

SCHEIN'S COMMON SENSE EMERGENCY Abdominal Surgery

Fourth Edition



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Fourth Edition

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Editors' note

This book has been assembled — in pieces — during long years of intensive personal involvement, clinical and academic, urban and rural, with emergency abdominal surgery in South Africa, Israel, USA, UK, Australia, Finland, Nigeria, Kenya, Sudan, Pakistan, Thailand, Tuvalu and Australia.

A long line of good old friends from all around the world were helpful in generating this book and its three preceding editions. For the foundations in this noble surgical field Moshe is indebted to the late **George G. Decker** of Johannesburg. Drs. **Asher Hirshberg** and **Adam Klipfel** contributed to the *first edition*. Dr. **Robert Lane**, Ontario, Canada, helped us with all the previous editions. Professor **Ahmad Assalia** has been part of this book from its early days; he co-edited the *third edition* and continues to share with us his wisdom.

Dr. **Alfredo Sepulveda** of Santiago, Chile, edited the Spanish translation (*first edition*), Dr. **Francesco Vittorio Gammara** of Rome, Italy, edited the Italian translation (*second edition*), Professor **Wen-hao Tang**, China, edited the Mandarin translation (*third edition*), Drs. **Alexander Ferko**, **Leo Klein**, **Eduard Havel**, **Dušan Šimkovic**, **Karel Šmejkal**, Czech Republic, edited the Czech translation (*second edition*), Dr. **Wojciech Górecki**, Poland, edited the Polish translation (*third edition*), Dr. **Teimuraz Kemoklidze** and **Professor Merab Kiladze**, Georgia, edited the Georgian translation (*third edition*), Dr. **Slava Ryndine**, South Africa, helped to organize the Russian translation (*third edition*) and we will always remember with affection the late Professor **Boris Savchuk** of Moscow who edited the Russian translation (*first edition*).

We are grateful to the many members of **SURGINET**, who over the years have stimulated our brains with their constant international feedback. Thanks to Dr. **Evgeniy (Perya) Perelygin** who drew many new caricatures for this edition and to **Dan Schein** who painted the image on

the front cover.

Special thanks go to **Nikki Bramhill** who kindly agreed to produce this book which was previously published by Springer. Many of the aphorisms and quotations used to decorate this book were retrieved from *Aphorisms & Quotations for the Surgeon* (2002) and *A Companion to Aphorisms & Quotations for the Surgeon* (2008), edited by Moshe and published by Nikki Bramhill's tfm publishing Ltd, Shrewsbury, UK.

The reader will find that there are not a few duplications scattered throughout the book. We did this on purpose, as repetition of important points is crucial in adult education.

Any reader who has a question or a comment about anything to do with this book is invited to email any of us directly:

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We will reply!

Finally, we are indebted to our loving wives, Heidi, Jackie, Eija, Gilly, and Jami, for their patience and sacrifice.



The Editors.

Preface

Common things are common except common sense.

Yasser Mohsen

Common sense and a sense of humor are the same thing, moving at different speeds. A sense of humor is just common sense, dancing. Those who lack humor are without judgment and should be trusted with nothing.

Clive James

We are pleased to present the *fourth edition* of this book, which, since it first appeared 15 years ago, has become popular with surgeons having to deal with emergency abdominal surgery.

Is there anything new in this field that merits the revision and update of such a book every 4-5 years? Yes. The way we practice emergency surgery is constantly evolving. With almost unlimited access to abdominal imaging, we can rapidly pinpoint the diagnosis and avoid an unnecessary operation, or perform an indicated operation instead of engaging in a prolonged period of uncertainty. We are gradually becoming more selective and cautious — understanding that **everything we do involves wielding a double-edged sword and that in emergency surgery usually doing less is better but occasionally doing more may be life-saving. At least — this is what we will want you to believe after reading this book...**

At the same time, changes in surgical education combined with the exaggerated obsession with modern technology are producing a new generation of general surgeons. **In the new era super-specialization in ‘advanced lap’ procedures is considered profitable and ‘sexy’, whereas general surgical emergencies are left to the juniors or the allegedly ‘less talented’ surgeons.** So, while there are post-residency fellowships in various fields, no such training is deemed necessary for

emergency surgery — which is considered a ‘bastard’ field, which everybody can do... usually at the late hours when the ‘robots’ go to sleep.

In this brave new world we need to constantly updates ourselves. We have to relearn how to deal with the old s**t — which is becoming rare — even when its odor is masked by the perfume of modern practice. And this is what we continue to do in this new edition — reciting the written-in-stone sacred, old basics but also showing how to integrate them with the evolving modern world.

