

Optimal analgesia for laparoscopic colorectal surgery in an enhanced recovery programme

The widespread adoption of laparoscopic colorectal surgery has rekindled the debate on the optimal postoperative methods for analgesia after major bowel resection.

Thoracic epidural analgesia

For open surgery, particularly within an enhanced recovery programme, thoracic epidural analgesia is advocated (Fearon et al, 2005). It has numerous advantages for colorectal surgery in particular, with a reduced ileus and quicker return to normal gastrointestinal function, as well as general benefits such as reduced pulmonary thromboembolism and blood loss, and reduced stress response.

However, two areas of controversy exist. First, how many of these advantages are transferable to laparoscopic colorectal surgery? These latter patients have small, often transverse incisions with less pain (but with possibly shoulder tip pain from the laparoscopy) and are generally mobilizing early, as well as eating and drinking on the day of surgery. Second, common problems from thoracic epidural analgesia include hypotension (requiring intravenous fluids and risking sodium and fluid overload) and sometimes a degree of leg weakness, preventing early mobilization. In addition, epidural failure is not uncommon – up to 50% in some studies. These adverse effects may significantly impede postoperative progress. More serious problems include permanent neurological injury, highlighted in the NAP 3 report (Cook et al, 2009). As a result, for many areas of surgery, epidurals are becoming less frequently used.

In particular, there seems to be little data to support the continued use of epidurals

for laparoscopic colorectal surgery. A systematic review from the authors' unit (Levy et al, 2010) found that although early pain relief was better, there were no other advantages, nor a reduced length of stay.

Spinal, opioids and others

Given that most patients' analgesic requirements are relatively modest by 24 hours, a logical alternative to epidural analgesia is a spinal anaesthetic providing intense early analgesia. Many anaesthetists have widespread experience from its use in obstetrics, urology and orthopaedics in particular.

Levy et al (2009) used spinals successfully for the first 23-hour day case colectomy paper and more recently conducted a randomized controlled trial comparing spinals with epidurals and patient-controlled analgesia (Levy et al, 2011). This found that, in contrast to epidurals in open surgery, in laparoscopic colorectal surgery there was significantly more postoperative fluid requirements, poorer mobilization, slower return of gastrointestinal function, resulting in, on average, an increased length of stay of 1 day for epidurals. The spinal group had better early analgesia and return of gastrointestinal function and a marked opioid-sparing effect. However, opioids appeared to have little impact as the patient-controlled analgesia group had the same low length of stay as the spinal group. This finding called into question whether or not early opioid administration was as detrimental as previously thought.

In spite of the apparent lack of adverse effects of patient-controlled analgesia using morphine, many regard opioids as undesirable because of their plethora of adverse effects especially postoperative nausea and vomiting and ileus. Nearly 20 years ago, the concept of multimodal analgesia was popularized so that opioid consumption could be reduced. This includes simple analgesics (paracetamol and non-steroidal anti-inflammatory drugs) and the use of local anaesthetics for regional blockade. Today the list has grown to include other drugs such as the gabapentinoids, ketamine and glucocorticoids.

Given that some neural blockade is invariably used for laparoscopic colorectal surgery, the question remains as to what is the best technique. If epidurals are used less often, spinals may take their place. Other methods include transversus abdominis plane blocks, which have provided some encouraging data (Gash et al, 2011). The use of rectus sheath catheters and wound catheters or infiltration may also play a role.

Conclusions

This area continues to evolve rapidly. Analgesic techniques not only provide analgesia, but also have an effect on other areas include immune function and even micro-metastasis formation (Snyder and Greenberg, 2010). It is possible that these events may drive analgesic choices. In the nearer future, we may move away from neuroaxial blockade completely and rely on other local anaesthetic blockade and newer systemic analgesics. **BJHM**

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