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Editorial

Bowel preparation is unnecessary

Much surgical practice is no more than unexamined habit; one need look no further than our obsessive devotion to overshoes and masks in theatre, or the only recently abandoned use of sclerotherapy for piles (hallowed by more than a century of ‘experience’).

The question is (or at least should be) simple – is there any evidence to support a practice? In the absence of well-conducted trials there may be a case for relying on weaker evidence; however, once these are available we are morally bound to follow their results.

No guidelines exist for bowel preparation, perhaps because mechanical cleansing of the bowel is so hallowed a habit (reinforced by the shades of Arthusnot Lane and the demented auto-intoxicants) that any questioning is obviously quite unnecessary.

One of the classic statements of orthodoxy is Sir Hugh Lockhart-Mummery’s regimen – rigorous mechanical purgation for a week, as well as a week’s worth of toxic antibiotics ‘to sterilize the bowel’. Evidence in support of the practice is almost entirely missing, but two generations of surgeons followed suit. As far as antibiotic usage was concerned, change was slow. First came the recognition that we could not sterilise the lumen, then that we should not (i.e. that it made no difference), and finally that we should aim instead to provide high blood levels at the time of the surgery, and not worry about what was happening in the lumen at all.

Things were even slower with regard to mechanical preparation, probably since it is clearly obvious, self-evident, and logical that the gut should be emptied of its normal contents. The first hint of rebellion occurred in 1987 with an uncontrolled series of 72 consecutive emergency and elective colectomies with primary anastomosis. None received any bowel preparation; all had prophylactic antibiotics. There were no leaks, and the wound infection rate was only 8%. A similar series from Bristol a few years later reviewed 100 cases operated on by the one surgeon in Bristol who did not believe in bowel prep; he had one leak, and a 7% wound infection rate. In 1990, two postal surveys of 562 Board-certified colorectal surgeons in the USA found that all used bowel prep. This is about as instructive as the conclusion by Waldner and colleagues after a similar survey of German practice: ‘Mechanical bowel preparation is widely used. Therefore it can be considered as standard.’

It has been argued that as a discipline surgery is poorly susceptible to the randomised controlled trial, and that most progress is on the basis of ‘craft-based observation’. Curiously, most of the reviews cited here post-date the randomised trials; it seems there is no breaking surgeons of their bad habits (for whom experience has been defined as making the same mistake with increasing confidence).

Memon et al. carried out a retrospective review of 136 patients, 73 of whom had not had any prep before elective rectal or left-sided colon surgery. There were no differences in infectious or anastomotic problems. Van Geldere et al. published another single-surgeon series, with 250 unprepared cases (80% elective) comprising a typical range of right, left, and rectal anastomoses. The wound infection rate was 8%, and there were only 3 leaks, all of which occurred in the 32 patients with an extraperitoneal rectal anastomosis. It seems clear that, at least in selected hands, bowel prep could safely be omitted.

Other suggestive strands of evidence include practices that have been accepted without anyone noticing that they were ‘heretical’ – primary anastomosis after emergency colectomy for diverticulitis or sigmoid volvulus.

Case-control studies are more powerful than retrospective reviews. One paper compared 44 patients who had leaked after a colorectal anastomosis with matched controls (after the same operation) who had not. Logistical regression analysis identified malnutrition, weight loss, alcohol, operation lasting longer than 2 hours, multiple transfusions, and intra-operative contamination as the major factors. Among a host of other ostensible risk factors, the presence or omission of bowel preparation made no difference.

Some surgeons are obsessed with animal studies, in the deluded conviction that studies on rats, dogs or monkeys tell them more about humans than they do about rats, dogs or monkeys. In deference to this delusion, a few such studies are listed among the references. Perhaps the only conclusion to be drawn from these papers is that it all depends – if your dog needs a large-bowel operation and your veterinary surgeon trained on humans, the dog should have prior bowel prep if you live in Ireland or Brazil, but not in Wisconsin.

By the early 1990s, there was enough suspicion that mechanical preparation was worthless to justify rigorous study. The first randomised trial was published in 1994 with 169 patients. These included 133 cancers, 26 diverticuloses, 6 inflammatory bowel disease, and 4 miscellaneous. Left hemicolectomy or reversal of Hartmann’s procedure was done in 54 (28 unprepared), and anterior resection in 115 (59 unprepared). All the leaks (7) occurred after low anterior resection (3/39 prepared, 4/36 unprepared). There were 2 deaths, both in prepared patients.

A few months later, a similar study on 149 patients appeared from Brazil. Wound infection and anastomotic dehiscence were half as frequent in the unprepared group.

A Swiss meta-analysis concluded that all trials showed an increased leak rate after preparation (odds ratio 1.8). Although wound infection, re-operation, and intra-abdominal abscesses were more frequent after mechanical preparation, the differences were not statistically significant. In other words, there was no evidence to support mechanical bowel preparation, and it may even be harmful.

The recent Cochrane Review came to similar conclusions. Six satisfactory trials were identified, incorporating 1 159 analysable patients (576 prepared, 583 unprepared). The reviewers concluded: ‘The results failed to support the hypothesis that bowel preparation reduces anastomotic leak.
rates and other complications. The routine use of mechanical bowel preparation in patients undergoing elective colorectal surgery is questioned.’

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REFERENCES