What is new in the fourth edition? We added three new co-editors: Ari from the University of Helsinki, Danny from the University of Tel Aviv and Jon from Johns Hopkins Hospital, Baltimore — Jon took it upon himself to rewrite all the colorectal chapters. All the contributors are well known to us personally as experts in their field. All existing chapters have been revised, expanded or rewritten by the old or new contributors and/or the Editors. Each chapter has been carefully scrutinized by us, its style and tone tuned to conform to the overall ‘voice’ of the book. We have eliminated chapters from this edition (e.g. complications of bariatric surgery) or subchapters (e.g. complications of cholecystectomy) in order not to duplicate contents from our other recent book — *Schein’s Common Sense Prevention and Management of Surgical Complications* (tfm publishing Ltd., UK 2013); **we believe that these two ‘twin’ books complement each other.**

From the beginning we knew that a book like this — written in a practical, colloquial, and direct in-your-face style will be either loved or hated. And indeed, a few reviewers (of the first edition) — appalled by dogmas that clashed with their own, and language not exactly conforming to Strunk and White’s *The Elements of Style* — almost killed it, but many more loved it.

Motivated by the enthusiasm with which the book is being received around the world — particularly among those practicing ‘real surgery’ in the ‘real world’ — we set about enhancing it to produce a text that should be palatable to all of you — wherever you try to save lives — be it in

Mumbai, Karachi, Cairo, Belgrade, Soweto, Mexico City, Kiev, Copenhagen, Philadelphia, Glasgow, Krakow and, yes — even in Paris (we hope there are a few French surgeons who can, and want to, read English...).

If you are a surgeon who practices the way he was trained 20 or 30 years ago you will hate this book; if you are being trained by such a surgeon then you desperately need to read this book.

Dr. Anton Chekhov said: “Doctors are just the same as lawyers; the only difference is that lawyers merely rob you, whereas doctors rob you and kill you, too.” Our chief aim in writing this book was to help you not kill your patients. This non-orthodox book is not yet another tedious, full-of-details textbook. We do not need more of these. It’s aimed at you, the young practicing surgeon who desires a focused and friendly approach to emergency abdominal surgery. We hope and believe that this modest book will be of some value to you.

André Maurois said: “In literature, as in love, we are astonished at what is chosen by others.” We hope you chose this book.

The Editors
Northern Wisconsin/Glasgow/Helsinki/Tel Aviv/Baltimore

Reviews of previous editions

“This is written with short punchy chapters making it a very difficult book to put down...”.

R. A. B. Wood
Journal of the Royal College of Surgeons of Edinburgh

“Since Mondor’s times in the forties of the last century there was no other book in surgery to be written so easy and witty ...”.

Boris D. Savchuk
World Journal of Surgery

“By the end I was a total enthusiast... this is a text like no other I read... Unreservedly recommended to old and young and alike.”

M. Winslet, Royal Free Hospital, London
Colorectal Disease

“The title describes this book perfectly. This is a no-nonsense approach to the sometimes very difficult situations in general surgery.... The authors describe their experiences in tough situations of patient care for residents and young attendings.... the historical quotes add a good amount of insight and interest. I have not come across another book like this.... Focused on the real situations that surgeons come across, the book answers the questions that are not addressed in the major textbooks.”

Robert A. Hanfland
Doody’s Review Service

“This book covers emergency abdominal surgery in a useful and interesting way. [It is] a small and handy book yet the coverage is wide. It would be of interest to any general surgeon and should certainly be read by surgical trainees. [It] allows mention of many things which would otherwise be excluded from a more rigidly structured work. I was also

glad to be reminded of many things which I had known but forgotten. The writers clearly know what they are talking about.”

David Evans
Annals of the Royal College of Surgeons of England

A sample of testimonials posted on amazon...

By Donald Dupuis, MD, Lahey Clinic

★★★★★ “A Must Have Book. I am about to end my chief year in general surgery residency — my copy of the first edition shows the wear of half a dozen total read throughs and probably hundreds of referencings. Newest edition is equally good. For the last 3 years I have given this book to our interns if they finish their surgical internship. And I’ve paid for this myself — if you know how little residents get paid you will know how important I think it is. If you are in surgical training **DO NOT WAIT ANOTHER DAY BEFORE YOU BUY THIS BOOK**. I do agree with another reviewer who thought a bit of cool surgical technique would have been good too. But, all in all, best, most useful little book on surgery ever. Nuff said.”

By Chet A. Morrison, Assistant Professor of Surgery, Director of Surgical Critical Care, Michigan State University

★★★★★ “A very useful practical guide. This is a fine book in the tradition of ‘guides to being on call’ — or maybe the ‘guide to the perplexed’. I like the straightforward get to the point style, and the directness of the book makes this a useful book to have handy when confronted with some of the emergency surgery problems. I would only say it could have had a bit more on surgical technique, and one or two references would have been useful (instead there was almost a militant insistence on as few as possible). But I would recommend it for any resident who is on call, and I find it useful as a staff surgeon as well.”

By K. M. Kemp

★★★★★ “Love it. I’m a big fan of this book, having just finished it a month ago. It’s a good mix of the author’s own experience as well as expert commentary when indicated. Compared to a textbook, it’s much more engaging and easier to read. Also compared to a text, it seems

much more practical in the advice it gives. As a brand new intern, I gleaned a lot from this book. Highly recommended for fellow trainees.”

