Abandoning bowel preparation for rectal surgery – are we attempting to square a circle?

To the Editor: In its infancy colorectal surgery was plagued by septic complications. These complications were ascribed to the presence of anaerobic bacteria in the colon and the disruptive effect of stool passing over the surgical anastomosis. A number of strategies evolved to reduce sepsis in colorectal surgery. These included oral bowel preparation to empty the colon, staged procedures for emergency colonic surgery, and mandatory colostomy for colonic trauma. Not all these strategies and postulates have withstand the test of time. The three-stage operation for colonic obstruction is a thing of the past, as is the routine use of a stoma for trauma. However pre-operative oral bowel preparation became and remained surgical dogma even though level one evidence to support its use was lacking.

There are a number of problems with oral bowel preparation. It may be poorly tolerated by patients and may contribute to electrolyte abnormalities. Incomplete or poor oral bowel preparation results in a distended colon full of liquid stool, which may leak and spill at operation. There has therefore been a move away from routine oral bowel preparation over the last decade. The proponents of this approach draw support from a number of trials of variable power and consistency as well as an increasing number of ever more strident meta-analyses.

There are, however, some points for concern in these reports. The reported operations are often a mixed bag and include right-sided and high left-sided colonic procedures. These anastomoses carry a low leak rate of less than 1%, and the weight of evidence is considerable that oral bowel preparation can be omitted in such cases. The same cannot be said for total mesorectal excision of the rectum. In this setting anastomotic leak remains a major concern. It is thought to be an ischaemic phenomenon and as such is generally expected even in specialised units to occur in 10% of patients. In the event of a clinical leak, the ensuing faecal peritonitis carries a high mortality rate. To reduce the severity of the sequelae of a leak, many surgeons routinely defunction their anastomosis proximally. This does not prevent an anastomotic leak, but it reduces the severity of the complication and by and large allows it to be managed non-operatively. If oral bowel preparation is not used, a column of stool will remain in the proximal colon, and in the event of a leak faecal contamination will take place.

This is the circle that we feel some authors are attempting to square. For example, in the report from Zmora and colleagues out of the total of 193 patients in their no-preparation group, only 41 (21%) underwent a low anterior resection. Furthermore they stated that they excluded all patients for anterior resection from their randomisation process if they needed a proximal stoma. Although Bucher et al. focused on left-sided colonic surgery in their prospective randomised study, they also excluded all patients who needed a protective covering stoma and in their no-bowel-preparation group they only included 13 (17%) low anterior resections. While there was a trend to a higher rate of anastomotic leakage in the bowel preparation group, this was not statistically significant and at no point did any of the differences in morbidity between the two groups reach statistical significance. Ram et al. randomised 185 patients to a no-bowel-preparation group. Once again only 20 (11%) underwent an anterior resection. They stated that low anterior resection should remain an indication for mechanical bowel preparation. A recent prospective study from Freemantle in Western Australia provides food for thought. These authors included a large proportion of low and ultra-low rectal resections and restorative proctocolectomies (30%) in their cohorts, and assessment was based on an intention to treat. They found that omitting formal oral bowel preparation resulted in a significantly higher incidence of clinically significant leaks that required re-operation. This would support our concern that a non-prepared colon results in a residual column of stool between the stoma and the anastomosis, so negating the beneficial effect of the stoma. As Platell and colleagues stated in their conclusion, ‘The presence of a high volume of faecal residue is likely to increase the chance of a clinically significant anastomotic leak that will require re-operation.’

We must disagree with our learned colleague when he states that bowel preparation can safely be omitted for all forms of colorectal surgery. We feel that oral bowel preparation is still necessary for a low rectal anastomosis. The evidence that rectal surgery without bowel preparation is safe is not adequate, and we continue to advocate mechanical bowel preparation for this type of procedure. This is the circle that we believe must be squared by the opponents of bowel preparation, before colorectal surgeons can abandon oral bowel preparation for rectal surgery. To do this will require carefully designed prospective studies that focus exclusively on the issue of bowel preparation in rectal surgery.

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Medicine and Surgery
An integrated textbook With STUDENT CONSULT online access

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Professor Oettle replies: I am delighted to publish this dissenting view. I would, however, pose the question that, in view of 11 completed randomised controlled trials (with a twelfth under way), which have consistently demonstrated harm from the practice of mechanical bowel preparation, just how much evidence do we need?

Book Reviews


The Surgical Clinics have an envied reputation for reliability and overview, and this issue is no exception. The editors explore the unique problems facing surgeons in making statistical analysis with the inherent variability of so much of surgical practice. Surgery's notoriously poor evidence base is not without excuse — reasons include the difficulty of obtaining equipoise before recruitment to a trial (since 'each patient is unique'), the near impossibility of binding either patient or surgeon to an operation, the fact that randomised trials work better for populations than for individual patients, and the lack of funding for clinical research in surgery. The situation has not been helped by surgeons' innate resistance to audit — as long ago as the 1890s, Codman, one of the founders of the American College of Surgeons, was ostracised by his colleagues at the Mass Gen for daring to try to use outcomes to improve surgical care! The history of surgery is littered with procedures that were developed and disseminated widely without rigorous trial, only to be shown later to be ineffective or even harmful. (A simple example is sclerotherapy of haemorrhoids — hallowed by generations of proctological conviction, and only shown to be worthless one and a half centuries after its introduction.)

