and treatment are described by experts in the field but this clinical expertise is also integrated with the best available external evidence from systematic research as encapsulated in statements recommendations and guidelines The reader will thus not only learn how to perform techniques systematically and reproducibly but also come to understand which of the procedures have been scientifically validated by studies reviews and meta analyses and which have simply developed empirically The descriptions

of technique are supplemented by detailed guidance on such aspects as indications anesthesia aftercare and pain management and the prevention and management of complications Where appropriate careful comparisons are made of competing repair options including open techniques In summary this book will help practicing surgeons to standardize their operative technique so as to reflect current scientific knowledge and thereby improve the quality of laparoscopic endoscopic hernia surgery

Sabiston Textbook of Surgery Courtney M. Townsend Jr., R. Daniel Beauchamp, B. Mark Evers, Kenneth L. Mattox, 2007-11-21 This distinguished reference carries on a 70 year legacy as the world's most thorough useful readable and understandable text on the principles and techniques of surgery Its peerless contributors deliver all the well rounded state of the art knowledge you need to richly grasp the pathophysiology and optimal management of every surgical condition so you can make the best clinical decisions avoid complications manage unusual situations and achieve the best possible outcomes It is a valuable review tool for certification recertification preparation and an indispensable source of guidance on overcoming the challenges that arise in everyday practice As an Expert Consult title the thoroughly updated 18th edition comes with access to the complete contents online fully searchable enabling you to consult it rapidly from any computer with an Internet connection In addition this Premium Edition includes timely clinical updates online plus links to MEDLINE downloadable illustrations bonus journal articles review questions and much more Offers a more distinguished team of contributors and a better blend of clinical and basic science information than any other source providing you with the best possible understanding of the clinical issues surrounding every operative situation Features a more user friendly format a larger and more helpful array of full color illustrations and a more versatile and well constructed web site than other resources making the answers that you need easier to locate and understand quickly Offers an organization and content that parallels the written board American Board of Surgery exam providing excellent preparation for certification and recertification Includes access to the complete contents online fully searchable PLUS timely updates to reflect new scientific and clinical developments references linked to MEDLINE downloadable illustrations bonus articles from important surgery periodicals such as Surgical Clinics of North America the American Journal of Surgery Operative Techniques in General Surgery and Seminars in Colon and Rectal Surgery review questions and other valuable features Incorporates an enhanced emphasis on surgical outcomes to mirror the growing importance of this topic Delivers comprehensive updates to keep you current with the latest research techniques and emerging procedures in the field as well as completely new chapters on Surgical Patient Safety and Regenerative Medicine

Laparoscopic Surgery of the Abdomen Bruce V. MacFadyen, Jr., Maurice Arregui, Steve Eubanks, Douglas O. Olsen, Jeffrey H. Peters, Nathaniel J. Soper, Lee L. Swanstrom, Steven D. Wexner, 2006-06-02 An in depth analysis of the technical aspects of the most commonly performed laparoscopic procedures their indications contraindications and complications Heavily illustrated Laparoscopic Surgery of the Abdomen breaks new ground in visualising operative procedures and problems Seven sections comprising the core curriculum of accepted

procedures present gallbladder disease common bile duct exploration hernia colon diseases anti reflux procedures acute abdomen and the role of diagnostic laparoscopy and emerging procedures on the spleen and adrenals Recognised leaders in the field tackle each section emphasising what to do when and how to solve acute situations Gastrointestinal Surgery

Haile T. Debas, 2006-05-05 Gastrointestinal Surgery Pathophysiology and Management is an invaluable reference text for surgeons and surgical trainees Written entirely by Dr Haile T Debas Dean of School of Medicine and former Professor and Chairman Department of Surgery at the University of California San Francisco this book provides the unified approach only found in a single authored text Based on the three pillars of understanding particular disease processes fundamental anatomy and physiology pathophysiology and clinical correlations surgical treatment of GI disease is presented as the means to correct abnormal physiology and restore health Using an integrated approach of basic science and clinical practice Dr Debas allows the student of surgery to gain a solid understanding of disease processes that minimizes the need for rote memorization Thirteen lavishly illustrated chapters cover the GI system as well as gastrointestinal peptides and peptide secreting tumors abdominal trauma the abdominal wall surgery for morbid obesity the liver spleen retroperitoneum and perioperative care Dozens of summary tables throughout each chapter condense essentials for quick reference Comprehensive discussions of clinical disorders review the surgical treatment options With 400 illustrations and tables including hundreds of anatomical line drawings commissioned exclusively for this textbook Gastrointestinal Surgery provides a clinical and therapeutic approach to surgical diseases which will prove invaluable to the surgical trainee and the practitioner preparing for recertification *Problem-Based Anatomy E-Book* Craig A. Canby, 2005-11-23 This new text features a compilation of clinical cases that use a problem based approach to illustrate the clinical significance of the subdisciplines of anatomy Seven separate sections present anatomy in a regional format Each section contains several clinical cases that walk you through various patients presentation history and physical examination information laboratory and diagnostic test results diagnosis and treatment A series of related questions and accompanying answers follow each clinical scenario probing your understanding of the clinical issues relevant to that body region Features more than 80 clinical scenarios that promote interactive learning and build a foundation of knowledge for clinical practice Presents information in seven sections to correspond with a regional approach to anatomy head and neck back thorax pelvis and perineum upper extremity and lower extremity Covers the subdisciplines of anatomy including anatomic pathology cell biology embryology gross anatomy histology neuroanatomy and radiologic anatomy Includes references to Gray s Anatomy for Students and follows a parallel organization making it easy to use both books together

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