By Jendri

★★★★★ **“A surgical must have.** This is a very well written and very practical guide to emergency surgery. It covers virtually all aspects of emergency general surgery and does it in a very interesting way. I think this is one of the best books on the subject. For me it certainly is a must have. In the next edition, probably the only thing that I would like to add to this book would be the information about the military uniform worn by Dr. Karl Schein on the photograph on one of the first pages. Dr. Schein is wearing a uniform of the 1st Polish Army formed in Soviet Union in 1943. Altogether a great book.”

By andreromeo

★★★★★ **“A must.** Dr. Moshe Schein has a very personal view about medicine and about the art of surgery, and that is why this book is really a must for clinicians and surgeons.”

By Andy

★★★★★ **“Simply perfect.** The best choice in surgery for trainees! It makes the more difficult surgery areas very easy to understand. I recommend it to all surgeons.”

By maxim

★★★★★ **“Worth every penny.** Invaluable as a guide to assist in the resolution of a broad range of abdominal problems. The book is well structured, running from opening chapters addressing pre-operative issues, and on through a pretty complete spectrum of gut complaints likely to arise in the real world, and how best to sort them out. It’s not only useful, but very well written, and, for a text book, an absolute pleasure to read. Short bite size chapters combined with the occasional cartoon make this 3rd edition of Schein well worth the investment. Blend with *Cope’s Diagnosis of the Acute Abdomen* for the ideal cocktail.”

By J. D. Wassner

★★★★★ **“Well-written, easy to read.** Should be required reading for any general surgery resident, & anyone who does acute care & trauma.”

PART I

General considerations

Chapter 1

General philosophy

Moshe Schein, Paul N. Rogers, Ari Leppäniemi, Danny Rosin and Jonathan E. Efron

Wisdom comes alone through suffering.

Aeschylus, Agamemnon

Good judgment comes from experience, experience comes from bad judgment.

Surgeons are internists who operate...

At this moment — just as you pick up this book and begin to browse through its pages — there are many thousands of surgeons around the world facing a patient with an abdominal catastrophe. The platform on which such an encounter occurs differs from place to place — a modern emergency department in London, a shabby casualty room in the Bronx, or a doctor's tent in the African bush. But the scene itself is amazingly uniform. It is always the same — you confronting a patient, he suffering, in pain, and anxious. And you are anxious as well: anxious about the diagnosis, concerned about choosing the best management, troubled about your own abilities to do what is correct.

We are in the 21st century but this universal scenario is not new. It is as old as surgery itself. **You are perhaps too young to know how little some things have changed — or how other things have changed, and not always for the better — over the years.** Yes, your hospital may be in the forefront of modern medicine; it has a team of subspecialists on

call to provide advice (it has an even larger administrative team of functionaries to monitor you...), its emergency room has standby, state-of-the-art spiral computed tomography and magnetic resonance imaging machines, but, practically, something has not changed: **it is the patient and you (often with the entire 'system' against you) — you who are duty bound to provide a correct management plan and execute it.** And it often feels lonely out there; even we, experienced old farts, can feel the loneliness.

The 'best' management of an abdominal emergency

It is useful to compare the emergency abdominal surgeon to an infantry soldier (■ Figure 1.1). Away from the limelight and glory that surrounds cardiac or neurological surgeons, emergency abdominal surgery is closer to infantry than it is to airborne action. **A war cannot be won by remote control with cruise missiles, or robots, but with infantry on the ground.** Likewise, technological gimmicks have a limited place in emergency abdominal surgery, which is the domain of the surgeon's brain and hands. **To achieve the final 'victory' someone has to agonize, sweat, bleed, and wet his hands — remember the bad smell from your hands after operating on a perforated colon?** Some readers may struggle with this military metaphor but the truth of the matter is that emergency abdominal surgery shares a few simple rules with infantry action — developed in the trenches and during offensives — rules that are the key to survival and victory (■ Table 1.1). Such a code of battle echoes the 'best' management of abdominal emergencies.



Figure 1.1. "Think as an infantry soldier..."

Table 1.1. The surgeon as an infantry soldier.

Rule	Infantry action	Emergency abdominal surgery
Rule 1	Destroy your enemy before he destroys you	Outmaneuver death (save a life)
Rule 2	Spare your own men	Reduce morbidity (Handle tissues gently)
Rule 3	Save ammunition	Use resources rationally (Every stitch must count)
Rule 4	Know your enemy	Estimate severity of disease (Think how organs and cells are doing)
Rule 5	Know your men	Understand the risk-benefit ratio of your therapy (Don't try to do too much in one operation, if the patient will not tolerate it)
Rule 6	Attack at 'soft' points	Tailor your management to the disease and the patient (Mild disease, definitive surgery; severe disease, damage control)
Rule 7	Do not call for air force support in a hand-to-hand battle	Do not adopt useless gimmicks — use your mind and hands (and sutures)
Rule 8	Conduct the battle from the front line — not from the rear	Do not take and accept decisions over the phone (When you are in charge, you are in charge)
Rule 9	Take advice from the generals but the decision is yours	Procure and use consultation from 'other specialties' selectively (If the consultant gives a wrong answer, change the consultant)
Rule 10	Avoid friendly fire	Reduce iatrogenesis (Don't overdo it)
Rule 11	Consider using the drones	Avoid suicidal missions (e.g. when interventional radiology can help you in difficult anatomic locations)
Rule 12	Maintain high morale among your troops	Be proud in providing the 'best' management (but give the anesthetists and nurses some credit)
Rule 13	Say "follow me!"	Lead by example!