A wide range of topics has been covered. The chapter entitled 'Knowledge Management' discusses the gap between what we know and what we do (and how to do something about it). And before we rush out and design another randomised controlled trial, remember that simply putting into practice what we presently know would have a greater impact on public and individual health than any foreseeable advance in the next few years. There is a chapter 'Appraising Evidence'. Despite being a core skill for any practitioner, appraisal evidence was scarcely considered to surgeons before the mid-1990s, and is a skill that needs to be acquired by all. The chapter contains a list of useful websites, as well as criteria for evaluating findings. Teaching these skills is complex, not least because the 'knowledge managers' (in some cases, 'electronic librarians') are often not the clinicians making decisions; the balmy days of browsing through paper journals are (sadly) almost gone. The importance of involving not only clinicians and librarians, but also management (to ensure that funding follows good practice) is emphasised, and should be encouraged as hospitals become more autonomous. South African readers will find some of the First-World examples disheartening — active involvement of health authorities with clinical staff to aid and improve access to electronic databases (e.g. the NHS's National Knowledge Service, which aims to 'support the delivery of high quality information for patients and staff') is no more than a pipe dream in most provincial hospitals.

For those unfamiliar with the workings of the Cochrane Collaboration, the discussion of Systematic Reviews will be enlightening (and worrying, as they realise the vast areas of still-unexamined surgical practice). Prospective audit of outcome (as well as evaluation of new technologies) is all part of evidence-based practice; surgeons will find ASERNIP (the Australian Safety and Efficacy Registry of New Interventional Procedures) particularly helpful, and references are given to their various systematic reviews.

Ethical issues are discussed thoroughly; the obverse of the dictum 'bad science is bad ethics' is that 'good ethics requires good facts'. In addition, informed consent implies information; we have a duty to help patients make decisions about surgical procedures by ensuring that they have the best evidence available to assist them, and not merely some half-baked website.

There is also a constant need to review conclusions based on apparently well-designed trials. I was cheered to learn that at least one-sixth of randomised controlled trials from the early 1990s have already been contradicted by subsequent investigations, and a further one-sixth have been shown to have exaggerated the benefit claimed.

No one would argue that there is not an 'inescapable and growing information problem'; an entire chapter is devoted to 'managing the evidence flood'. The authors warn that unless we focus some of our research and practice effort on better organising, filtering and using the information, the gap between what we know and what we do will continue to grow.

This is a singularly valuable and significant issue of the Surgical Clinics, of relevance to all surgeons, from registrar to reader, from the grammadoelas to Groote Schuur.

G. J. Oettle
Sabiston Textbook of Surgery, 17th edition

By Courtney M. Townsend, Jr.; R. Daniel Beauchamp; B. Mark Evers; and Kenneth L. Mattox.
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First published in 1936, the Sabiston Textbook has served generations of surgeons as the defining text in the field. The 17th Edition carries on this distinguished legacy, presenting the world's most thorough, useful, readable, and understandable coverage of the principles and techniques of surgery. Sweeping changes include comprehensive updates to reflect the latest knowledge and techniques...a new, full-color page layout for enhanced ease of reference... a new image bank CD-ROM containing over 1,300 illustrations, intraoperative photographs, tables, diagnostic images, graphs, pie charts, algorithms, and anatomical drawings all downloadable to Powerpoint presentations.

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Please note that prices are subject to change without notice due to fluctuations in the exchange rate and the industry!!!

This book provides a comprehensive account of current research and management practices related to pressure ulcers. The editors have gathered together international experts in various fields of ulcer research and produced 20 chapters of detailed analysis of current shortcomings and future prospects improved treatment and prevention of pressure ulcers.

Interesting perspectives and frightening statistics relate to the cost analysis. It is estimated that the Netherlands, with a population of 16 million, spends approximately 600 million Euros (billions of dollars in the US) on the prevention and treatment of pressure ulcers. Of major concern is the increased litigation occurring in relation to this problem, particularly in the elderly.

This book highlights the fact that much research and verification is needed in the areas of interface pressure measurement using technologically advanced sensors, the adequate development of models on which to base research outcomes, particularly at a microscopic level, and the adaptation of biochemical, pharmacological and technological advances to improve monitoring and prevention of pressure ulcers. These areas are comprehensively covered in the book.

It is apparent from the in-depth descriptions of pathophysiological changes and biochemical analysis relating to pressure ulcer formation that although much understanding of the mechanisms of ulcer formation is clear, we desperately need improvements in prevention and monitoring.

This book constitutes a major advance in the first step of documentation and summary of the current status of a problem that is likely to escalate in terms of cost and litigation. It is a must for all those directly involved in the field.

Alan D. Widgerow


This delightfully named book is a compilation from Major Pitt’s notes made during his posting as a young surgeon to the British Military Hospital in Nepal in the 1960s. His first book, Surgeon in Nepal, was published in 1970.

The descriptions will be familiar to all who have worked in small rural or mission hospitals: the need for poly-competency, far from the neat discipline-based limits of city practice; finding compromise solutions to otherwise insoluble problems; great reliance on clinical judgement in the absence of costly, high-tech investigations; innovative improvisations; huge financial constraints; the impossibility of transferring patients to specialised centres; the extremely hard and endlessly draining work; and so on. There are also numerous and fascinating observations on the daily details of Nepalese life.

The dust wrapper is a delight, a watercolour of a Himalayan scene by a fellow officer, while the book itself is illustrated with detailed and informative line drawings of Nepalese life by George Douglas.

The story is charmingly ingenuous, written in a style reminiscent of the East African Jungle Doctor series; the clearly compassionate and engaging author is present on every page. Although the hospital was primarily for the Gurkhas, the story is more scalpel than kukri, since the author served not only the soldiers but also the local (and, in many cases, not-so-local) villagers.

The text would have benefited from the attention of a proof-reader and an editor, but remains a valuable record of a vanished episode from one of the last outposts of the Empire, as well as an encouragement to all young surgeons in remote and unsung hospitals.

G. J. Oettle