There are many ways to skin a cat and you know from your various surgical mentors that different clinical pathways may arrive at a similar outcome. However, one of the diverse pathways is the ‘best’ — thus, the ‘correct’ one!

To be considered as such, the preferred pathway has to save life and decrease morbidity in the most efficient way. Look at the following example.

You can manage perforated acute appendicitis using two different pathways (👉 Chapter 23) — both leading to an eventual recovery and both considered absolutely appropriate (■ Table 1.2).

Table 1.2. Two management pathways for a young male with right lower quadrant peritonitis.		
Step	Pathway 1	Pathway 2
Step 1	CT scan	...no... (forget the debates for a moment...)
Step 2	Appendectomy for perforated acute appendicitis	Appendectomy for perforated acute appendicitis
Step 3	Peritoneal culture taken	...no...
Step 4	Peritoneal cavity irrigated	...only sucked out and mopped
Step 5	Wound left open	...wound sutured
Step 6	Drain left <i>in situ</i>	...no drain
Step 7	i.v. antibiotics until WBC normal	...i.v. antibiotics until patient tolerates oral diet... then home on oral antibiotics
Step 8	Secondary closure of wound	...wound completely healed

Both the above pathways are ‘OK’, right? Yes, but pathway 2 clearly is the ‘best’ one: safer, faster and cheaper.

Today many options exist to do almost anything. Any search on Google or PubMed will overwhelm you with papers that can justify almost any management pathway, with people practicing *surgical acrobatics* for the mere sake of doing so. Data and theory are everywhere: the sources are numerous but what you really need is *wisdom* — to enable you to apply correctly the knowledge you already have and constantly gather. And wisdom is what we are trying to provide. So please open your mind.

General philosophy (■ Figure 1.2)



Figure 1.2. “Each of us has a different ‘general philosophy’...”

“There is nothing new in the story...,” Winston Churchill said, “want of foresight, unwillingness to act when action would be simple and effective, lack of clear thinking, confusion of counsel until the emergency comes, until self-preservation strikes its jarring gong...”. How true is this Churchillian wisdom when applied to emergency surgery. How often do

we forget old — written in stone — principles while reinventing the wheel?

The ‘best’ management in each section of this book is based on the following elements.

- Old-established principles (don’t reinvent the wheel).
- Modern-scientific understanding of inflammation and infection.
- Evidence-based surgery (see below).
- Personal experience.

The inflamed patient

Think about your patient as being INFLAMED by myriad inflammatory mediators, generated by the primary disease process, whether inflammatory, infectious or traumatic — so if you measure C-reactive protein (CRP) in these patients, in most it will be elevated! Local inflammation (e.g. peritonitis) and *systemic inflammatory response syndromes* (SIRS) may lead to organ dysfunction or failure, and the eventual demise of your patient. **The greater the inflammation — the sicker the patient and the higher the expected morbidity and mortality.** Consider also that anything you do in attempting to halt your patient’s inflammation may in fact contribute to it — adding fuel to the inflammatory fire. Excessive surgery, inappropriately performed, and too late, just adds nails to your patient’s coffin. Remember also that SIRS is antagonized by the so-called compensatory anti-inflammatory response syndrome (CARS), mediated by anti-inflammatory cytokines, which in turn promotes immune suppression and facilitates infections that are so common after major operations and severe trauma (■ Figure 1.3).

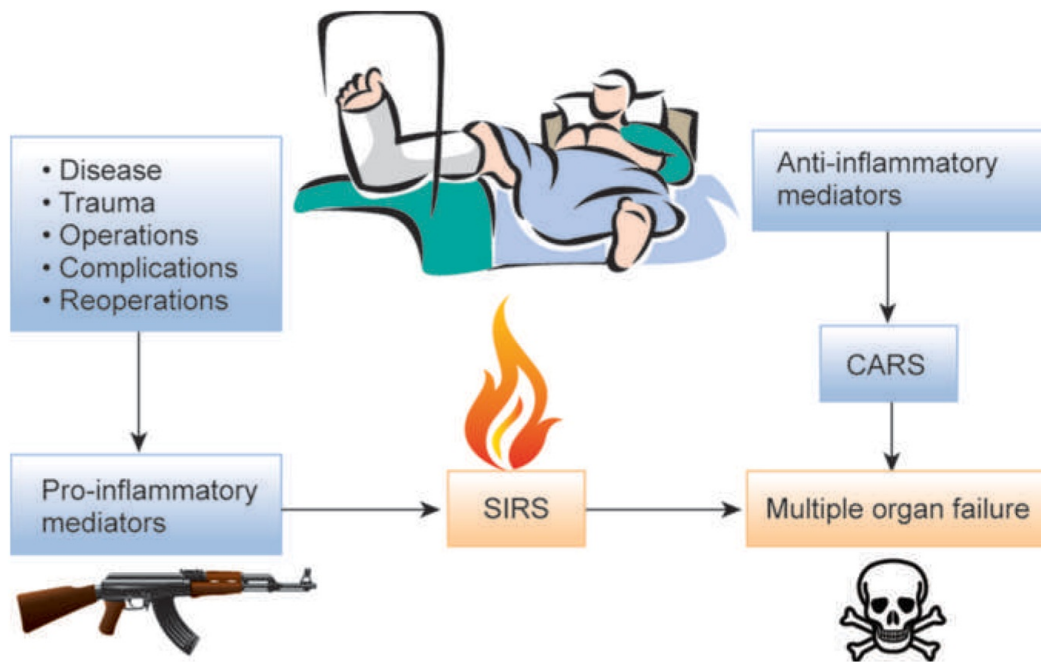


Figure 1.3. The inflamed surgical patient. SIRS = systemic inflammatory response syndrome; CARS = compensatory anti-inflammatory response syndrome. (Read the classic by the late Roger Bone: Bone RC. Sir Isaac Newton, sepsis, SIRS, and CARS. Crit Care Med 1996; 24: 1125-8.)

The philosophy of treatment that we propose maintains that in order to cure or minimize the inflammatory processes and the anti-inflammatory response, **management should be accurately tailored to the individual patient's disease; as the punishment fits the crime, so should the remedy fit the disease.** A well-trained foot soldier does not fire indiscriminately in all directions. These days he can summon the drones for a surgical strike!

Evidence

Economic considerations sometimes motivate the physicians to accept that part of the scientific evidence that best supports the method that gives him the most money.

George Crile

A few words about what we mean when we talk about 'evidence'. Many

formal classifications of scientific evidence are in circulation. Here is one version along with what some people think about it (■ Table 1.3).

Table 1.3. An example of a formal classification of scientific evidence.		
Level of evidence	Description	Comments
Ia	Evidence from meta-analysis of randomized controlled trials	<i>Meta-analysis is to analysis as metaphysics to physics. H. Harlan Stone</i>
Ib	Evidence from at least one randomized controlled trial	Is it really randomized? Sometimes it is hard to believe...
IIa	Evidence from at least one well-designed controlled trial which is not randomized	<i>Statistical numbers are like prisoners of war — torture them enough and they will admit to anything. Basil Pruitt</i>
IIb	Evidence from at least one well-designed experimental trial	<i>Hard to believe but humans are a little different from rats!</i>
III	Evidence from case, correlation, and comparative studies	<i>As a general rule, results of observational studies should be taken with a grain of salt. Otherwise, one might conclude that gray hair causes heart attacks. Edward H. Livingstone</i>
IV	Evidence from a panel of experts	<i>An expert surgeon: someone more than fifty miles from home with a Powerpoint presentation</i>

To the above ‘official’ classification we wish to add a few more categories frequently used by surgeons around the world.

■ V — “In my personal series of X patients (never published) there were no

complications.”

- VI — “I remember that case... forty years ago...”
- VII — “This is the way I do it and it is the best.”
- VIII — “My grandmother thinks this is a good idea.”

Note that level III retrospective case series form the main bulk of surgical literature dealing with abdominal emergencies, whereas levels V-VIII are the main forms of evidence used by surgeons in general — think about your own departmental meetings! And level VIII evidence may remind you of your chairman! To paraphrase a quote from *Memoirs of Hadrian* by Marguerite Yourcenar: **“In any combat between fanaticism (dogmatism) and common sense the latter has rarely the upper hand.”**

We want to show you that this is not always the case! You should educate yourself to think in terms of levels of evidence and resist local dogmas. We believe that support for much of what we write here is available in the published literature, but we choose not to cite it because it is not that kind of book. When high-level evidence is not available, we have to use an individual approach and common sense, and that is much of what this book is about.

Evidence is the base of medicine but common sense is the salt of it.

Slava Ryndine

The absence of evidence isn't the evidence of absence.

Henry Black

As far as the surgical literature goes, use the ‘Texas mockingbird approach’: eat everything in sight and vomit what you can't use.

Lew Flint

Remember: You can get away with a lot... but not always. Most patients treated

according to the above-mentioned pathway 1 will do just fine, but a few will not. The following pages will help you to develop your own judgment — pointing to the correct/preferred pathway in any situation. This is obviously not a bible but it is based on a thorough knowledge of the literature and vast personal experience. So wherever you are — in India, Pakistan, Norway, Chile, Botswana, Canada or Palestine, and whatever your resources are — the general approach to emergency abdominal surgery should be the same. So come and join us: to do it well, decrease morbidity, save lives, have fun — and attain glory!

“The glory of surgeons is like that of actors, which lasts only for their own lifetime and can no longer be appreciated once they have passed away. Actors and surgeons... are all heroes of the moment.”

Honoré de Balzac

“The operation is a silent confession to the surgeon’s inadequacy.”

John Hunter

Chapter 2

A brief history of emergency abdominal surgery

Harold Ellis

[We are proud to offer this chapter by Professor Ellis of London: a renowned surgeon, educator, writer, editor, anatomist, and surgical historian. Among his many books, we would particularly recommend *Operations That Made History* and *A Brief History of Surgery*. The Editors.]

In the study of some apparently new problems we often make progress by reading the work of the great men of the past.

Charles H. Mayo

From the earliest days until comparatively modern times, surgeons were ignorant about the causes of the vast majority of acute abdominal emergencies and equally ineffectual in their treatment. They were, of course, well familiar with abdominal trauma and the dire consequences of perforating injuries of the belly, the great majority of which would be fatal. Thus, in the Bible we read in the Book of Judges:

But Ehud made him a dagger, which had two edges of a cubit length, and he did gird it under the raiment of his right thigh. And he brought the present unto Eglon, King of Moab. And Eglon was a very fat man... And Ehud put forth his left hand and took the dagger from his right thigh, and thrust it into his belly. And the haft went in after the blade and the fat closed over the blade, so that he could not draw the blade out of his belly; and the dirt came out... And behold their

Lord was fallen down dead on the earth.

Occasionally, a fecal fistula would form, and the patient survived. That great 16th century French military surgeon, Ambroise Paré, recorded in his *Case Reports and Autopsy Records*:

In time I have treated several who recovered after having had wounds by sword or pistol pass through their bodies. One of these, in the town of Melun, was the steward of the Ambassador of the King of Portugal. He was thrust through with a sword, by which his intestines were wounded, so when he was dressed a great deal of fecal matter drained from the wound, yet the steward was cured.

Occasionally, a prolapsed loop of bowel, projecting through a lacerated abdominal wound, might be successfully reduced. Still less often, an enterprising surgeon might suture a laceration in such a loop and thus save the patient's life.

In 1676 Timothy Clark recorded the case of a butcher who attempted suicide with his butcher's knife in the village of Wayford in the country of Somerset, located in the southwest corner of England. Three days later, a surgeon who Clark does not name replaced the prolapsed gut, removed extruded omentum and prolapsed spleen and the patient recovered. Clark, himself, in 1633 had removed the spleen of a dog with survival, thus showing that the organ was not essential to life and confirming an observation made by Vesalius a century beforehand.

Strangulated hernias were also well known to ancients. Treatment usually consisted of forcible manipulative reduction, which was aided by hot baths, poultices, and the use of the head-down, feet-up position. Sometimes their efforts succeeded, but there was, of course, a dire risk of rupture of the gut, especially in advanced cases. William Cheselden in 1723 reported the case of a woman in her 73rd year with a strangulated umbilical hernia. At operation, he resected 26 inches of gangrenous intestine. She recovered with, of course, a persistent fecal fistula. The extreme danger of strangulated hernia is well demonstrated by the fact

that Queen Caroline, wife of George II of England, died of a strangulated umbilical hernia at the age of 55 in 1736.

Acute abdominal emergencies have no doubt affected humankind from its earliest existence, yet it has only been in comparatively recent times — the past couple of hundred years — that the pathology and then the treatment of these conditions were elucidated. This is because over many centuries post-mortem examinations were either forbidden or frowned upon in most societies. Operations on the abdomen were performed rarely, if at all, until the beginning of the 19th century. So, what Berkeley Moynihan called “the pathology of the living”, the pathology of the abdominal cavity as revealed in the operating theater, awaited to a large extent the development of anesthesia in the 1840s and antiseptic surgery in the 1870s.

Knowledge of the causes of the acute abdomen advanced little in the 2000 years following the days of Hippocrates in the 5th century BC. The Greek and Roman doctors were keen clinical observers. They recognized that, from time to time, a deep abdominal abscess might discharge spontaneously or be amenable to surgical drainage with recovery of the patient. Every other serious abdominal emergency was given the name of ‘ileus’ or ‘iliac passion’ and was considered to be due to obstruction of the bowels. Of course, the fatal abdominal emergencies they were seeing were indeed due either to mechanical obstruction or to the paralytic ileus of general peritonitis. Thus in Hippocrates we read:

In ileus the belly becomes hard, there are no motions, the whole abdomen is painful, there are fever and thirst and sometimes the patient is so tormented that he vomits bile... Medicines are not retained and enemas do not penetrate. It is an acute and dangerous disease.

Over the centuries there was little to offer the patient beyond poultices to the abdomen, cupping, bleeding, purgation and enemas, all of which probably did more harm than good. It was not until 1776 that William Cullen, of Edinburgh, coined the term ‘peritonitis’ for inflammation of the lining membrane of the abdominal cavity and its extensions to the viscera. However, he did not think the exact diagnosis of great importance since “when known, they do not require any remedies

besides those of inflammation in general”.

Appendicitis

Lorenz Heister, of Helmstadt in Brunswig, must be given credit for the first description of the appendix as the site of acute inflammation, reporting this at an autopsy in 1755. For more than a century after this there were occasional autopsy reports, but most cases were unrecognized or labelled ‘typhlitis’, ‘perityphlitis’ or ‘iliac passion’.

In 1848, Henry Hancock, of Charing Cross Hospital, London, reported the drainage of an appendix abscess in a young woman who was 8 months pregnant. She recovered, but in spite of Hancock’s plea, so fixed was the idea that it was useless to operate once peritonitis was established that his advice was ignored for some 40 years. Indeed, it was a physician, not a surgeon, who advised appendicectomy and early diagnosis. This was Reginald Fitz, Professor of Medicine at Harvard, who, in 1886, published a review of 257 cases, which clearly described the pathology and clinical features and advised removal of the acutely inflamed organ or, in the presence of an abscess, surgical drainage. Fitz’s advice was taken up rapidly in the United States. Thomas Morton of Philadelphia was the first to report, in 1887, the correct diagnosis and successful removal of a perforated appendix (although Robert Lawson Tait as early as 1880 had a similar case, he did not report this until 1890). The surge in early diagnosis and operative treatment was particularly pioneered by Charles McBurney of the Roosevelt Hospital, New York, who described ‘McBurney’s point’ and devised the muscle split incision, and J.B. Murphy of Chicago, who emphasized the shift in pain in ‘Murphy’s sequence’. In 1902, Fredrick Treves, of the London Hospital, drained the appendix abscess of King Edward VII, 2 days before the coronation, and did much to raise the general public’s awareness of the disease.

The ruptured spleen

The spleen is the most commonly injured viscus in closed abdominal trauma, yet there was surprising diffidence among the pioneer abdominal

surgeons to perform a splenectomy on these exsanguinating patients — in spite of the fact that Jules Péan of Paris had performed a successful splenectomy on a girl with a massive splenic cyst in 1867. Two unsuccessful attempts to save life in splenic rupture were reported in 1892 by Sir Arbuthnot Lane of Guy's Hospital, London, and three more fatal cases were recorded by Friedrich Trendelenburg in Leipzig the following year. The wording of these case reports strongly suggests that had blood transfusion been available, the patients might well have survived.

It fell to Oskar Riegner in Breslau to perform the first splenectomy for a pulped spleen with survival in 1893. The patient, a lad of 14, was found to have the spleen completely severed and there was 1.5L of blood in the abdomen. Normal saline was given subcutaneously into all four limbs. His recovery was complicated by gangrene of the left foot, which required amputation, but he left the hospital, complete with artificial limb, 5 months after his splenectomy.

Intestinal obstruction

Not surprisingly, early attempts to deal with large bowel obstruction (usually due to a left-sided colonic cancer) comprised performance of a colostomy. The first attempt to do this was made by Pillore of Rouen in 1776. He actually carried out a cecostomy on a wine merchant with gross abdominal distension due to a rectosigmoid growth. The operation produced great relief, but the patient died on the 28th day because of necrosis of a loop of jejunum, brought about by the large amounts of mercury given in the pre-operative attempts to overcome the obstruction. It remained for Pierre Fane of Geneva, in 1797, to perform a successful transverse colostomy. The patient, a lady of 63 with an obstructing sigmoid growth, died 14 weeks later with ascites.

Not until the introduction of anesthesia and antisepsis could routine resection of bowel cancers be performed, the first success in this era being reported by Vincent Czerny in Heidelberg in 1879. It was soon realized that resection of the obstructed colon was very likely to result in a fatal anastomotic leak. Exteriorization of the growth, with formation of a double-barrelled colostomy and its subsequent closure was introduced by

Frank Thomas Paul of Liverpool in 1895, and by Johannes von Mikulicz-Radecki of Breslau a little later. This procedure, the Paul-Mikulicz operation, was shown by the latter to reduce mortality in his own cases from 43% with primary resection to 12.5% with the exteriorization method.

With its vivid clinical features of intestinal obstruction in a baby, passage of redcurrant jelly stools, a palpable abdominal mass and sometimes a prolapsing mass to be felt per rectum or even seen to protrude through the anal verge, it is not surprising that intussusception in children was one of the earliest specific pathologies of the acute abdomen to be recognized. Treatment was expectant, with the use of enemas or rectal bougies, in attempts to reduce the mass. Surgeons were encouraged to do this by very occasional reports of success and still rarer accounts of recovery following the passage of the sloughed gangrenous bowel per rectum. The first operative success was reported by Sir Jonathan Hutchinson, of the London Hospital, in 1871. His patient, a girl aged 2, had her intussusception reduced through a short mid-line incision, the operation requiring just a few minutes. Hutchinson's meticulous report tabulated 131 previously recorded cases, which make sad reading indeed.

There was a downside to this new abdominal surgery. It was not long after this new era commenced that the first reports appeared of small bowel obstruction due to postoperative adhesions. Thomas Bryant of Guy's Hospital recorded the first example in 1872 — a fatal case following an ovariectomy. A second fatality, 4 years after removal of an ovarian mass, was reported in 1883 by William Battle of London. Today, postoperative adhesions and bands account for some three-quarters of all cases of small bowel obstructions in the Western World.

Perforated peptic ulcer

Untreated, a perforated peptic ulcer nearly always results in fatal peritonitis. Unsuccessful attempts at repair were made by Mikulicz-Radecki in 1884 and by Czerny in 1885 and subsequently by a number of other surgeons. This depressing series came to an end under most difficult circumstances. In 1892, Ludwig Heusner of Wuppertal, Germany,

repaired a perforated gastric ulcer high up on the lesser curve in a 41-year-old businessman with a 16-hour history; the operation was performed in the middle of the night by candlelight! The convalescence was complicated by a left-sided empyema, which required drainage. Two years later, Thomas Morse, in Norwich, published the successful repair of a perforation near the cardia in a girl of 20. With these two successes, operation for this condition became routine. Interestingly, gastric ulcer at the turn of the 20th century was far commoner than duodenal ulcer and was especially found in young women.

Ruptured ectopic pregnancy

Until 1883 a ruptured ectopic pregnancy was a death sentence. This is surprising because the early pioneers of abdominal surgery, going back to pre-anesthetic era, were, in the main, concerned with removal of ovarian masses. Indeed, the first elective abdominal operation for a known pathology was the removal of a massive ovarian cyst by Ephraim McDowell in Danville, Kentucky, in 1809. Yet, for some inexplicable reason, the surgeon would stand helplessly by the bedside and watch a young woman, in the most useful time of her existence, exsanguinate from her ruptured tube. The first surgeon to perform successful surgery in this condition was Robert Lawson Tait, of Birmingham, whom we have already mentioned performing a successful appendectomy in 1880. Tait was asked to see a girl with a ruptured ectopic pregnancy by Dr. Hallwright, a general practitioner. Hallwright suggested that Tait should remove the ruptured tube. Tait recorded the following:

The suggestion staggered me and I am afraid I did not receive it favourably. I declined to act and a further haemorrhage killed the patient. A post-mortem examination revealed the perfect accuracy of the diagnosis. I carefully inspected the specimen that was removed and found that if I had tied the broad ligament and removed the tube I should have completely arrested the haemorrhage, and I now believe that had I done this the patient's life would have been saved.

Eighteen months later, Tait operated on a clearly dying patient, the first occasion in which such an operation was performed. The patient, in those pre-transfusion days, died of exsanguination. Finally, in March

1888, Tait performed a successful salpingectomy on such a case, who survived even though, at operation, the abdomen was full of clot. Years later, he was able to report 39 cases, with but two deaths, including the first.

Envoi

Even today, the acute abdomen presents a diagnostic and therapeutic challenge to the surgeon. This is in spite of the fact that we have the ancillary aids of radiology and other imaging, biochemical and haematological studies to help the diagnosis and blood transfusion, fluid replacement, nasogastric suction, antibiotics and skilled anesthetists to assist with therapy.

The study of surgical history shows that, occasionally, like the frog — we go one step forward, two steps back... (■ Figure 2.1).

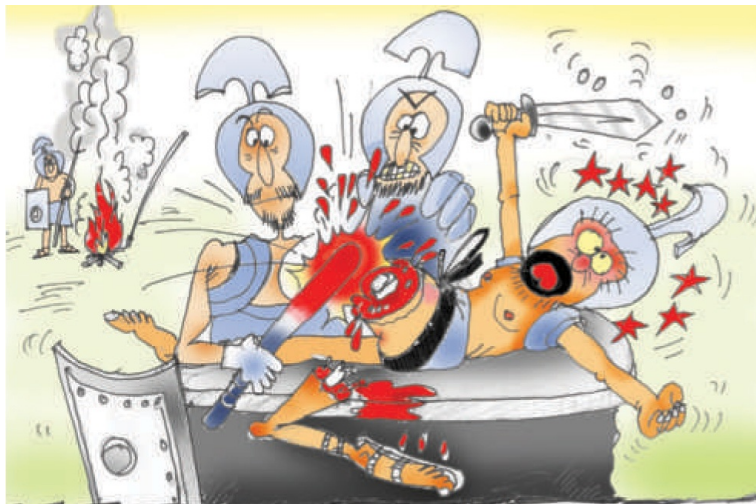




Figure 2.1. Great advance in surgery!

“Let us therefore look back with a mélange of amazement, pride, and humility at the efforts of our surgical forefathers as they paved the way for us in the management of this fascinating group of diseases!”

Harold Ellis